



# EXCEL QUEST

VOLUME - 23, NOVEMBER 2021



Indian Observatories becoming prime location for deep Space Studies:



Referendum in New Caledonia



CICA 6th Foreign Ministers Meeting



Indian scientists develops a large scale reactor for hydrogen production



G. N. Ramachandran, or GNR as he was known, one of the great Indian scientists of modern era



OPEC's Caution on Boosting Supply



Unity Small Finance Bank begins operations, paving way for merging PMC

A Monthly Magazine from  
**EXCEL CIVILS ACADEMY**  
NTR Bhavan, Rd. No. 2, Banjara Hills, Hyderabad.  
Contact: 91004 33442, 91004 33445

[www.excelacademy.com](http://www.excelacademy.com)

# EXCEL QUEST

CURRENT AFFAIRS MAGAZINE

NOVEMBER – 2021

## **Advisory Committee:**

1. Shri K. Rajendra Kumar (Retd IPS).  
CEO, NTR Trust.
2. Shri Dr. M.V Rama Rao, MA, Ph.D.  
Academic Dean, NTR Trust.

## **Editorial Board:**

1. V. Naveen
2. Irfan Khan
3. Majeed Iqbal
4. K. Chandra Sekhar
5. Y. Srivatsa Kumar
6. Swetha Chanduri
7. Shiva Krishna Karnati
8. D. Chandra Sekhar

## Director's Message

Dear Aspirants,

The United Nations Conference of Parties met in Glasgow from October 31-November 13 for its 26<sup>th</sup> annual summit (COP26). The summit resulted in the Glasgow Climate Pact (GCP) meant for strengthening the global commitment to address climate change. The GCP called on 197 countries to report their progress towards more climate ambition next year, at COP27, set to take place in Egypt. Indian Prime Minister Narendra Modi pledged to cut emissions to net zero by 2070, reduce carbon emissions by one billion tonnes by 2030, and raise the share of renewables in the energy mix to 50%, among others. By 2030, Mr Modi said, India will reduce the emissions intensity of its economy by 45% (that's of all greenhouse gases not just CO<sub>2</sub>) - a more ambitious target than the previous goal of a 33-35% cut in its emissions intensity from the 2005 level by 2030. He has also pledged that India will increase its non-fossil fuel energy capacity to 500 gigawatts (GW) by 2030. Also in 2015, India promised to provide 40% of all electric power from non-fossil fuel sources by 2030. Mr Modi has now increased this figure to 50%.

The leaders from over 120 countries, representing about 90 per cent of the world's forests, pledged to halt and reverse deforestation by 2030, the date by which the Sustainable Development Goals (SDGs) to curb poverty and secure the planet's future are supposed to have been achieved. There was also a methane pledge, led by the United States and the European Union, by which more than 100 countries agreed to cut emissions of this greenhouse gas by 2030. Twenty-two countries have also pledged to phase out the internal combustion engine by 2035 and increase the share of zero-emission new cars and vans to 100%. The private sector also showed strong engagement with nearly 500 global financial services firms agreeing to align \$130 trillion – some 40 per cent of the world's financial assets – with the goals set out in the Paris Agreement, including limiting global warming to 1.5 degrees Celsius. An affirmation to resolutely pursue the 1.5-degree target is also mentioned in the Glasgow pact.

The Glasgow climate deal has put India and China in the spotlight after they opposed a commitment to "phase out" coal while negotiating the final agreement. Upon further deliberations, countries agreed to "phase down" coal, causing disappointment and concern over whether the world can limit the average global temperature rise to 1.5 degrees Celsius. "China and India will have to explain themselves and what they did to the most climate-vulnerable countries in the world," said the COP26 president, Alok Sharma. Mr Sharma also called the deal "historic" and said it "keeps 1.5 degrees Celsius within reach".

China stressed on "common but differentiated responsibilities and respective capabilities" or CBDR. It means countries that have signed the UN climate deal have a common responsibility to fight climate change, but have different capacities to do so given that they are in different stages of

economic development. China said that various countries' efforts to meet the 1.5degrees Celsius target should be seen in the context of their efforts to eradicate poverty. In support to China's statement, India's Environment Minister, Bhupender Yadav, said "How can anyone expect that developing countries make promises about phasing out coal and fossil fuel subsidies? Developing countries still have to deal with their poverty reduction agenda."

The emphasis on coal while leaving out oil and gas would disproportionately impact developing countries such as India and China, Brandon Wu, director of policy and campaigns at Action Aid, said. Developing countries such as India have argued that they are being put under pressure to move from fossil fuels to renewables, while developed countries are not helping them financially and with technology.

India is the third-largest carbon emitter after China and the US but its per capita emissions is around seven times lower than that of the US, according to studies, including one by the World Bank. Prime Minister Narendra Modi has set a target of net zero greenhouse gas emissions by 2070, a significantly later deadline than many other countries. India has resisted setting overall reduction targets, saying industrialised nations should bear a much greater share of the burden as they have contributed far more towards global warming over time. It says an "emissions intensity" target, which measures emissions per unit of economic growth, is a fairer way to compare it with other countries, it says.

An energy secure future is essential for India's economy - which is recovering from the pandemic while simultaneously battling sluggish growth - and coal is a big part of that goal. How India balances its growth and emissions is a major dilemma that needs to be tackled keeping aspirations of millions of people in mind.

Best wishes.



K. Rajendra Kumar IPS (Retd)

## **Good Governance-Gandhian Perspective**

**Dr. M.V. Rama Rao**

(Academic Dean)

Government and governance are not synonymous. Government is an institution and Governance is a process. Governance is a collaborative exercise. Government, especially in the era of Liberalisation, Privatisation and Globalisation is providing services not on its own alone but in collaboration with other organizations namely private sector (market) and the civil Society. Thus, governance is a collaborative effort of State, Market and Civil Society in providing services to the people. Public (Govt), Private (market) and People (Civil Society) Partnership is governance.

Governance is as old as government and good governance is as old as government itself. But the concept of good governance became popular in the modern period because of the World Bank as the context of redefining the role of the state on account of neo liberal economic reforms. The World Bank has defined good governance as public service that is efficient, an administrative system that is accountable and a judiciary that is reliable.

Good Governance means decentralized governance, self-governance, participatory governance, developmental governance, human governance or more governance and less government etc. Prime Minister Mr. Narendra Modi often speaks about minimum government and maximum governance.

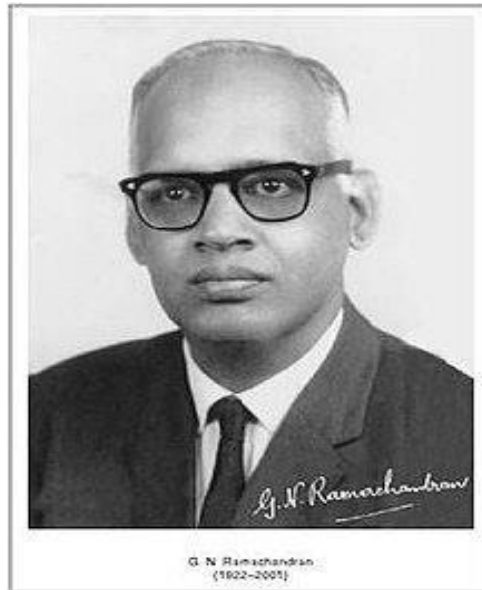
Minimum government and maximum governance are considered as good governance. Democracy, Decentralization and Development are interlinked and essential for good governance. Mahatma Gandhi's concept of Rama Rajya can be cited as one of the models of good governance. The following is the conception of good governance of Mahatma Gandhi. Gandhi favoured the total decentralization of politics, economy and administration. He visualised an all-powerful village Panchayat at the village level and a National Panchayat [Central govt] at the National level whose role will be consigned to Defence, Foreign Affairs, International Trade of commerce, currency and coinage.

As Gandhi says, "In my opinion Swaraj and Rama Rajya is one and the same thing... We call a State Rama Rajya when both the ruler and his subjects are straightforward, when both are pure in heart, when both are inclined towards self-sacrifice, when both exercise restraint and self-control while enjoying worldly pleasures, and, when the relationship between the two is as good as that forgotten this that we talk of democracy or the government of the people. Although this is the age of democracy, I do not know what the word connotes; however, I would say that democracy exists where the people's voice is heard, where love of the people holds a place of prime importance. In my Rama Rajya, however, public opinion cannot be measured by counting of heads or raising of hands. I would not regard this as a measure of public opinion; ... The Rishis and the Munis [wisemen/philosophers of ancient India] after doing penance came to the conclusion that public opinion is the opinion of people who practise penance and who have the good of the people at heart." (Enlightened Public opinion is essential for democracy).



### Personality of the month:

- G. N. Ramachandran, or GNR as he was known, is one of the great Indian scientists of modern era; he was not only a great scientist but an equally good Vedic scholar and someone who studied the Upanishads in depth.



- GNR was born on Oct 8, 1922 at Ernakulam, the eldest son of G.R. Naryana Iyer, a maths professor at Maharajah's College and Lakshmi Ammal. Much like the Travancore Maharaja, the Kochi Maharaja was an equally wise and enlightened ruler.
- His father would later retire as the principal of Maharaja's College, and he credited his interest in mathematics to him. He later joined St. Josephs. Trichy in 1939, topping the Physics Honors course in the entire Madras Presidency.
- Though his father wanted him to join the Civil Services, he was not interested, and he later joined the Electrical Engineering department at IISc (Indian Institute of Science). However he later switched to the Physics Department there, his first love as he called it.
- The motivation for his switch was that the Physics Department there was headed by the legendary C.V. Raman, whom he considered one of his biggest influences, other two being Linus Pauling and William Bragg.
- Raman was particularly impressed by his ability to solve the Raleigh-Jeans problem in optics, and the way he tackled it with rigorous proof. He recommended him for a scholarship, gave him an associate degree too, and would be his mentor in many ways.
- He went to Cambridge in 1947, to pursue his research at the Cavendish Laboratory, headed by William Bragg then. However he could not directly work with Bragg and instead was assigned to Dr. Wooster.

- On his return to India in 1949, he was appointed as Asst Professor of Physics at IISc, however his mentor Raman was no longer there, having left IISc and started his own Raman Research Institute.
- He was put in charge of the X-Ray Diffraction Lab there that would later become a major research center at IISc. In 1952, he shifted to Madras University, on the request of its Vice Chancellor, Dr. A. Lakshmanaswamy Mudaliar, a long time Raman associate.
- He organized two major international conferences in 1963, 1968, managing to get in the likes of Linus Pauling, Paul Florty and others, ensuring that the University got global recognition.
- Unfortunately with the retirement of Mudaliar, GNR did not have the support, and with the next VC Sundara Vadivelu playing dirty, he resigned from Madras University in 1970 and came back to his first love IISc, which was being headed by Satish Dhawan then.
- Dhawan gave him the responsibility of setting up new Department of Molecular Biophysics at IISc, in 197, that would soon become a major center of structural biology research.

### **Major contributions:**

1. His major contribution would be the discovery of the triple helical structure of collagen, motivated by the remarks of J.D. Bernal that its structure theory was not satisfactory. He came out with this theory in a paper co-authored with Gopinath Kartha in 1955.
2. He was equally fascinated by Fourier Transforms, applying them for developing the theory of Image Reconstruction from X-Ray Radiographs.
3. In 1971 GNR along with A.V. Lakshminarayana published a seminal research paper on 3 D Image reconstruction, that would lead to the development of CT Scan.
4. In 1976 he came up with Boolean Algebra Vector Matrix Formulation based on Fundamental theory and Mathematical philosophy.

### **Later life:**

- The death of his wife Rajalakshmi in 1998, devastated him emotionally, and his later years were spent grappling with depression, and psychiatric problems. Afflicted by Parkinson's disease, he passed away in Chennai on April 7, 2001.
- G.N. Ramachandran was acclaimed as a scientist of Nobel Prize calibre by Linus Pauling, Francis Crick among others. Unfortunately his contribution to Indian science was not recognised and this is reflected by the fact that he was not even given a Padma Award, nor did his contribution been given due recognition, except in IISc.
- He was truly one of the great scientists of modern India, on par with the likes of Raman, J.C. Bose, S.N. Bose, Bhatnagar, Vikram Sarabhai, Bhabha. A scientists who deserved the Nobel, much like Yellapragada, SN Bose, but never got due recognition.



## TABLE OF CONTENT

<b>1. NATIONAL.....</b>	<b>1-22</b>
1.1 Ayushman Bharat Digital Mission:	
1.2 GI Tag To Assam's Judima Wine Rice:	
1.3 National Mission On Cultural Mapping:	
1.4 The Government Aid To An Institution Is A Matter Of Policy And It Is Not A Fundamental Right:	
1.5 Zojila Tunnel:	
1.6 Ordnance Factory Board (OFB):	
1.7 Renewable Energy Certificate (REC) Mechanism:	
1.8 Mekedatu Issue:	
1.9 Special Category Status:	
1.10 Green Term Loan :	
1.11 AMRUT 2.0:	
1.12 Swachh Bharat Mission-Urban 2.0:	
1.13 One Sun, One World, One Grid (OSOWOG):	
1.14 Pandora papers :	
1.15 Election Commission Decides On Party Symbols:	
1.16 The State Of The World's Children 2021:	
1.17 Forest Conservation Act (FCA):	
1.18 Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP):	
1.19 Palk Bay Scheme:	
1.20 Sustainable Urban Plastic Waste Management In New Delhi: NITI Ayog	
1.21 PM Gati Shakti Scheme:	
<b>2. INTERNATIONAL RELATIONS.....</b>	<b>23-40</b>
2.1 Referendum in New Caledonia	
2.2 CICA 6th Foreign Ministers Meeting	
2.3 Extension of CPEC to Afghanistan	
2.4 IEA Invites India to be a Full-Time Member	
2.5 Review of IMF Role	
2.6 Nobel Peace Prize 2021	
2.7 Normalizing Saudi-Iran Relations	
2.8 PM Speech at United Nations General Assembly	
2.9 Rail Link between Nepal and India	
2.10 Tax Inspectors without Borders Programme	

**3. INDIAN ECONOMY.....41-67**

- 3.1 OPEC’s Caution on Boosting Supply
- 3.2 Nobel Prize 2021 for Economics - Public Policy Relevance
- 3.3 Gati Shakti National Master Plan
- 3.4 Unity Small Finance Bank
- 3.5 IIP and CPI data - August 2021
- 3.6 Ease of Doing Business Rankings - A Controversy
- 3.7 Animal husbandry needs Attention
- 3.8 Protecting India’s Natural Labs
- 3.9 Questions arising from QES data
- 3.10 Need to clean up the World Bank and IMF
- 3.11 Spike in Crude Oil Prices – Impacts
- 3.12 Coal Shortage in India
- 3.13 Trade Multilateralism at Risk
- 3.14 RBI’s Microfinance Proposals
- 3.15 Demands on Legal Guarantee for MSP
- 3.16 SBM-U 2.0 and AMRUT 2.0
- 3.17 Reimagining food systems with lessons from India
- 3.18 Nord Stream 2 Pipeline

**4. ENVIRONMENT.....68-87**

**5. SCIENCE & TECHNOLOGY.....88-100**

- 5.1 Indian Observatories becoming prime location for deep Space Studies:
- 5.2 Digi Saksham: An Expansive program to strengthen digital know-how:
- 5.3 NAPRE unveiled, to eliminate rabies by 2030:
- 5.4 India develops organic semiconductor based Large-Scale Reactor to Produce Hydrogen:
- 5.5 WHO recommends ground-breaking RTS,S malaria vaccine for Children
- 5.6 Cyber Surakshit Bharat and Cyber Surakshit World:
- 5.7 NITI Aayog, ISRO unveil Geospatial ‘Energy Map of India’ in a bid to boost policy development:

## 1. NATIONAL

### 1.1 Ayushman Bharat Digital Mission:

Prime Minister Shri Narendra Modi launched the Ayushman Bharat Digital Mission

- The pilot project of Ayushman Bharat Digital Mission had been announced by the Prime Minister from the ramparts of Red Fort on 15th August, 2020.
- Currently, Ayushman Bharat Digital Mission is being implemented in pilot phase in six Union Territories.
- The nation-wide rollout of Ayushman Bharat Digital Mission coincides with NHA celebrating the third anniversary of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY).
- Ayushman Bharat Digital Mission is based on the foundations laid down in the form of Jan Dhan, Aadhaar and Mobile (JAM) trinity and other digital initiatives of the government
- Ayushman Bharat Digital Mission will create a seamless online platform through the provision of a wide-range of data, information and infrastructure services, duly leveraging open, interoperable, standards-based digital systems while ensuring the security, confidentiality and privacy of health-related personal information.
- The key components of Ayushman Bharat Digital Mission include
  - a health ID for every citizen that will also work as their health account, to which personal health records can be linked and viewed with the help of a mobile application;
  - a Healthcare Professionals Registry (HPR) and Healthcare Facilities Registries (HFR) that will act as a repository of all healthcare providers across both modern and traditional systems of medicine.
  - Ayushman Bharat Digital Mission Sandbox, created as a part of the Mission, will act as a framework for technology and product testing that will help organizations, including private players, intending to be a part of National Digital Health Ecosystem becomes a Health Information Provider or Health Information User.

#### **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) :**

- Ayushman Bharat PM-JAY is the largest health assurance scheme in the world which aims at providing a health cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization to over 10.74 crores poor and vulnerable families (approximately 50 crore beneficiaries) that form the bottom 40% of the Indian population.
- The households included are based on the deprivation and occupational criteria of Socio-Economic Caste Census 2011 (SECC 2011) for rural and urban areas respectively. PM-JAY was earlier known as the National Health Protection Scheme (NHPS) before being rechristened. It subsumed the then existing Rashtriya Swasthya Bima Yojana (RSBY) which had been launched in 2008. The coverage mentioned under PM-JAY, therefore, also includes families that were covered in RSBY

but are not present in the SECC 2011 database. PM-JAY is fully funded by the Government and cost of implementation is shared between the Central and State Governments.

## **1.2 GI Tag To Assam's Judima Wine Rice:**

Judima, a home-made rice wine of Assam's Dimasa tribe has become the first traditional brew in all of northeast to bag a Geographical Indication (GI) tag.

- This is the second product from the hill districts of Karbi Anglong and Dima Hasao to get GI tag.
- Earlier, Manipur's most famous Hathei chilli and Tamenglong orange were awarded the GI Tag.
- Judima is a rice wine made from sticky rice (glutinous rice called Bora), which is steamed and mixed with traditional herbs called Thembra (*Acacia pennata*).
- The wine is a specialty of the Dimasa tribe of the state (Assam) and has a distinct sweet taste and takes around one week to prepare and it can be stored for years.
- There are around 14 recognized Plain Tribe communities, 15 Hills Tribe communities and 16 recognized Scheduled Caste communities in the state.
- The Bodos are the largest group, comprising almost half of the state's tribal population. Other major ST groups include Mising, Karbi, Rabha, Kachari, Lalung and Dimasa.

### **Geographical Indication (GI):**

- GI is an indication used to identify goods having special characteristics originating from a definite geographical territory.
- It is also a part of the World Trade Organisation's Trade-Related Aspects of Intellectual Property Rights (TRIPS).
- GI tag in India is governed by Geographical Indications of Goods (Registration & Protection) Act, 1999. It is issued by the Geographical Indications Registry (Chennai).
- The registration of a geographical indication is valid for a period of 10 years.
- The GI protection in India leads to recognition of the product in other countries thus boosting exports.

### **Benefits of registering a geographical indication are:**

- **ENHANCES ECONOMIC GROWTH**

The protection of geographical indications leads to the overall economic prosperity of the manufacturers and producers. Furthermore, the marketing and promotion of the products with the GI tags enhance the secondary economic activities in that specific region, which in turn boosts the regional economic development.

- **PREVENTS UNAUTHORIZED USE OF GI TAGS**

The registered holder of the GI tag has all the legal rights to prevent anyone not belonging to the GI region from using their GI tags. The owners can also initiate legal proceedings against the unauthorized user to save their reputation from being damaged.

- **EXPANDS BUSINESS**

The prime purpose of registering a geographical indication is to seek protection for specific products produced in a particular geographical region, which further encourages and motivates the marketers to expand their business at a global level. Furthermore, the protection of geographical indications boosts exports and helps the producers in earning well for themselves.

- **INCREASES TOURISM**

The protection of GI tags builds a global reputation for the products. People around the world notice various GI products from different regions and get motivated to visit those regions and use such products. Therefore, it helps in the growth of the tourism industry of that particular region as well.

### **1.3 National Mission On Cultural Mapping:**

The National Mission on Cultural Mapping (NMCM) has been handed over to the Indira Gandhi National Centre for the Arts (IGNCA), which will start a trial run in 75 villages in October 2021.

- IGNCA was established in 1987 as an autonomous institution under the Ministry of Culture, as a centre for research, academic pursuit and dissemination in the field of the arts.
- IGNCA aims to complete mapping in 5,000 villages by the end of financial year 2021-2022.
- The Ministry of Culture had approved the NMCM in 2017 to build a comprehensive database of artists, art forms and other resources from organisations under the Ministry.
- It is aimed at addressing the necessities of preserving the threads of rich Indian Art and Cultural Heritage, converting vast and widespread cultural canvas of India into an objective Cultural Mapping while creating a strong “Cultural Vibrancy” throughout the nation.
- It encompasses data mapping, demography building, formalising the processes and bringing all cultural activities under one umbrella for better results.
- The work on creating a database for folk arts and mapping of heritage of villages would be carried out over five years (From 2017).
- Volunteers from the Nehru Yuva Kendra Sangathan, the National Service Scheme and students of sociology and social work would be deputed to collect such data from villages.

#### **Importance:**

- Promoting Cultural Awareness
- Optimal Resource Allocation and Utilization

- Cultural Conservation
- Sustainable Employment to creative industries
- Creation of objective Database for inclusive growth of cultural heritage

#### **1.4 The Government Aid To An Institution Is A Matter Of Policy And It Is Not A Fundamental**

##### **Right:**

The Supreme Court has held that the government aid to an institution is a matter of policy and it is not a fundamental right.

- The judgment came on an appeal filed by the Uttar Pradesh' government challenging the 2018 Allahabad High Court verdict holding that a regulation framed under The Intermediate Education Act, 1921 is unconstitutional. The apex court set aside the HC verdict.

##### **Important observations made by the Court:**

- Grant of aid brings with it conditions which the institution receiving it is bound to comply with. If an institution does not want to accept the conditions, it can decline the grant but cannot say that the grant must be on its own terms.
- A decision to grant aid is by way of policy. While doing so, the government is not only concerned with the interest of the institutions but the ability to undertake such an exercise.
- As regards aided institutions, there cannot be any difference between a minority and non-minority one. Article 30 of the Constitution of India is subject to its own restrictions being reasonable.

##### **Constitutional Provisions regarding Minority Educational Institutions:**

- Article 30(1) recognizes linguistic and religious minorities but not those based on race, ethnicity.
- It recognizes the right of religious and linguistic minorities to establish and administer educational institutions, in effect recognizing the role educational institutions play in preserving distinct culture.
- A majority community can also establish and administer educational institutions but they will not enjoy special rights under Article 30(1)(a)

#### **1.5 Zojila Tunnel:**

Government is trying to complete the massive Zojila tunnel, its showpiece infra project in Kashmir and Ladakh, before Republic Day, 2024. Road Transport Minister Nitin Gadkari inspected the west portal of the tunnel in Baltal.

- At 14.15 km, the Zojila tunnel will be India's longest road tunnel, and Asia's longest bi-directional tunnel.
- A connecting tunnel from Z-Morh on NH1 to the Zojila tunnel will be built in the Zojila Ghats between Sonmarg and Kargil.

- When complete, the Zojila tunnel will allow travel between Srinagar and Ladakh throughout the year.
- The distance from Baltal to Minamarg will come down to 13 km from the present 40 km, travel time is expected to be cut by an hour and a half, and the journey is expected to be less strenuous.
- The project is expected to lead to integrated development of both Jammu and Kashmir and Ladakh.
- The work on the entire 33-km span is divided into two divisions.
- The first part involves development and expansion of the 18.475-km highway between Z-Morh to Zojila. A 3-km stretch will be expanded; the rest will be newly developed. The highway will have 2 twin-tube tunnels, 5 bridges, and 2 snow galleries.
- The second part is building the 14.15-km Zojila tunnel itself — 9.5 m wide, 7.57 m high, 2 lanes, in shape of a horseshoe.
- In addition, a 2,350-m concrete ‘cut and cover’ tunnel will be built, along with 3 ventilation caverns/shafts. Works also include construction of portals, control buildings, ventilation buildings and muck disposables along the route.

#### **1.6 Ordnance Factory Board (OFB):**

The Defence Ministry has issued an order for the dissolution of the Ordnance Factory Board (OFB) with effect from October 1 upon which its assets, employees and management would be transferred to seven newly constituted defence public sector undertakings (DPSUs).

- This would mean the end of the OFB, the establishment of which was accepted by the British in 1775.
- On June 16, the Union Cabinet had approved a long-awaited reform plan to corporatise the OFB, which has 41 factories, into seven fully government-owned corporate entities on the lines of DPSUs.
- With effect from October 1, the management, control, operations and maintenance of these 41 production units and identified non-production units would be transferred to seven government companies: Munitions India Ltd., Armoured Vehicles Nigam Ltd., Advanced Weapons and Equipment India Ltd., Troop Comforts Ltd., Yantra India Ltd., India Optel Ltd., and Gliders India Ltd.
- All the employees of OFB (Group A, B and C) belonging to the production units and also the identified non-production units shall be transferred en masse to the new DPSUs on terms of foreign service without any deputation allowance initially for a period of two years.

#### **For-against corporatisation:**

- The restructuring of the Kolkata-headquartered OFB into corporate entities was recommended in one or the other form by at least three expert committees on defence reforms set up in the last two

decades — the TKS Nair Committee (2000), Vijay Kelkar Committee (2005), and Vice Admiral Raman Puri Committee (2015). A fourth committee, constituted by former Defence Minister Manohar Parrikar and chaired by Lt Gen D B Shekatkar, did not suggest corporatisation, but recommended regular audits of all ordnance units considering past performance.

- The central argument has been that corporatisation, which will bring these entities under the purview of The Companies Act, would lead to improvements in efficiency, make products cost-competitive, and enhance their quality.
- It has been argued that OFB's monopoly has led to innovation drying up, apart from low productivity, high costs of production, and lack of flexibility at the higher managerial levels.
- Functioning directly under the Ministry of Defence, the OFB and its factories could not retain profits, and thus had no incentive to work towards increasing them, many have argued.
- Discussions on restructuring with workers' federations had failed to produce results on several occasions previously. Employees argued that corporatisation was a "move towards privatisation". They expressed fears of job losses, and said a corporate entity would not be able to survive the unique market environment of defence products with its unstable demand-supply dynamics.

The federations have insisted the factories have been innovative, and have repeatedly proven their worth as a "war reserve". Many OFB products are exported, they have argued.

### **1.7 Renewable Energy Certificate (REC) Mechanism:**

Union Minister of Power and New & Renewable Energy has given his assent to amendments in the existing Renewable Energy Certificate (REC) mechanism. The intent behind this decision is to align the 'mechanism' with the emerging changes in the power scenario and also to promote new renewable technologies.

#### **The Salient features of changes proposed in revamped REC mechanism are:**

- Validity of REC would be perpetual i.e., till it is sold.
- Floor and forbearance prices are not required to be specified.
- CERC to have monitoring and the surveillance mechanism to ensure that there is no hoarding of RECs.
- The RE generator who are eligible for REC, will be eligible for issuance of RECs for the period of PPA as per the prevailing guidelines. The existing RE projects that are eligible for REC would continue to get RECs for 25 years.
- A technology multiplier can be introduced for promotion of new and high priced RE technologies, which can be allocated in various baskets specific to technologies depending on maturity.
- RECs can be issued to obligated entities (including DISCOMs and open access consumers) which purchase RE Power beyond their RPO compliance notified by the Central Government.



- No REC to be issued to the beneficiary of subsidies/concessions or waiver of any other charges. The FOR to define concessional charges uniformly for denying the RECs.
- Allowing traders and bilateral transactions in REC mechanism.
- The changes proposed in revamped REC mechanism will be implemented by CERC through regulatory process.
- To address mismatch between availability of RE sources and the requirement of the obligated entities to meet their renewable purchase obligation (RPO), Pan-India market-based Renewable Energy Certificate (REC) Mechanism was introduced in the year 2010.
- The proposed changes will provide some flexibility to the players, additional avenues, rationalization and also addressing the RECs validity period uncertainty issues.

### **Government initiatives**

Some initiatives by Government of India to boost India's renewable energy sector are as follows:

- In June 2021, Indian Renewable Energy Development Agency Ltd. (IREDA) has invited bids from solar module manufacturers for setting up solar manufacturing units under the central government's Rs. 4,500 crore (US\$ 616.76 million) Production Linked Incentive (PLI) scheme.
- As of March 2021, State Bank of India financed Rs. 319.18 billion (US\$ 4.28 billion) in renewable energy projects in India, wherein the bank financed 752 renewable energy projects, with a total installed capacity of 13.8 GW.
- In June 2021, the Competition Commission of India (CCI) approved Renew Power to exchange equity shareholding by its existing shareholders with shares of Renew Global. Along with this, the CCI also approved a reverse triangular merger of Renew Global's subsidiary with RMG II.
- In April 2021, the Central Electricity Authority (CEA) and CEEW's Centre for Energy Finance (CEEW-CEF) jointly launched the India Renewables Dashboard that provides detailed operational information on renewable energy (RE) projects in India.
- In April 2021, the Ministry of Power (MoP) released the draft National Electricity Policy (NEP) 2021 and has invited suggestions from all stakeholders such as Central Public Sector Undertakings, Solar Energy Corporation of India, power transmission companies, financial institutions like Reserve Bank of India, Indian Renewable Energy Development Agency, HDFC Bank, ICICI Bank, industrial, solar, and wind associations, and state governments.
- In March 2021, the Union Cabinet approved a Memorandum of Understanding (MoU) in the field of renewable energy cooperation between India and the French Republic.
- In March 2021, Haryana announced a scheme with a 40% subsidy for a 3 KW plant in homes, in accordance with the Ministry of New and Renewable Energy's guidelines, to encourage solar

energy in the state. For solar systems of 4-10 KW, a 20% subsidy would be available for installation from specified companies.

- In March 2021, India introduced Gram Ujala, an ambitious programme to include the world's cheapest LED bulbs in rural areas for Rs. 10 (US\$ 0.14), advancing its climate change policy and bolstering its self-reliance credentials.
- In the Union Budget 2021-22, Ministry for New and Renewable Energy was allocated Rs. 5,753 crore (US\$ 788.45 million) and Rs. 300 crore (US\$ 41.12 million) for the 'Green Energy Corridor' scheme.
- Under Union Budget 2021-22, the government has provided an additional capital infusion of Rs. 1,000 crore (US\$ 137.04 million) to Solar Energy Corporation of India (SECI) and Rs. 1,500 crore (US\$ 205.57 million) to Indian Renewable Energy Development Agency.
- To encourage domestic production, customs duty on solar inverters has been increased from 5% to 20%, and on solar lanterns from 5% to 15%.
- In November 2020, Ladakh got the largest solar power project set-up under the central government's 'Make in India' initiative at Leh Indian Air Force Station with a capacity of 1.5 MW.
- In November 2020, the government announced production-linked incentive (PLI) scheme worth Rs. 4,500 crore (US\$ 610.23 million) for high-efficiency solar PV modules manufacturing over a five-year period.
- On November 17, Energy Efficiency Services Limited (EESL), a joint venture of PSUs under the Ministry of Power and the Department of New & Renewable Energy (DNRE), Goa, signed a memorandum of understanding to discuss roll-out of India's first Convergence Project in the state.
- In October 2020, the government announced a plan to set up an inter-ministerial committee under NITI Aayog to forefront research and study on energy modelling. This, along with a steering committee, will serve the India Energy Modelling Forum (IEMF), which was jointly launched by NITI Aayog and the United States Agency for International Development (USAID).
- India plans to add 30 GW of renewable energy capacity along a desert on its western border such as Gujarat and Rajasthan.
- Delhi Government decided to shut down thermal power plant in Rajghat and develop it into 5,000 KW solar park
- The Government of India has announced plans to implement a US\$ 238 million National Mission on advanced ultra-supercritical technologies for cleaner coal utilisation.
- Indian Railways is taking increased efforts through sustained energy efficient measures and maximum use of clean fuel to cut down emission level by 33% by 2030.

### 1.8 Mekedatu Issue:

Facing strong objection from Tamil Nadu, Kerala, and Puducherry, the Cauvery Water Management Authority's (CWMA) had urged Karnataka to promptly deliver the balance quantum of water owed to Tamil Nadu, whilst dropping debate on the Mokedatu project.

- The release should be as per the Cauvery Water Disputes Tribunal's decision of 2007, which was modified by the Supreme Court in 2018.
- Tamil Nadu noted that Karnataka had only provided 85.8 TMC water instead of 119.5 TMC water until September 26. Tamil Nadu contended that Karnataka should indeed be ordered to deliver the surplus as well as the quota for the month of October promptly so that paddy planting in the Delta region may be protected.

#### **About CWMA:**

- It has been created as per the Cauvery Management Scheme earlier framed by Centre and approved by Supreme Court.

#### **Composition and Powers of CMA:**

- The authority will comprise a chairman, a secretary and eight members.
- Out of the eight members, two will be full time, while two will be part time members from centre's side.
- Rest four will be part time members from states.
- Functions:
- The main mandate of the CMA will be to secure implementation and compliance of the Supreme Court's order in relation to "storage, apportionment, regulation and control of Cauvery waters".
- CMA will also advise the states to take suitable measures to improve water use efficiency.
- It will do so by promoting use of micro-irrigation, change in cropping patterns, improved farm practices and development of command areas.
- The CMA will also prepare an annual report covering its activities during the preceding year.

#### **About Mokedatu Project:**

- Mokedatu is a multipurpose (drinking and power) project.
- It involves building a balancing reservoir, near Kanakapura in Ramanagara district in Karnataka.
- The project once completed is aimed at ensuring drinking water to Bengaluru and neighboring areas (4.75 TMC) and also can generate 400 MW power.
- The estimated cost of the project is Rs 9,000 crore

### **1.9 Special Category Status:**

The Bihar Government has asserted that it has not dropped the demand of special category status to Bihar.

#### **About Special Category Status (SCS):**

- Special category status is a classification given by the Centre to assist development of states that face geographical and socio-economic disadvantages.
- This classification was done on the recommendations of the Fifth Finance Commission in 1969.
- It was based on the Gadgil formula.

**The parameters for SCS were:**

- Hilly Terrain;
- Low Population Density And/or Sizeable Share of Tribal Population;
- Strategic Location along Borders With Neighbouring Countries;
- Economic and Infrastructure Backwardness; and
- Nonviable Nature of State finances.

SCS was first accorded in 1969 to Jammu and Kashmir, Assam and Nagaland. Since then eight more states have been included (Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura and Uttarakhand).

- There is no provision of SCS in the Constitution.
- Special Category Status for plan assistance was granted in the past by the National Development Council to the States that are characterized by a number of features necessitating special consideration.
- Now, it is done by the central government.
- The 14th Finance Commission has done away with the 'special category status' for states, except for the Northeastern and three hill states.
- Instead, it suggested that the resource gap of each state be filled through 'tax devolution', urging the Centre to increase the states' share of tax revenues from 32% to 42%, which has been implemented since 2015.

**Benefits for the Special Category States:**

1. States with Special Category Status are exempted from excise duty, customs duty, corporate tax, income tax and other taxes to attract investment.
2. Centre bears 90% of the state expenditure (given as grant) on all centrally-sponsored schemes and external aid while rest 10% is given as loan to state at zero percent rate of interest. While general category states get 70% fund as loan and 30% in the form of grant.
3. A huge 30% amount of planned expenditure of the central budget goes to 'Special Category' States.
4. Special Category States can avail the benefit of debt swapping and debt relief schemes.
5. Special Category States get preferential treatment in getting central fund which attracts the development projects in the states.

6. Special Category States have the facility that if they have unspent money in a financial year; it does not lapse and gets carry forward for the next financial year.

### **1.10 Green Term Loan :**

NTPC Renewable Energy (NTPC-REL), a subsidiary of NTPC, has signed its first Green Term Loan agreement for installation of Solar Projects in Rajasthan & Gujarat.

- NTPC-REL is also constructing India's largest single local solar power park of 4.75 GW in Kutch.
- NTPC is taking various steps to make its energy portfolio greener by adding significant capacities of renewable energy sources.

#### **About 'Green Loan':**

- A green loan is a form of financing that seeks to enable and empower businesses to finance projects which have a distinct environmental impact, or rather, which are directed towards financing 'green projects'.
- It will help raise corporate value, by demonstrating that they are actively promoting Green Projects by procuring Green Loans, which could possibly earn them public acceptance.
- This will also help in fulfilling Corporate Social Responsibility targets.
- By providing Green Loans, lenders can support the realization of the environmental benefits that contribute to creating a sustainable society, while simultaneously gaining returns on their lending.
- An increase in Green Loans and Green Deposits will enhance individual awareness of Green Loans.
- An increase in Green Loans is expected to increase private funds in Green Projects, contributing to the substantial reduction of GHG (GreenHouse Gas) emissions and the prevention of degradation of natural capital.
- The promotion of Green Projects can lower energy costs, strengthen energy security, revitalize the regional economy, and enhance resilience in the event of disasters

### **1.11 AMRUT 2.0:**

Prime Minister Shri Narendra Modi has launched Atal Mission for Rejuvenation and Urban Transformation 2.0 on 1st October 2021, at Dr. Ambedkar International Centre, New Delhi.

- AMRUT 2.0 aims to provide 100% coverage of water supply to all households in around 4,700 urban local bodies by providing about 2.68 crore tap connections and 100% coverage of sewerage and septage in 500 AMRUT cities by providing around 2.64 crore sewer/ septage connections, which will benefit more than 10.5 crore people in urban areas.
- AMRUT 2.0 will adopt the principles of circular economy and promote conservation and rejuvenation of surface and groundwater bodies.
- The Mission will promote data led governance in water management and Technology Sub-Mission to leverage latest global technologies and skills.

- ‘Pey Jal Survekshan’ will be conducted to promote progressive competition among cities.
- The outlay of AMRUT 2.0 is around Rs. 2.87 lakh crore.
- AMRUT has been ensuring water security by adding 1.1 crore household water tap connections and 85 lakh sewer connections, thus benefiting more than 4 crore people.

### **1.12 Swachh Bharat Mission-Urban 2.0:**

Prime Minister Narendra Modi has launched Swachh Bharat Mission-Urban 2.0 on 1st October 2021, at Dr. Ambedkar International Centre, New Delhi.

- SBM-U 2.0 envisions to make all cities ‘Garbage Free’ and ensure grey and black water management in all cities other than those covered under AMRUT, make all urban local bodies as ODF+ and those with a population of less than 1 lakh as ODF++, thereby achieving the vision of safe sanitation in urban areas.
- The Mission will focus on source segregation of solid waste, utilizing the principles of 3Rs (reduce, reuse, recycle), scientific processing of all types of municipal solid waste and remediation of legacy dumpsites for effective solid waste management.
- The outlay of SBM-U 2.0 is around Rs. 1.41 lakh crore.
- Impact of SBM-U
- Swachhta has become a Jan Andolan today.
- All urban local bodies have been declared Open Defecation Free (ODF) and 70% solid waste is being scientifically processed now

#### **Impact of SBM-U and AMRUT:**

SBM-U and AMRUT have contributed significantly to improve urban landscape during the last seven years. The two flagship Missions have augmented the capacity to deliver basic services of water supply and sanitation to the citizens. Swachhta has become a Jan Andolan today. All urban local bodies have been declared Open Defecation Free (ODF) and 70% solid waste is being scientifically processed now.

### **1.13 One Sun, One World, One Grid (OSOWOG):**

India and the UK are likely to announce a joint declaration on “one sun, one world, one grid” — or OSOWOG at the upcoming Conference of Parties (COP26).

- The UN Climate Change Conference, or COP26, is scheduled to be held between 31st October and 12th November in Scotland.
- The concept of OSOWOG is what the British have called a green grid.
- The idea behind the concept is a trans-national electricity grid supplying solar power across the globe.

#### **OSOWOG or the Green Grid:**

- The vision behind the OSOWOG is ‘The Sun Never Sets’ and is a constant at some geographical location, globally, at any given point of time.
- This is by far one of the most ambitious schemes undertaken by any country (India) and is of global significance in terms of sharing economic benefits.
- It has been taken up under the technical assistance program of the World Bank.
- The OSOWOG plan may also leverage the International Solar Alliance (ISA), co-founded by India that has 80 countries as members.
- With India in the middle, the solar spectrum can easily be divided into two broad zones, which are:
  - Far East including countries like Myanmar, Vietnam, Thailand, Lao, Cambodia etc.
  - Far West covering the Middle East and the Africa Region.

**Three Phases of the Plan:**

- First Phase: It will entail interconnectivity within the Asian continent.
- Second Phase: It will add Africa.
- Third Phase: It is about global interconnection.

**Significance of the Project:**

- Help all the participating entities in attracting investments in renewable energy sources as well as utilizing skills, technology and finances.
- Lead to reduced project costs, higher efficiencies and increased asset utilization for all the participating entities.
- Resulting economic benefits would positively impact poverty alleviation and support in mitigating water, sanitation, food and other socio-economic challenges.
- Allow national renewable energy management centres in India to grow as regional and global management centres.
- This move, during the time of the Covid-19 pandemic, gives India the opportunity to be seen as taking a lead in evolving global strategies.

**International Solar Alliance (ISA):**

The International Solar Alliance (ISA) is a treaty based international inter-governmental alliance of 121 solar resource rich countries lying fully or partially between the Tropics of Cancer and Capricorn which was established in 2015. The vision and mission of the International Solar Alliance is to provide a dedicated platform for cooperation among solar resource rich countries where the global community, including bilateral and multilateral organizations, corporate, industry, and other stakeholders, can make a positive contribution to assist and help achieve the common goals of increasing the use of solar energy in meeting energy needs of prospective ISA member countries in a safe, convenient, affordable,

equitable and sustainable manner. The ISA is accelerating deployment of solar technology; mobilising funding; supporting SDG7 and making the sun shine brighter.

#### **1.14 Pandora papers :**

- There are at least 380 persons of Indian nationality in the Pandora Papers. The Pandora Papers investigation is the world's largest-ever journalistic collaboration, involving more than 600 journalists from 150 media outlets in 117 countries.
- The investigation is based on a leak of confidential records of 14 offshore service providers that give professional services to wealthy individuals and corporations seeking to incorporate shell companies, trusts, foundations and other entities in low- or no-tax jurisdictions.
- The entities enable owners to conceal their identities from the public and sometimes from regulators. Often, the providers help them open bank accounts in countries with light financial regulation.
- The Panama and Paradise Papers dealt largely with offshore entities set up by individuals and corporate respectively. The Pandora Papers investigation shows how businesses have created a new normal after countries have been forced to tighten the screws on such offshore entities with rising concerns of money laundering, terrorism funding, and tax evasion. The Indian Trusts Act, 1882, gives legal basis to the concept of trusts.
- While Indian laws do not see trusts as a legal person/ entity, they do recognise the trust as an obligation of the trustee to manage and use the assets settled in the trust for the benefit of 'beneficiaries'. India also recognises offshore trusts i.e., trusts set up in other tax jurisdictions.

#### **IMPACT THAT TAX HAVENS HAVE ON THE INDIAN ECONOMY**

- Though, traditionally, tax havens have been used for both Tax Avoidance and Tax Evasion, they have had a numerous number of negative repercussions upon the Indian economy. The foremost and probably the most fundamental effect that the usage of Tax Havens has on the Indian economy is that it prevents the various mobilization efforts as made by the government of India. Reduction of Tax liability by the usage of Tax Havens considerably decreases the tax base (as available to the taxation authorities) and this leads to a significant shortage of funds in the hands of the government. This shortage of funds, in turn, leads to the distortion of the government's plans regarding economic growth and development. In India, tax havens have been a significant barrier towards government expenditure and has had the negative impact of restricting/slowing down the growth rate.
- Reduction of Tax liability by the usage of Tax Havens also interferes with the Indian government's efforts to implement its economic policies. Though the economic policies have been structured by the government for the benefit of the people, Tax Havens have served as a significant barrier



towards the proper execution/implementation of the former. This, too, occurs due to a shortage of funds in the hands of the government.

- Tax evasion by the usage of Tax Havens to store “Black Money” also dismantles the equity attribute of any tax system. In India, specifically, reduction of their tax liability by many leads to an increase in the rates of taxes as charged by the government for every assessment year (for the purpose of increasing its revenue) and the burden of that unfortunately ends up falling upon the honest tax payers. As a consequence of this, even the tax payers who always pay their taxes honestly end up engaging in practices such as tax evasion in order to reduce an already incremental burden.

### **1.15 Election Commission Decides On Party Symbols:**

The Election Commission of India (ECI) has frozen the ‘Bungalow’ election symbol of the Lok Janshakti Party (LJP), so that neither of the two factions of the party will be able to use it in the coming Assembly by elections for the Kusheshwar Asthan and Tarapur seats in Bihar.

- This is not something new. Over the last few years, two other prominent cases of parties splitting, followed by a tussle over the election symbol, have been seen with regard to the Samajwadi Party (Cycle) and the AIADMK (Two leaves) in 2017.

#### **As per the guidelines, to get a symbol allotted:**

- A party/candidate has to provide a list of three symbols from the EC’s free symbols list at the time of filing nomination papers.
- Among them, one symbol is allotted to the party/candidate on a first-come-first-serve basis.
- When a recognised political party splits, the Election Commission takes the decision on assigning the symbol.

#### **Powers of Election Commission:**

- The Election Symbols (Reservation and Allotment) Order, 1968 empowers the EC to recognise political parties and allot symbols.
- Under Paragraph 15 of the Order, it can decide disputes among rival groups or sections of a recognised political party staking claim to its name and symbol.
- The EC is also the only authority to decide issues on a dispute or a merger. The Supreme Court upheld its validity in Sadiq Ali and another vs. ECI in 1971.

#### **As per the Election Symbols (Reservation and Allotment) (Amendment) Order, 2017, party symbols are either:**

- Reserved: Eight national parties and 64 state parties across the country have “reserved” symbols.
- Free: The Election Commission also has a pool of nearly 200 “free” symbols that are allotted to the thousands of unrecognised regional parties that pop up before elections.

- On the question of a split in a political party outside the legislature, Para 15 of the Symbols Order, 1968, states:
- “When the Commission is satisfied that there are rival sections or groups of a recognised political party each of whom claims to be that party the Commission may decide that one such rival section or group or none of such rival sections or groups is that recognised political party and the decision of the Commission shall be binding on all such rival sections or groups.”
- This applies to disputes in recognised national and state parties (like the LJP, in this case). For splits in registered but unrecognised parties, the EC usually advises the warring factions to resolve their differences internally or to approach the court.

### **1.16 The State Of The World’s Children 2021:**

Shri Mansukh Mandaviya, Union Minister for Health and Family Welfare released UNICEF’s global flagship publication – “The State of the World’s Children 2021; On My Mind: promoting, protecting and caring for children’s mental health”.

- The report details the significant impact of COVID-19 pandemic on children’s mental health.
- The report has found that around 14 percent of 15 to 24-year-olds in India, or 1 in 7, reported often feeling depressed or having little interest in doing things. Across 21 countries, the median was one in five young people.
- In the UNICEF survey across 21 countries, only 41 per cent of young people in India were willing to seek support for mental health problems, compared to an average of 83 per cent for 21 countries.
- As per the report, India was the only one of 21 countries where only a minority of young people felt that people experiencing mental health issues should reach out to others. In every other country, a majority of young people (ranging from 56 to 95 per cent) felt that reaching out was the best way to deal with mental health issues.
- Over 286 million children up to grade 6 were out of school in India between 2020-2021. UNICEF’s rapid assessment in 2021 found that only 60 per cent could access digital classrooms. Many would not be able to continue their education.
- Meanwhile, wide gaps persist between mental health needs and mental health funding. India has spent only 0.05 per cent of its health budget annually on mental health, according to Indian Journal of Psychiatry 2017.
- As the trend of nuclear family instead of joint family has increased in our society, mental health problems have become frequent in children.

**Causes and risk factors for mental illness in children**

- As is the case with most mental health disorders at any age, such disorders in children do not have one single definitive cause. Rather, people with these illnesses tend to have a number of biological, psychological, and environmental risk factors that contribute to their development.
- Biologically, mental illnesses tend to be associated with abnormal levels of neurotransmitters, like serotonin or dopamine in the brain, a decrease in the size of some areas of the brain, as well as increased activity in other areas of the brain. Physicians are more likely to diagnose girls with mood disorders like depression and anxiety compared to boys, while disorders like attention deficit hyperactivity disorder and autism spectrum disorders are more often assigned to boys. Gender differences in mental illness are the result of, among other things, a combination of biological differences based on gender, as well as the differences in how girls are encouraged to interpret their environment and respond to it compared to boys. There is thought to be at least a partially genetic contribution to the fact that children and adolescents with a mentally ill parent are up to four times more likely to develop such an illness themselves. Teens who develop a mental disorder are also more prone to having had other biological challenges, like low birth weight, trouble sleeping, and having a mother younger than 18 years old at the time of their birth.
- Psychological risk factors for mental illness in children include low self-esteem, poor body image, a tendency to be highly self-critical, and feeling helpless when dealing with negative events. Teen mental disorders are somewhat associated with the stress of body changes, including the fluctuating hormones of puberty, as well as teen ambivalence toward increased independence, and with changes in their relationships with parents, peers, and others. Teenagers who suffer from conduct disorder, attention deficit hyperactivity disorder (ADHD), clinical anxiety, or who have cognitive and learning problems, as well as trouble relating to others are at higher risk of also developing a mental disorder.
- Childhood mental illness may be a reaction to environmental stresses, including trauma like being the victim of verbal, physical, or sexual abuse, the death of a loved one, school problems, or being the victim of bullying or peer pressure. Gay teens are at higher risk for developing mental disorders like depression, thought to be because of the bullying by peers and potential rejection by family members. Children in military families are at risk for experiencing depression as well.

**1.17 Forest Conservation Act (FCA):**

The Union Government has proposed certain amendments to the existing Forest Conservation Act (FCA).

**Proposed changes:**

- Absolve agencies involved in national security projects and border infrastructure projects from obtaining prior forest clearance from the Centre.

- Such permission is necessary under the Forest Conservation Act (FCA).
- Exempt land acquired before 1980 — before the FCA came into effect — by public sector bodies such as the Railways.
- Facilitating private plantations for harvesting and exploration or extraction of oil and natural gas deep beneath forest land by drilling holes from outside the forest areas.
- Building in forests: To ease the grievances of the individuals whose land fall in state specific private forests act or within the purview of dictionary meaning of forest, the ministry has proposed to allow them the right to construct structures for bonafide purposes including forest protection measures and residential units up to an area of 250 sq mtr as one time relaxation.
- Punishments: Make offences under the modified Act punishable with simple imprisonment for a period which may extend to one year and make it cognisable and non-bailable.
- It also has provisions for penal compensation to make good for the damage already done.
- The FCA first came in 1980 and was amended in 1988.
- While States had already notified forest land, the FCA made it necessary to get the Centre's permission for using such forest land for "non forestry purposes" and the creation of an advisory committee to recommend such re-classification.
- The 1996 Supreme Court judgment (in TN Godavarman Thirumulpad versus Union of India and Others case) paved the way for the calculating:
  - The net present value, or the economic value of the portion of forest being razed for development work that had to be paid by project proponents.
  - The creation of a compensatory afforestation fund.
  - Providing non-forestry land in lieu of the diverted forest.
- Importance of forests to people and the 2030 Agenda for Sustainable Development :
  - Forests cover 30% of the Earth's land area, or nearly 4 billion hectares, and are essential to human well- being, sustainable development and the health of the planet . An estimated 1.6 billion people – 25% of the global population – depend on forests for subsistence, livelihood, employment and income generation.
  - Forests provide essential ecosystem services, such as timber, food, fuel, fodder, non-wood products and shelter, as well as soil and water conservation and clean air. Forests prevent land degradation and desertification and reduce the risk of floods, landslides and avalanches, droughts, dust and sand storms and other disasters. Forests are home to an estimated 80% of all terrestrial species. Forests contribute substantially to climate change mitigation and adaptation and in conserving biodiversity.
- When sustainably managed, all types of forests are healthy, productive, resilient and renewable ecosystems providing essential goods and services to people worldwide. In many regions, forests

also have important cultural and spiritual values. As set out in the UNFI, “Sustainable forest management, as a dynamic and evolving concept, aims to maintain and enhance the economic, social and environmental values of all types of forests for the benefit of present and future generations”.

- Sustainable management of forests and trees outside forests is vital to integrated implementation of the 2030 Agenda for Sustainable Development, including achieving the Sustainable Development Goals (SDGs), especially SDG15 (“Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss”).

### **1.18 Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP):**

Pharmaceuticals & Medical Devices Bureau of India (PMBI), the implementing agency of Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) has completed the target of opening of 8,300 Mantri Bhartiya Jan Aushadhi Kendras (PMBJKs) for the FY 2021-22 before end of September, 2021.

- All the districts of the country have been covered under Pradhan Mantri Bhartiya Jan Aushadhi Pariyojana (PMBJP).
- Government has set a target to increase the number of Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJKs) to 10,000 by March 2024. As on 5th October, 2021, the number of stores has increased to 8355.
- These Kendra’s will ensure easy access of affordable medicine to the people in every nook and corner of the country.
- Product basket of PMBJP presently comprises 1,451 drugs and 240 surgical instruments. Further, new medicines and nutraceutical products like glucometer, protein powder, malt-based food supplements, protein bar, immunity bar, etc. have been launched.
- “Janaushadhi Sugam” a mobile application for Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) facilitates the public by providing a digital platform at the tip of their fingers.
- Under the Scheme, medicines are procured from World Health Organization – Good Manufacturing Practices (WHO-GMP) certified suppliers for ensuring the quality of the products.
- Apart from this, each batch of drug is tested at laboratories accredited by ‘National Accreditation Board for Testing and Calibration Laboratories’ (NABL). Only after passing the quality tests, the medicines are dispatched to PMBJP Kendras.
- Medicines available under PMBJP are priced 50%-90% less than that of branded prices.

### **1.19 Palk Bay Scheme:**

The Union Government is considering increasing the unit cost of deep-sea fishing vessels under the Palk Bay scheme to make it more attractive to fisher folk.

**Palk Bay scheme:**

- Launched in July 2017 under the Blue Revolution programme.
- The scheme is financed by the Union and the State Governments with beneficiary participation.
- It had envisaged the provision of 2,000 vessels in three years to the fishermen of the State and motivate them to abandon bottom trawling.
- It was planned to have 500 boats built in the first year (2017-18). Of the unit cost of each vessel (Rs. 80 lakh), 50% would be borne by the Centre, 20% by the State government and 10% by the beneficiary, and the remaining 20% would be met through institutional financing.
- The Deep Sea fishing plan is to remove as many trawl vessels from the Palk Bay as possible.
- Potential beneficiaries of the deep sea fishing project should possess a registered, seaworthy trawl vessel of over 12m in length that must be scrapped or disposed of outside the Palk Bay.
- The disposed vessel should also have been physically verified.
- Equally important, new replacement tuna long liner boats cannot trawl or operate in the Palk Bay.
- Beneficiaries are not allowed to sell their boats within five years of obtaining them.
- Significance of the scheme:
  - The scheme was envisioned as the remedy to the Palk Bay fishing conflict.
  - The Centre feels that deep sea fishing is the “only solution” to promote ecologically sustainable fishing and reduce “fishing pressure” around the close proximity of the International Maritime Boundary Line (IMBL) and the incidents of cross-border fishing.

#### **IMPACTS OF DEEP-SEA FISHING:**

- A World Ocean Assessment by the United Nations concluded that the deep sea constitutes the largest source of species and ecosystem diversity on Earth. Bottom trawling, it said, has caused widespread, long-term destruction to these environments globally.
- At risk are fragile environments associated with seamounts, oceanic ridge systems and similar ‘underwater features’ where cold-water corals and deep-sea sponges provide a rich habitat for many other species. These environments are particularly vulnerable to deep-sea bottom trawling. They stand no chance against the ruthlessly effective “bulldozers” dragged by trawlers. After heavy trawling, coral ecosystems on seamounts are reduced mostly to bare rock and coral rubble.
- The threat to the deep sea’s biodiversity as a result of deep-sea bottom trawling and other methods of destructive deep-sea fishing is comparable to the loss of tropical rainforests on land. Many thousands of species may be at risk, most of which are still unknown to science and some of which may not exist beyond a very limited location.
- Deep-sea bottom trawling is an indiscriminate fishing method. Many species, some endangered, are caught incidentally and thrown back into the sea dead. Bottom trawling is known to have high discard rates compared to other fishing gears.

### **1.20 Sustainable Urban Plastic Waste Management In New Delhi: NITI Ayog**

NITI Aayog Vice Chairman Rajiv Kumar has launched the NITI Aayog – United Nations Development Programme (UNDP) Handbook on Sustainable Urban Plastic Waste Management in New Delhi.

- It provides a comprehensive overview of managing plastic waste by representing and discussing components of the entire plastic waste value chain.
- The Handbook can be adopted by urban local bodies to good effect.
- NITI Aayog CEO, Amitabh Kant reiterated the significance of the Re-use, Reduce and Recycle model and the need to create a mass movement around the use of plastics.
- Material Recovery Facility (MRF)
- NITI Aayog in this handbook has suggested urban local bodies across states adopt the material recovery facility (MRF) model & implement it as a public-private partnership model for sustainable management of urban plastic waste.
- A materials recovery facility, also known as a materials reclamation facility or recycling facility is a specialized plant that receives, separates, and prepares recyclable materials for marketing to end-user manufacturers.
- The model is initially funded by private players, supported by urban local bodies, and operated by service providers including local organizations and waste management agencies.
- This model ensures compliance with regulations and improves resource utilization.

### **1.21 PM Gati Shakti Scheme:**

The government of India has launched the ambitious Gati Shakti scheme or National Master Plan for multi-modal connectivity plan, with the aim of coordinated planning and execution of infrastructure projects to bring down logistics costs.

#### **About the Scheme**

- Aim: To ensure integrated planning and implementation of infrastructure projects in the next four years, with focus on expediting works on the ground, saving costs and creating jobs.
- The Gati Shakti scheme will subsume the Rs 110 lakh crore National Infrastructure Pipeline that was launched in 2019.
- Besides cutting logistics costs, the scheme is also aimed at increasing cargo handling capacity and reducing the turnaround time at ports to boost trade.
- It also aims to have 11 industrial corridors and two new defence corridors – one in Tamil Nadu and other in Uttar Pradesh. Extending 4G connectivity to all villages is another aim. Adding 17,000 kms to the gas pipeline network is being planned.

- It will help in fulfilling the ambitious targets set by the government for 2024-25, including expanding the length of the national highway network to 2 lakh kms, creation of more than 200 new airports, heliports and water aerodromes.
- Integrated Approach: It intends to bring together 16 infrastructure related Ministries.
- This will help in removing long-standing issues such as disjointed planning, lack of standardisation, problems with clearances, and timely creation and utilisation of infrastructure capacities.
- Gati Shakti Digital Platform: It involves the creation of a common umbrella platform through which infrastructure projects can be planned and implemented in an efficacious manner by way of coordination between various ministries/departments on a real-time basis.

**Importance of Infrastructure:**

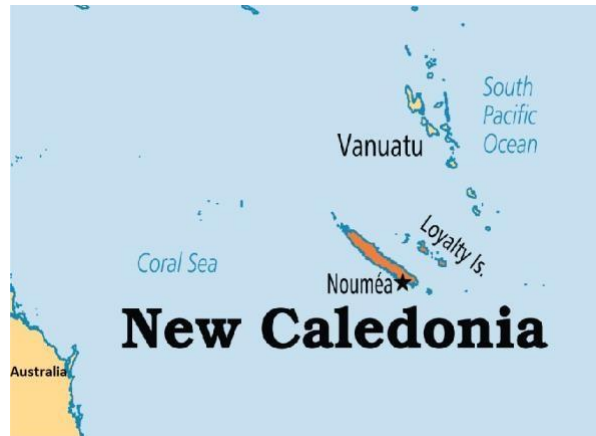
- Good quality infrastructure is important not only for faster economic growth but also to ensure inclusive growth. By inclusive growth we mean that benefits of growth are shared by the majority of the people of a country. Thus the inclusive growth will lead to the alleviation of poverty and reduction in income inequality in the country.
- The expansion in infrastructure facilities such as irrigation, rural electrification, roads and road transport will promote agricultural growth and setting up of agro-processing industries. These general infrastructure facilities will help farmers and owners of processing industries to get their requirements of raw materials, fertilizers and other inputs at cheap rate and also help them to bring their products to the markets which are located in big towns and cities.
- Lack of adequate infrastructure not only holds back economic development, it also causes additional costs in terms of time, effort and money of the people for accessing essential social services such as healthcare and education.



## 2. INTERNATIONAL RELATIONS

### 2.1 Referendum in New Caledonia

- The French territory of New Caledonia voted against independence from France in a referendum held recently.
- The referendum was a part of a decolonization plan agreed in 1998, known as the Noumea Accord.



#### Key Points

- **About:** New Caledonia is an archipelago and special collectivity of France located in the southwest Pacific Ocean.
- **Population:** The indigenous Kanaks represent around 39% of the population, while European settlers (known as Caldoches) make up about 27%.
  - Most of the remainder are from other Pacific islands, which are of mixed heritage, called Caledonians.
- **History:**
  - New Caledonia was discovered in 1774 by the British navigator James Cook. It was annexed by France in 1853.
  - In 1946, New Caledonia became an overseas territory.
  - By 1953, French citizenship had been granted to all New Caledonians, regardless of ethnicity.
- **Economy:** Besides having one of the region's highest average incomes per capita, New Caledonia is rich in resources and accounts for around 10% of the world's nickel reserve.
- **Political Status:** New Caledonia is a territory sui generis i.e. territory of its own kind.
  - It is a French overseas collectivity i.e. they are first-order administrative divisions of France but have a semi-autonomous status.

- It is one of the United Nations 17 Non-Self-Governing territories -where the process of decolonization has not been completed.
  - Non-Self-Governing Territories are defined as "territories whose people have not yet attained a full measure of self-government". It includes the Cayman Islands, British Virgin Islands, Bermuda, Western Sahara, etc.
- They vote in French elections and have French nationality.
- New Caledonia has a power-sharing executive elected by the territory's Congress, which ensures that all parties on it are represented in proportion to their number of seats in Congress.
- It depends on France for matters like defence and education.
- Conflict over Independence: The country has had conflicts over the issue of autonomy and independence from France for a long time.
  - New Caledonia has deep divisions between its indigenous Kanak population and Europeans, with indigenous Kanaks favouring independence and Europeans being against it.
  - In the 1980s, the country had violent conflicts between the opponents and supporters of independence which culminated into Matignon Accords in 1988.

The Accords specified a 10-year transitory status, after which a self-determination referendum would be held.
  - The Noumea Accord, which was concluded in 1998, provided for a practically sovereign status. Under this agreement, New Caledonia is allowed up to three referendums on independence, the latest one being the last of them.
- **Significance:**
  - At a time where Chinese influence on the island, and in the whole South Pacific region is growing, it is very significant for France to be able to retain control over the island.

A significant portion of New Caledonia's exports goes to China, much of which is nickel.
  - Though India has no official position of the referendum, the results of this referendum are particularly important for India in the double context of growing India-France relations and Indo-China conflicts. France is urging Australia and India to form a new "strategic axis" in the Indo-Pacific with it and New Caledonia to counter China's rise.

## 2.2 **CICA 6th Foreign Ministers Meeting**

Recently, the External Affairs Minister addressed the 6th Ministerial (2021) meeting of the Conference on Interaction and Confidence-Building Measures (CICA) in Nur-Sultan, Kazakhstan.

- Last year, Kazakhstan assumed the chairmanship of CICA.
- The 5th Meeting of the Ministers of Foreign Affairs of the CICA was held in Beijing in the year 2016.

## **Main Points**

### • **On Vaccine Maitri:**

- India's internationalism (Vasudhaiva Kutumbakam) drives its Vaccine Maitri.
- In January 2021, India launched the Vaccine Maitri (Vaccine Friendship) initiative
  - A major diplomatic effort to gift and supply made-in-India vaccines to low- income and developing countries globally.

### • **On Cross Border Terrorism:**

Advised the forum to strengthen collective resolve to tackle terrorism, arms trafficking, narcotics trade, and other forms of trans-national crimes

### **On Multilateralism:**

- Asia especially, but also Africa and Latin America, are inadequately represented in United Nations' (UN) decision-making.
- The limitations of the multilateral response to the Covid pandemic were starkly evident. This only makes a case for reformed multilateralism more urgent with each passing day.

### • **On Afghanistan:**

- India underscored the importance of the Taliban regime meeting the expectations of the international community as elaborated in the UN Security Council Resolution 2593.
  - The UNSC resolution 2593 unequivocally demands that Afghan territory not be used for sheltering, training, planning or financing terrorist acts; and specifically refers to terrorist individuals proscribed by the UN Security Council, including Lashkar-e-Taiba and Jaish-e-Mohammad.

### • **On Connectivity:**

- Connectivity must respect the most basic principle of international relations- respect for sovereignty and territorial integrity.
- An apparent reference to India's objection to China's ambitious infrastructure development plans in Pakistan under the China-Pakistan Economic Corridor (CPEC).
  - CPEC, which connects Gwadar Port in Balochistan with China's Xinjiang province, is the flagship project of Chinese President Xi Jinping's ambitious Belt and Road Initiative (BRI).
  - India has protested to China over the CPEC as it is being laid through PoK.

## **About CICA**

- The CICA is an intergovernmental forum aimed at strengthening regional cooperation and ensuring peace, security, and stability in Asia.
- The idea of creating the organization was first voiced by Kazakhstan's First

- President Nursultan Nazarbayev in 1992 at the 47th session of the United Nations General Assembly, while the first CICA summit was held in June of 2002.
- The highest decision making organ of CICA is the Meeting of the CICA Heads of State and Government (Summit). The CICA Summit is convened every four years in order to conduct consultations, review the progress of, and set priorities for CICA activities.
  - The Meeting of the Ministers of Foreign Affairs is required to be held every two years.
- CICA members include 27 Asian countries, including Azerbaijan, Bahrain, China, Egypt, India, Iran, Israel, Russia, South Korea, and Turkey, nine observer states, and five international organizations.
- India co-chairs two CICA CBMs (Confidence Building Measures) on ‘Development of Secure and Effective Systems of Transportation Corridors,’ and ‘Energy Security’.
- The CICA Secretariat has been located in Almaty (Kazakhstan) since June 2006.



### 2.3 Extension of CPEC to Afghanistan

Recently, Pakistan has discussed Taliban-led Afghanistan joining the multibillion-dollar China-Pakistan Economic Corridor (CPEC) infrastructure project.

- China has proposed construction of the Peshawar-Kabul motorway as an extension of CPEC in Afghanistan.
- Taliban takeover of Afghanistan and China emerging as a major challenge in the form of the extension of its ambitious CPEC has raised India's concerns on economic, political and security fronts.

#### **Main Points**

- **China-Pakistan Economic Corridor:**
  - The CPEC is a bilateral project between Pakistan and China.
  - It is intended to promote connectivity across Pakistan with a network of highways, railways, and pipelines accompanied by energy, industrial and other infrastructure development projects.
  - It aims to link the Western part of China (Xinjiang province) to the Gwadar Port in Baluchistan, Pakistan via Khunjerab Pass in the Northern Parts of Pakistan.
    - It will pave the way for China to access the Middle East and Africa from Gwadar Port, enabling China to access the Indian Ocean.
  - CPEC is a part of the Belt and Road Initiative. The BRI, launched in 2013, aims to link Southeast Asia, Central Asia, the Gulf region, Africa and Europe with a network of land and sea routes.
  - India has been severely critical of the CPEC, as it passes through Pakistan-occupied Kashmir, which is a disputed territory between India and Pakistan.



- **Implications of Afghanistan Joining CPEC on India:**
  - Filling the Void: In Afghanistan, China is trying to fill the vacuum created after the US forces left Afghanistan economically and gets its Belt and Road Initiatives (BRI) going.
  - Undermining Chabahar Port: The foremost concern with Afghanistan joining CPEC is that India is apprehensive of its investment in Chabahar port in Iran.
    - India is wary of undermining the India–Iran–Afghanistan trilateral that gives Afghanistan access to sea via Chabahar port.
  - Weakening of India’s Economic Influence: Attempts to extend CPEC to Afghanistan may undermine India’s position as economic, security and strategic partner of Afghanistan.
    - India has been the biggest regional donor to Afghanistan committing more than US\$2 billion for the developmental work that includes construction of roads, power plants, dams, parliament building, rural development, education, infrastructure and much more.
    - With Extension of CPEC, China will play a leading role in Afghanistan Overpowering India’s economic influence in Afghanistan.
- **Terrorism and Strategic Concerns:** Given India’s limited strategic depth in Afghanistan, China is in better position to leverage its strategic advantages in Afghanistan.
  - Further, Afghanistan’s inclusion in the CPEC will definitely help in the economic development, but it will also help Pakistan gain the strategic advantage and upper hand in Afghanistan at the cost of India.
  - In this situation, Pakistan may augment use of terrorism against India.
- **Control of Strategic Air Base:** Besides its issues with the CPEC, India will be Wary of the likelihood that China may try to take over the Bagram air force base in Afghanistan.
 

The Bagram airport is the biggest airport and technically well-equipped as the Americans kept it for their use till the end, instead of the Kabul airport.
- **Exploitation of Rare Earth Minerals:** With the extension of CPEC, China is also looking to exploit Afghanistan's rich minerals and highly lucrative rare-earth mines.
 

Rare-earth metals, which are key components for a host of advanced electronic technologies and hi-tech missile guidance systems.

### Way Forward

- For the success of CPEC in Afghanistan and to a large extent in Pakistan’s troublesome territories, it becomes imperative for China to stabilize the security situation in the region.
- Improved infrastructure and security situation in Afghanistan may help India to conduct its economic and trade activities in a smoother way.
- However, given the hostility of China, Pakistan and Taliban against India, Afghanistan joining CPEC will certainly be a strategic advantage for China and a loss for India.

## 2.4 **IEA Invites India to be a Full-Time Member**

Recently, the International Energy Agency (IEA) has invited India, the world's third-largest energy consumer, to become its full-time member.

### **Main Points**

- **Background:**
  - India became an Associate member of IEA in March 2017 but it was in engagement with IEA long before its association with the organization.
  - Earlier in 2021, India also inked a Strategic Partnership Agreement with the IEA to strengthen cooperation in global energy security, stability and sustainability.
  - As a natural corollary to the India IEA strategic partnership, IEA invited India to deepen its cooperation with IEA by becoming a full Member.
- Reason for Offering Membership to India:
  - India is becoming increasingly influential in global energy trends. Its in-depth report on India's energy policies, which was released in January 2020, states that the country's demand for energy is set to grow rapidly in the coming decades with electricity use set to increase particularly fast.
  - The country's reliance on fuel imports makes further improving energy security a key priority for the Indian economy.
- IEA's Membership:
  - The IEA is made up of 30 member countries.
  - It also includes eight association countries. Four countries are seeking accession to full membership, Chile, Colombia, Israel and Lithuania.
  - A candidate country to the IEA must be a member country of the Organisation for Economic Co-operation and Development (OECD).
- Eligibility Criteria: A candidate country to the IEA must have:
  - Crude oil and/or product reserves (Strategic Oil Reserves) equivalent to 90 days of the previous year's net imports, to which the government has immediate access (even if it does not own them directly) and could be used to address disruptions to global oil supply.  
India's current strategic oil reserves equal 9.5 days of its requirement.
  - A demand restraint programme to reduce national oil consumption by up to 10%. Legislation and organisation to operate the Coordinated Emergency Response Measures (CERM) on a national basis.
  - Legislation and measures to ensure that all oil companies under its jurisdiction report information upon request.
  - Measures in place to ensure the capability of contributing its share of an IEA collective action.

- An IEA collective action would be initiated in response to a significant global oil supply disruption.

### **International Energy Agency**

- **About:**

It is an autonomous Intergovernmental Organisation established in 1974 in Paris, France. It mainly focuses on its energy policies which include economic development, energy security and environmental protection. These policies are also known as the 3 E's of IEA.

IEA Clean Coal Centre is dedicated to providing independent information and analysis on how coal can become a cleaner source of energy, compatible with the UN Sustainable Development Goals.

- **Need:**

Established in the wake of the oil crisis of 1973-1974, to help its members respond to major disruptions in oil supply.

- **Mandate:**

Over time, the mandate of the IEA has expanded to include tracking and analyzing key global energy trends, promoting sound energy policy and encouraging multinational energy technology cooperation.

- **Mission:**

- Ensure reliable, affordable and clean energy for its member countries and beyond focus areas.
- Energy Security: Promoting diversity, efficiency and flexibility within all energy sectors.
- Economic Development: Ensuring the stable supply of energy to IEA
- Member countries and promoting free markets to foster economic growth and eliminate energy poverty.
- Environmental Awareness: Enhancing international knowledge of options for tackling climate change.
- Engagement Worldwide: Working closely with non-member countries, especially major producers and consumers, to find solutions to shared energy and environmental concerns.

## **2.5 Review of IMF Role**

Recently, in the backdrop of the 2021 annual meetings of the World Bank Group and the International Monetary Fund (IMF), leading experts have suggested the need to review the role of the IMF.

- With a continuing trend of emerging markets increasing their share in global output or GDP, there is a need for review of the quota system.
- Apart from this, there is a need for maintaining data integrity amid the World Bank discontinuing its Ease of Doing Business reports.



- The IMF was set up along with the World Bank after the Second World War to assist in the reconstruction of war-ravaged countries. The two organizations were agreed to be set up at a conference in Bretton Woods in the US. Hence, they are known as the Bretton Woods twins.

### **Key Points**

#### **Need for IMF Reforms: Quota Reforms:**





- The IMF's quota system was created to raise funds for loans.
- Each IMF member country is assigned a quota, or contribution, that reflects the country's relative size in the global economy. Each member's quota also determines its relative voting power as well as its borrowing capacity.
  - This makes wealthy countries have more say in the making and revision of rules.
  - This leads to the problem where countries that grow economically have tended to become under-represented as their voting power lags behind. For example: BRICS countries.
- Quotas are denominated in Special Drawing Rights (SDRs), the IMF's unit of account.
  - SDR is a potential claim on the freely usable currencies of IMF members.
  - SDRs can be exchanged for these currencies.
- The IMF's Board of Governors conducts general reviews of quotas at regular intervals (no more than five years apart).

#### **Earlier Quota Reforms**

- In 2010, the IMF's Quota and Governance Reforms were drafted; which finally became effective in 2016.
- These reforms shifted more than 6% of the quota shares to emerging and developing countries from the US and European countries.
- Under this, India's voting rights increased by 0.3% from the 2.3% to 2.6% and China's voting rights increased by 2.2% from the 3.8% to 6%.

Presently, India holds 2.75% of SD R quota and 2.63% of votes in the IMF.

## Multiple roles of quotas

Resource Contributions	Voting Power	Access to Financing	SDR Allocations
Quotas determine the maximum amount of financial resources a member is obliged to provide to the IMF.	Quotas are a key determinant of the voting power in IMF decisions. Votes comprise one vote per SDR100,000 of quota plus basic votes (same for all members).	Quotas determine the maximum amount of financing a member can obtain from the IMF under normal access.	Quotas determine a member's share in a general allocation of SDRs.
			

**Restructuring of the Article IV Consultations: Under Article IV consultations, the IMF holds bilateral discussions with its members usually every year and its staff prepares a report.**

- Article IV consultation is the most powerful instrument and it needs to be restructured and sharpened to make it more useful by using the new technologies and access to public data.

### Proposed Reforms

- Reforming Quota System: The quota reform would reflect the changed economic realities, especially with regard to the increasing capabilities of the developing nations.
  - For example, the quota of BRICS countries should increase and that of European Union Countries should decrease.
  - Also, it is important that the new quota formula gives more weight to PPP GDP to better reflect the true economic strength of emerging markets and developing economies.

### Purchasing Power Parity

- PPP is a popular metric used by macroeconomic analysis that compares different countries' currencies through a "basket of goods" approach.
- PPP allows for economists to compare economic productivity and standards of living between countries.
- Some countries adjust their Gross Domestic Product (GDP) figures to reflect PPP.
- Helping Lower Income Countries: The IMF should focus on lower income countries and support other developing countries' market funds raising activities, as its Article IV consultation reports are utilised by credit rating agencies, impacting the fund raising capacity of countries like India.

Most of the Asian countries including India can now raise funds on their own on the basis of strength of their forex reserves, and do not have to necessarily go to the IMF like in the past to tide over the crisis.

- **Management Reforms:** The management system in the IMF should be modified.
  - In the IMF and World Bank group, there is an informal arrangement, that the head of the IMF should be a European and the head of the World Bank should be an American.
  - The time has come to reconsider this, and the IMF probably should really rethink it.

## 2.6 Nobel Peace Prize 2021

- Recently, the 2021 Nobel Peace Prize was awarded to journalists Maria Ressa of the Philippines and Dmitry Muratov of Russia for their efforts to safeguard freedom of expression, which is a precondition for democracy and lasting peace.
  - In 2020, the award was given to the World Food Programme (WFP), a United Nations (UN) agency.
  - Other 2021 Nobel Prizes for Literature, Chemistry, Physics and Medicine have already been announced.

### Main Points

- **Maria Ressa:**
  - She is an investigative journalist; in 2012 she co-founded Rappler, a digital media platform for investigative journalism, which she continues to head.
  - Rappler has focused critical attention on President Rodrigo Duterte's regime's controversial, murderous anti-drug campaign.
  - In the 2021 World Press Freedom Index, the Philippines ranked 138 of 180 nations (India was ranked lower, at 142).
  - She has also authored *Seeds of Terror: An Eyewitness Account of Al-Qaeda's Newest Center*, and *From Bin Laden to Facebook: 10 Days of Abduction, 10 Years of Terrorism*.
- **Dmitry Muratov:**
  - Muratov has for decades defended freedom of speech in Russia under increasingly challenging conditions".
  - Russia has ranked 150 in the 2021 World Freedom Index.
  - He along with around 50 colleagues started *Novaya Gazeta* (Newspaper) in 1993, as one of its founders. He has served as the newspaper's editor-in-chief since 1995.
  - Committee to Protect Journalists, a US-based non-profit organization, had felicitated Muratov as one of its International Press Freedom awardees in 2007.
  - Six of Muratov's colleagues have been killed since the newspaper started, which has often faced harassment, threats, violence and murder from its opponents.

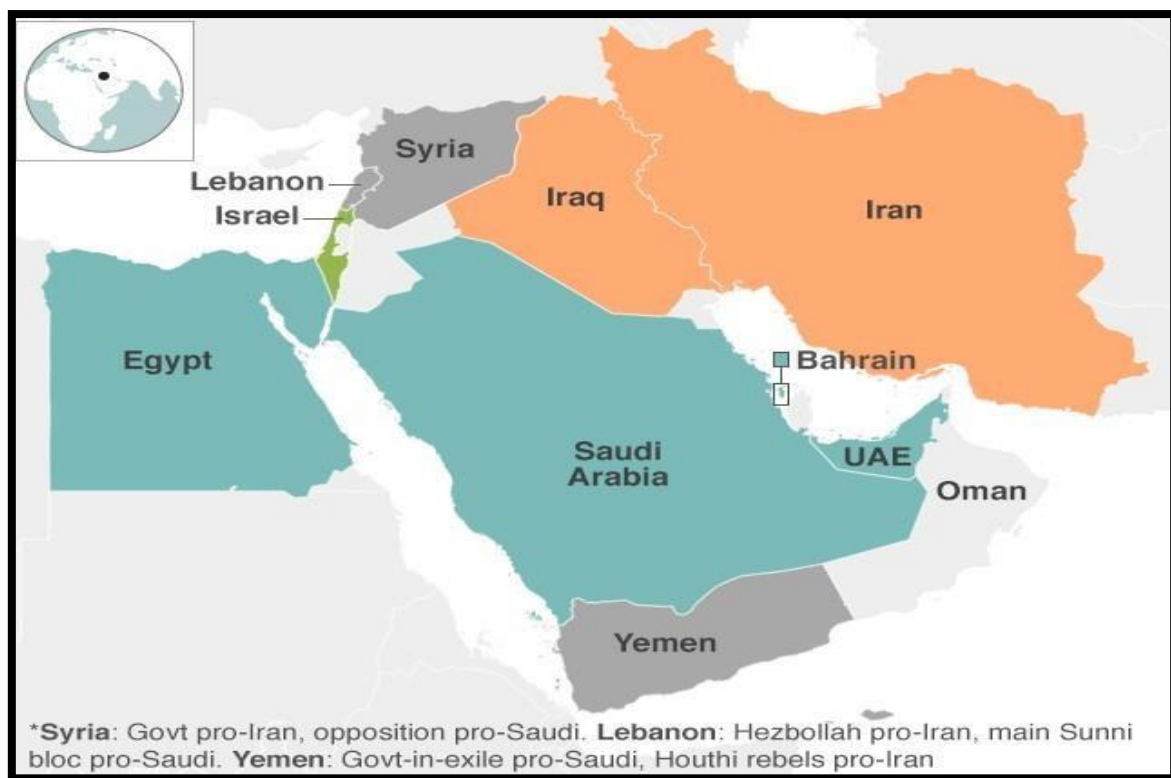
- Despite the killings and threats, editor-in-chief Muratov has refused to abandon the newspaper's independent policy.

### Significance:

- Free, independent and fact-based journalism serves to protect against abuse of power, lies and war propaganda.
- Without freedom of expression and freedom of the press, it will be difficult to successfully promote fraternity between nations, disarmament and a better world order to succeed in our time.

### 2.7 Normalizing Saudi-Iran Relations

- Recently, four meetings took place between representatives of Iran and Saudi Arabia in Baghdad and one in New York. These meetings indicate continuity in the warming of bilateral relations that had been frozen since 2016.
- The renewed bilateral ties and normalization of relations between Saudi Arabia and Iran will pave the way for regional stability and diplomatic ease for India as well.



### Main Points

#### Background (Saudi Arabia-Iran Conflict):

- Religious Factionalism: The decades-old feud between them is exacerbated by religious differences.
  - They each follow one of the two main branches of Islam. Iran is largely

- Shia Muslim, while Saudi Arabia sees itself as the leading Sunni Muslim power. Historically, Saudi Arabia, a monarchy and home to the birthplace of Islam, saw itself as the leader of the Muslim world.
- However this was challenged in 1979 by the Islamic revolution in Iran which created a new type of state in the region - a kind of revolutionary theocracy - that had an explicit goal of exporting this model beyond its own borders.
- **Regional Cold War:** Saudi Arabia and Iran - two powerful neighbors – are locked in a fierce struggle for regional dominance.
  - Uprisings across the Arab world (after the Arab Spring in 2011) caused political instability throughout the region.
  - Iran and Saudi Arabia exploited these upheavals to expand their influence, notably in Syria, Bahrain and Yemen further heightening mutual suspicions.
  - Moreover, external powers like the US and Israel have a major role in exacerbating conflict between Saudi Arabia and Iran.
- **Proxy Wars:** Iran and Saudi Arabia are not directly fighting but they are engaged in a variety of proxy wars (conflicts where they support rival sides and militias) around the region.

For Example, Houthi rebels in Yemen. These groups can acquire greater capabilities which can cause further instability in the region. Saudi Arabia accuses Iran of supporting them.
- **2016 Flash Point:** Many Iranian protesters attacked Saudi diplomatic missions in Iran following Saudi Arabia's execution of the Shiite Muslim cleric Sheikh Nimr al-Nimr.
- **Reasons for Normalization of Relations:**
  - Saudi Arabia Vision 2030 Strategy: This refers to targeted reforms within the country's economy, defense, tourism and renewable energy.
  - In the context of Covid-19, Saudi Arabia has realized that to attract serious investment, it can only achieve it through de-escalation with Iran.
  - Compromise on Regional Front: Saudi Arabia is also involved in the process of establishing Syria's power holder Bashar Assad in the Arab League (a regional organization) - a move that has been welcomed by Iran.
  - Withdrawal of US from the Region: The arrival of the new US president (Joe Biden) administration and withdrawal of US from Afghanistan and now
  - Focusing more on the Indo-pacific region could be another reason for softening of Saudi Arabia's stance on Iran.

- **Possible Impact of Normalization of Relations:**

- Resolution of Israel-Palestine Conflict: Warming of relations between Iran and Saudi Arabia may have a positive impact in dealing with Israel and the Palestinian issue.
- Stabilization of Oil Market: Iran and Saudi Arabia share a common interest for stable oil prices given the importance of the market to their economies.
  - Normalization of relations would ensure steady oil revenues for all producing countries and more predictability to economic planners in both Saudi Arabia and Iran.

**Way Forward**

- Role of India: Historically, India has good diplomatic relations with both the countries. Stabilization of relations between the two countries may impact India in a mixed way.
  - On the negative side, higher oil prices will affect the balance of trade in India.
  - On the positive side, this could provide easing of investments, connectivity projects across the region.
- Reciprocity by Iran: Iran still needs to make a mark in its diplomatic efforts by publicly supporting a cease-fire in Yemen.
- Easing of US Sanctions: Clarity on US sanctions over Iran is of prime importance, if Iran-Saudi Arabia relations are to get normalised.

**2.8 PM Speech at United Nations General Assembly**

- Recently, the Prime Minister of India (PM) addressed the 76th United Nations General Assembly (UNGA).
  - The UNGA's theme for this year "Building Resilience" through hope to recover from Covid-19, rebuilds sustainably, responds to the needs of the planet, respects the rights of people, and revitalize the United Nations".
  - The PM spoke about a range of topics from the Covid-19 pandemic, threat of terrorism, India's actions to combat climate change and the need to protect the freedom of navigation in the oceans.

**United Nations General Assembly**

- The General Assembly is the main deliberative, policymaking and representative organ of the UN.
- All 193 Member States of the UN are represented in the General Assembly, making it the only UN body with universal representation.
- Each year, in September, the full UN membership meets in the General Assembly Hall in New York for the annual General Assembly session, and general debate, which many heads of state attend and address.

- Decisions on important questions, such as those on peace and security, admission of new members and budgetary matters, require a two-thirds majority of the General Assembly. Decisions on other questions are by simple majority.
- The President of the General Assembly is elected each year by assembly to serve a one-year term of office.
  - Recently, the Maldives' Foreign Minister Abdulla Shahid was elected the President of the 76th session of the UNGA for 2021-22
  - The UNGA has also appointed Antonio Guterres as the ninth UN Secretary General (UNSG) for a second term beginning 1st January, 2022 and ending on 31st December, 2026.

### Main Points

- **Threat of Terrorism:** The world is facing an increased threat of regressive thinking and extremism and many countries are using “terrorism as a political tool”.
  - He also emphasized to abide by UNSC Resolution 2593.
  - The resolution demands that Afghan territory must never again be used to threaten or attack any country or to shelter or train terrorists.
- **Importance of India:** Today every sixth person in the world is an Indian. Thus, when Indians progress, it accelerates the development of the world.
  - He regarded India as ‘Mother of Democracy’ and through democracy many socio- economic problems can be resolved.
- **Developmental Model of India:** Citing the Deen Dayal Upadhaya’s Integral Humanism, India’s developmental model envisages an all-inclusive, all-pervasive, and universal approach. For example:
  - PM Jan Aarogya Yojana has provided the facility of free treatment in hospitals to over 500 million people and has given them access to quality health services.
  - Under PM Awas Yojana, nearly 30 million proper homes are being built for many homeless families.
  - Jal Jeevan Mission envisages ensuring that piped clean water reaches over 170 million homes.
- **Tackling Covid-19:** India has developed the world’s first DNA vaccine. This can be administered to anyone above the age of 12.
  - An mRNA vaccine is in the final stages of development.
  - Indian scientists are also developing a nasal vaccine against Covid-19.
- **Balancing Economy and Ecology:** India is progressing towards the goal of 450 giga watts of renewable energy.

Also, India is set to be the world’s biggest green hydrogen hub.

- Ensuring Freedom of Navigation: Highlighting China's expansionism in the Indo-Pacific, PM held that oceans are the lifeline of international trade and must be protected from the race of expansion and exclusion.

In this context, the broad consensus reached in the Security Council during India's presidency shows to the world the way forward for maritime security.

## 2.9 Rail Link between Nepal and India

- The first stretch of rail link between Nepal and India is ready to resume on the neighbouring country's first-ever broad gauge passenger service (Jainagar-Bijalpura-Bardibas railway project).

### Key Points



### Background:

- The rail link between Nepal and India has been popular since the early 20th century.
- In 1937, the British had built a narrow gauge line to ferry cargo, mainly logs, from Nepal to India.
- However, over time it became a popular passenger service before it was stopped in 2014 for conversion to broad gauge.

### Revamped Project:

- **First Stretch:** A 34-km line between Bihar's Jainagar and Nepal's Kurtha, with the Hindu pilgrimage city of Janakpur Dham (in Nepal) in between.
- **Second Stretch:** A 17 kms of railway line from Kurtha to Bijalpura is also getting the finishing touches.

For the remaining portion up to Bardibas, land is being handed over to IRCON International Limited. (a Government of India Undertaking)..

- **Cost of Project:** The construction cost of Rs 784 crore for the entire stretch is being borne by India in the form of a grant to Nepal.



- **Managing Body:** The Konkan Railway Corporation Limited has got the contract for operations and maintenance of the line and will train and develop manpower provided by Nepal, as per the bilateral understanding.
- **Electric Rail Track:**  
MoUs have been signed between both the governments for laying an electric rail track linking Kathmandu with Raxaul (Bihar) in India.
- **Freight Train Services:**  
India and Nepal have signed a Letter of Exchange (LoE) to the India-Nepal Rail Services Agreement (RSA) 2004.  
It will allow all authorized cargo train operators to utilize the Indian railway net work to carry Nepal's container and other freight - both bilateral between Indian and Nepal or third country from Indian ports to Nepal.
- **Significance:**  
The line is being seen as a small link to a larger plan of deepening India's ties with Nepal through the Railways, bypassing the influence of other neighbouring countries in this strategically vital region.

#### **Other Connectivity Project**

- **Inland Waterways:** India is looking to develop the inland waterways for the movement of cargo, within the framework of trade and transit arrangements, providing additional access to sea for Nepal calling it linking Sagarmatha (Mt. Everest) with Sagar (Indian Ocean).
- **Petroleum Pipeline:** In 2019, India and Nepal had jointly inaugurated a cross-border petroleum products pipeline.
  - Pipeline carries petroleum products from Motihari (Bihar) in India to Amlekhgunj in Nepal.
  - This is South Asia's first cross-border petroleum products pipeline.

#### **2.10 Tax Inspectors without Borders Programme**

- Recently, the United Nations Development Programme (UNDP) and the Organization for Economic Cooperation and Development (OECD), have launched the Tax Inspectors Without Borders (TIWB) Programme in Seychelles.
- India has been chosen as the Partner Administration and has provided Tax Expert for this programme.

#### **Main Points**

##### **About:**

- It is expected to be of 12 months duration where India aims to aid Seychelles in strengthening its tax administration by transferring technical know-how and skills to its tax auditors through sharing of best audit practices.

- It focuses on Transfer Pricing cases of tourism and financial services sectors. Transfer Price, also known as transfer cost, is the price at which related parties transact with each other, such as during the trade of supplies or labor between departments. Multinational companies can manipulate transfer prices in order to shift profits to low tax regions.
- It is the sixth TIWB programme which India has supported by providing Tax Expert.
- Fifth TIWB programme with India was launched in Bhutan in June 2021.
- **Tax Inspectors without Borders Programme:** TIWB is a capacity-building programme.
  - It is a joint OECD/UNDP initiative launched in July 2015 to strengthen developing countries' auditing capacity and multinationals' compliance worldwide. It deploys Qualified experts in developing countries across Africa, Asia, Eastern Europe, Latin America and the Caribbean help build tax capacity in the areas of audit, criminal tax investigations and the effective use of automatically exchanged information.
  - TIWB assistance has led to increased domestic resource mobilisation in some of the least developed countries in the world.

### 3. INDIAN ECONOMY

#### 3.1 **OPEC's Caution on Boosting Supply**

##### **What is the issue?**

The rise of prices of natural gas, coal and electricity are putting extra pressure on oil markets and boosting the demand as industries and power generators are seeking to switch to liquid fuels.

##### **How are oil prices decided?**

- Supply and demand - The concept of supply and demand is the mechanism by which the prices of crude oil are controlled.
- OPEC as producers have no influence over the demand for petroleum but they tend to change its supply in order to influence the price.
- In order to keep prices of the oil stable, OPEC countries usually maintain a quota of oil supply.
- Speculations - Another mechanism of pricing is the future supply based on some speculations.
- These are the supply and demand based on speculations of suppliers and consumers.

##### **What are the reasons for the current oil demand?**

- Fuel switching from gas and coal to oil and crude is the reason for increased demand.
- Soaring natural gas prices have spiked the price by 300%
- Agencies like IEA's forecast on oil demand contribute for the reluctance of OPEC to open the taps.

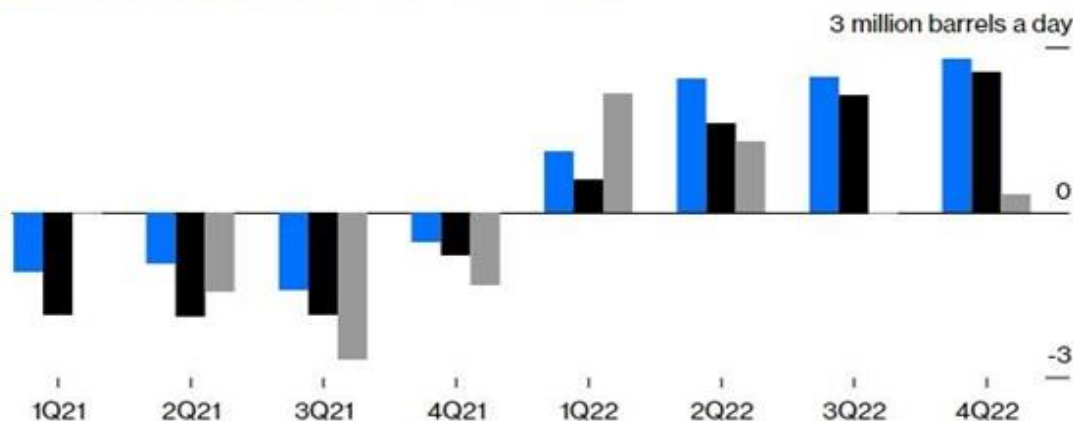
##### **What will be the future prospects of oil demand?**

- Top exporter Saudi Arabia has started cutting its official selling price to its core customers to ease the price of Brent crude oil futures.
- On the demand side, China's industrial slowdown, collapse of real estate giant Evergrande, rising inflation pressure and Covid-19 disruptions could undermine oil demand growth over the next 12 months.
- But in the near term, a repeat of a cold winter across the Northern Hemisphere could cause major energy supply shortages in many leading industrial hubs.

### Over-supply in 2022

Fearing weakness ahead, OPEC remains cautious about raising production

■ Global oil stockpile changes - IEA ■ EIA ■ OPEC



Sources: IEA, EIA and OPEC

Note: Assumes OPEC+ producers continue to increase output by 400,000 barrels a day each month until September 2022

### OPEC (Organization of Petroleum Exporting Countries)

- OPEC is a permanent, intergovernmental organization created at the Baghdad Conference on September 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela.
- Aim - To coordinate and unify the petroleum policies of member countries and ensure the stabilization of oil market.
- At present, it has 13 members with its headquarters at Vienna
- OPEC countries produce about two-fifths of the world's crude oil.
- They possess more than 80% of the world's total crude oil reserves.
- OPEC+ - It is a loosely affiliated entity consisting of the 13 OPEC members and 10 of the world's major non-OPEC oil-exporting nations.
- It includes Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan in addition to OPEC members
- Since 2016, they cooperate in fixing the global crude oil prices

### 3.2 Nobel Prize 2021 for Economics - Public Policy Relevance

#### What is the issue?

- David Card, Joshua Angrist and Guido Imbens were the 2021 Nobel Prize winners in Economics for their contribution in the field of labour economics.
- Here is how their work, based on cause-and-effect related issues, is particularly relevant in public policy.

**What is the normal practice?**

- Randomised experiments are carried out to find out the cause and effect of any economic phenomenon.
- Question is posed to the participants without telling them the purpose.
- But this has the problem of selection bias and tends to be narrow.
- E.g. the impact of the pandemic on schooling and children is hard to be analysed through random trials.
- To overcome this shortcoming, Card, Angrist and Imbens used the observational data approach for answering questions of causation.

**What is the observational data approach?**

- This approach is within the realm of natural experiments which cannot be influenced by the analyst.
- In other words, it involves observing people's behaviour in the environment in which it typically occurs.
- It makes observations as unobtrusively as possible so that participants are not even aware that they are being studied.
- The 2019 prize too had gone to Abhijit Banerjee, Esther Duflo and Michael Kremer for their work based on the 'experimental approach'.
- Evidently, both sets of theories have their place in economics and add value.

**Applications**

- To study the results of any action taken by, say, the government on the stakeholders concerned over a period.
- To answer simple questions on, say, a course which must be offered to students in an university.
- For companies, to fine tune their marketing plans.

**What are the key questions in labour economics answered by their work?****Do more years of education lead to higher future income?**

- Their experiments showed that students who studied more earned higher income.
- [Notably, this study cannot be done with a fixed set of respondents.
- Understanding the socio-economic conditions and observing the target populations over a time period is important, which the observational data approach helped.]

**Does an increase in minimum wage lead to lower employment?**

- This is a critical question for the labour market to find a balance.
- The labour wants a higher wage. But companies like to be selective in paying higher wage to the more efficient.
- David Card's analysis shows that employment does not suffer with an increase in minimum wage.

- Because, when minimum wage increases labour tends to become more efficient which helps the organisation to increase output.
- So, labour costs do not get burdensome.

#### **Do immigrants create problems to the local labour force?**

- This was one of the key issues in the US that came up especially under the Trump regime.
- It was alleged that immigrants tend to take over the jobs of the local population.
- David Card's analysis shows this does not necessarily happen, and it depends on the level of work.

#### **What are the challenges?**

- The larger question is whether corporates can wait for long to get these results before launching a product.
- Often the product is differentiated and cannot be compared with stories of other companies.
- So, such natural experiments tend to work better for government-driven programmes where experiences from the past provide signals for the future.
- In other words, from the public policy point of view, these theories are very relevant and more likely to be pursued.

### **3.3 Gati Shakti National Master Plan**

#### **Why in news?**

Prime Minister Narendra Modi has launched the ambitious Rs 100 lakh crore Gati Shakti Master Plan to provide multi-modal connectivity to more than 1,200 industrial clusters.

#### **What is Gati Shakti?**

- The plan aims to transfer India into a hub of world class infrastructure by providing integrated and seamless connectivity for movement of people, goods and services.
- A digital platform will be created to bring 16 ministries including rail and roadways together for integrated planning and coordinated implementation of infrastructure projects.
- Comprehensiveness: It will incorporate the existing infrastructure schemes of different departments and state governments like Bharatmala, Sagarmala, inland waterways, UDAN etc.
- Analytical -It will offer 200 layers of geospatial data, including on existing infrastructure as well as geographic information about forests, rivers and district boundaries.
- Dynamic: The portal will allow various government departments to track the progress of various projects in real time and at one centralised place.
- Prioritization: Different Departments will be able to prioritize their projects through cross-sectoral interactions.
- Optimization- For the transportation of goods from one place to another, the plan will help in selecting the most optimum route in terms of time and cost.

- Synchronization: PM Gati Shakti will help in synchronizing the activities of each department in a holistic manner by ensuring coordination of work between them.
- The project will be spearheaded by the logistics division in the commerce ministry and the implementation will be monitored by a monitoring group under the Department for Promotion of Industry and Internal Trade (DPIIT).

**What are the targets to be achieved under Gati Shakti?**

- 11 industrial corridors and two new defence corridors in Tamil Nadu and Uttar Pradesh
- 4G connectivity in all villages
- Increasing renewable energy capacity to 225 GW from 87.7 GW
- Expanding the national highway network to 2 lakh km
- Increasing length of transmission network to 4,54,200 circuit km
- Creation of 220 new airports, heliports and water aerodromes
- Increasing cargo handling capacity of railways to 1,600 million tons from 1210 million tons
- Adding 17,000 km to gas pipeline network
- 202 fishing clusters/harbours/landing centres and more

**What are the existing challenges in the infrastructure creation?**

- Lack of coordination between different Departments
- Wasteful expenditure
- Time-taking approval process
- Multiplicity of regulatory clearances
- Hostile land acquisitions
- Difficulties in getting environmental clearance

**What will be the benefits of the Gati Shakti plan?**

- The plan aims to build Next Generation Infrastructure which will improve Ease of Living as well as Ease of Doing Business.
- It will facilitate the last mile connectivity of infrastructure and also reduce travel time for people.
- It will provide the public and business community information regarding the upcoming connectivity projects, other business hubs, industrial areas and surrounding environment
- The plan enables the investors to plan their businesses at suitable locations leading to enhanced synergies.
- It will create multiple employment opportunities and give a boost to the economy.
- It will improve the efficiency of port operations and cargo handling capacity and cut the vessel turnaround time.

### 3.4 Unity Small Finance Bank

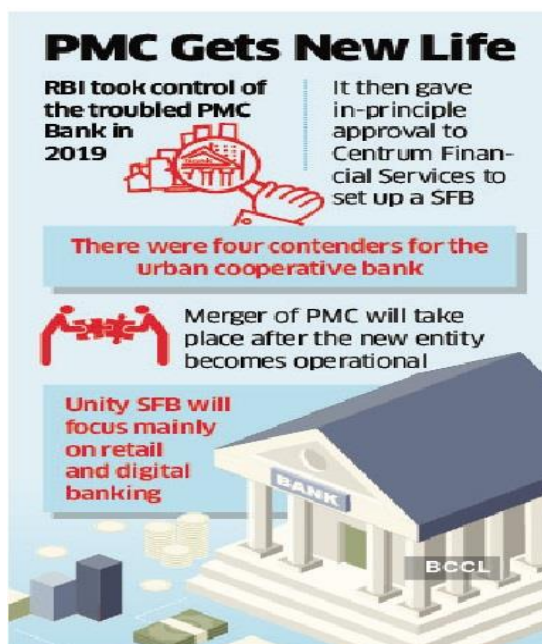
#### Why in news?

The RBI has issued a Small Finance Bank (SFB) license to the consortium of Centrum Financial Services and Digital payments platform BharatPe.

#### What are SFBs?

- Small Finance Banks is a specific segment of banking created by RBI with to undertake basic banking activities to un-served and underserved sections.
- The draft guidelines for licensing of small banks in the private sector were formulated and released by RBI in 2014.
- Objectives - The objectives of setting up of small finance banks will be to further financial inclusion by
  - Provision of savings vehicles
  - Supply of credit to small business units, small and marginal farmers, micro and small industries and other unorganised sector entities, through high technology-low cost operations.
- **Eligible promoters include**
  - Resident individuals/professionals with 10 years of experience in banking and finance
  - Companies and societies owned and controlled by residents
  - Existing NBFCs, Micro Finance Institutions and Local Area Banks that are owned and controlled by residents can opt for conversion into small finance banks
- There will not be any restriction in the area of operations of small finance banks.
- The minimum paid-up equity capital for small finance banks shall be Rs. 100 crore.

#### What is the significance of this SFB?





- The RBI has issued a new bank license after a gap of nearly 6 years and the new SFB has been incorporated as 'Unity Small Finance Bank'.
- The assets and liabilities of Punjab and Maharashtra Co-operative Bank will be taken over by the new entity.
- This proposal sheds light on the need for traditional lenders to expand their digital infrastructure.

**In the buy-now-pay-later (BNPL) and micro-lending models, companies like Paytm, Google Pay, Amazon Pay, etc. have partnered with NBFCs to assess creditworthiness of an existing customer and present it to the lender as a potential borrower.**

- For BharatPe, an SFB licence means it could expand its lending portfolio.
- The lending rates offered by SFBs could be attractive for small merchants across the country looking to borrow to fulfil their working capital needs.

### **Sowing Better to Eat Better**

#### **What is the issue?**

The first round of Fifth National Family Health Survey suggested the worsening of nutrition-related indicators and Comprehensive National Nutrition Survey (2016-18) highlighted the role of micro-nutrient malnutrition.

#### **What is the status of India's agri-food systems?**

- India produces sufficient food, feed and fibre to sustain about 18% of the world's population (as of 2020).
- Agriculture contributes about 16.5% to India's GDP and employs 42.3% of the workforce (2019-20).
- The problem of malnutrition is a huge challenge in India.
- COVID-19 has exacerbated the nutrition issue, while climate change has challenged the agricultural production itself.
- Economic and ecological sustainability, nutrition and the adoption of new agricultural technologies poses huge challenge.
- Disasters and extreme events make India's bio security more vulnerable.

#### **How can the agri-food system be improved?**

- A shift in production can diversify the dietary pattern and can ensure nutrition security.
- Nutritional security can be ensured by kitchen gardens, reducing post-harvest losses, nutrition-sensitive safety net programmes, women's empowerment, enforcement of standards, improving Water, Sanitation and Hygiene, nutrition education, and effective use of digital technology.
- The direction of agri-food systems has to be reoriented not only to enhance farm incomes but also to ensure better access to safe and nutritious foods.

- The cost on the environment and the climate posed by the agri-food systems has to be minimised.
- The theme of World Food Day 2021: “Our actions are our future; Better production, better nutrition, a better environment and a better life” has to be focussed.



- FAO’s support for the transformation of agri-food systems such as mainstreaming agro biodiversity, greening agriculture, promoting nutrition-sensitive agriculture and strengthening national food security is the need of the hour.
- Integrated crop-livestock-forestry-fishery systems can help farmers produce a variety of products.
- A sustainable agri-food system has to be promoted in which a variety of sufficient, nutritious and safe foods are made available at an affordable price to everyone.
- Such systems can deliver food security and nutrition for all without compromising the economic, social and environmental bases.

### 3.5 IIP and CPI data - August 2021

#### Why in news?

The Index of Industrial Production (IIP) and Consumer Price Index (CPI) figures were released recently for August 2021.

#### What does the data show?

- IIP - Industrial output rose 11.9% in August 2021, showing a double-digit year-on-year increase.
- The IIP constituents [mining, manufacturing and electricity] posted appreciable improvements of 23.6%, 9.7% and 16%, respectively.
- But there were contractions in last year when the economy was still struggling to recover from the first COVID-19 lockdown.
- So, the eroded base in the case of August 2020 IIP data disguises the fact that output actually shrank 0.2% on a month-on-month basis this year.

- Mining and manufacturing (together account for 94% of the index) posted sequential contractions of 0.8% and 0.5%, respectively.
- Only consumer non-durables and construction goods posted increases from July 2021.
- The slowdown in the consumer durables category reflects the lack of demand for white goods amid the pandemic.
- CPI - Inflation in September 2021 slowed by 95 basis points from the preceding month to 4.35%.
- CPI-based inflation eases towards the RBI's mandated target of 4%.
- Retail inflation has thus shown a sharp slowdown in price gains.
- But inflation too has benefited from the elevated levels in the year-earlier period when the headline reading had accelerated to 7.3% in September 2020.
- So the CPI data masks the real extent of price pressures across major product categories.
- With global crude oil ruling near 3-year highs, the Central and State governments should respond to the RBI's entreaties and cut fuel levies.
- Unless this happens, there is little scope for inflation easing by much in this category.

#### **Index of Industrial Production (IIP)**

- IIP is a composite indicator measuring changes in the volume of production of a basket of industrial products over a period of time, with respect to a chosen base period.
- It is compiled and published on a monthly basis by the CSO (now known as National Statistics Office (NSO)) with a time lag of 6 weeks from the reference month.

#### **Consumer Price Index (CPI)**

- The CPI is a measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food, and medical care.
- It is calculated by taking price changes for each item in the predetermined basket of goods and averaging them.
- The CPI is one of the most frequently used statistics for identifying periods of inflation or deflation.
- India uses 2012 as the base year for calculating CPI.

### **3.6 Ease of Doing Business Rankings - A Controversy**

#### **What is the issue?**

IMF MD Kristalina Georgieva is under scrutiny for her role in alleged rigging of the World Bank's Ease of Doing Business rankings when she was chief executive there.

#### **What is the controversy around Georgieva?**

- Georgieva is a Bulgarian economist who held several high-profile positions in European politics.
- In January 2017, she was appointed the chief executive of the World Bank group.

- In January 2019, she took over as the interim president of the WB group after Jim Yong Kim resigned.
- In October 2019, she took over as Managing Director of the IMF.
- In January 2018, Paul Romer, then the chief economist of the World Bank told that the World Bank's EoDB rankings were tweaked for political reasons and he resigned.
- In August 2020, the World Bank suspended its EoDB rankings after finding some data irregularities in the 2018 and 2020 reports.
- It was alleged that the EoDB rankings were tweaked to inflate the ranks for China (in EoDB 2018) and Saudi Arabia, UAE and Azerbaijan (EoDB 2020).

**China is the third-largest shareholder in the World Bank after the US and Japan.**

- Wilmerhale's investigations found that the World Bank staff compromised the data to help China's ranking under pressure from Georgieva.
- The report states that Georgieva punished the World Bank's country director for mismanaging the Bank's relationship with China.
- **Why do EoDB rankings matter?**
  - The EoDB rankings indicate how easy or difficult it is for anyone to do business in a country.
  - It maps whether and by how much a country improves on a number of parameters, such as the time taken to start a business, how costly it is to get a construction permit, etc.
  - EoDB is used by international investors to assess risk and opportunity across the globe.
  - It is used by political leaders to either claim success or criticise the existing government.
- **How reliable are the rankings?**
  - Cherry-picking of top cities - Top cities such as Beijing and Shanghai in China, Mumbai and Delhi in India are selected to make the ranking go high.
  - Suspicion on data integrity - There is a disconnect between the rise in EDB index rank and economic outcomes.
  - Changes to the data - There were reported changes in the data, inconsistent with the Doing Business methodology.
- **How can the ranking methodology be improved?**
  - A substantial methodological shift towards data collection from representative samples of actual business owners and operators is needed.
  - Government functions that provide essential public goods to the private sector should not be ignored.
  - Countries should not be ranked on their tax rates.

- The indicators “protecting minority shareholders” and “resolving insolvency” shall be eliminated.
- “Employing Workers” indicator shall be restored and improved countries should not be ranked based on this information.
- The transparency and oversight of Doing Business needs improvement.

### 3.7 **Animal husbandry needs Attention**

#### **What is the issue?**

The pattern of global consumption is evolving towards higher share of animal products in diets focussing on the need for a proper and reliable dairy and poultry ecosystem.

#### **What is the status of dairy and poultry sector?**

- India is the world’s largest producer of milk and third largest producer of egg.
- By 2022-23, milk production will expand to 235 million tonnes (from 198 mt in 2019-20) and egg production to 136 billion (from 114 billion in 2019-20).
- The protein meal demand is set to rise by 3 per cent per annum next 10 years.
- And by 2030, poultry meat will represent 41 per cent of all protein from meat sources.
- Consumers are attracted to poultry meat for lower price, product consistency and higher protein/lower fat content.
- In 2020, total milch cattle population was up by 10.5 per cent to 74.6 million in 2019.

#### **What are the challenges in this sector?**

- Disease outbreaks, sanitary restrictions and trade policies are the major challenges in the world meat market.
- Challenges in sourcing raw material for feed such as land constraint, water shortage, climate change, low crop yields, lack of tech infusion, policy constraint, etc adds to the issue.
- Maize and protein meal (oilseed extractions) will constitute 60 per cent of total feed use by 2030, according to OECD-FAO and the feed demand for maize is set to grow by 1.4 per cent per annum.
- **Unreliability** of feed supply, feed price volatility, demand fluctuation, policy environment, etc. are some of the issues.
- The biggest challenge to animal protein will come from the emerging plant protein segment.
- Livestock sector contributes around 54.6 % of total agricultural emissions in India adding to global warming.

#### **How to address these challenges?**

- **Feed** intensification at the rate of 2.4 per cent is needed to meet the feed demand growth of the next 10 years.
- Animal feed market will have to be part of ‘Sustainable Animal Agriculture Ecosystem’.

- Contract farming can be promoted for assured availability and access to raw materials for feed market.
- Price stability can be provided by establishing backward linkages especially with FPOs (Farmer Producer Organizations).
- Hedging in commodity exchanges through the derivatives route and delivery based forward contracts can be explored for price risk management.

**Hedging against investment risk means strategically using financial instruments or market strategies to offset the risk of any adverse price movements.**

- Research is a priority to study the market and demand projection strategies can ensure higher yields per milch animal, promote animal health and nutrition, etc.
- Upgrading skills, setting up of adequate processing capacity and investment can attract foreign direct investment.

### **3.8 Protecting India's Natural Labs**

#### **What is the issue?**

India is long known as the world's natural laboratory for geo-scientific learning but we are inching towards the disappearance of most of our geological heritage sites.

#### **What is the significance of India's geodiversity?**

- Indian landmass broke loose from the Gondwana land 150 million years ago and drifted northwards and got entwined with the world's youngest plate boundary.
- The geological features evolved over billions of years through numerous cycles of tectonic and climate upheavals.
- The Kutch region in Gujarat has dinosaur fossils and Tiruchirappalli of Tamil Nadu is originally a Mesozoic Ocean acting as a store house of Cretaceous (60 million years ago) marine fossils.

#### **What is the status of recognition of geoheritage sites?**

- The geological heritage of our planet was first recognised in 1991 at First International Symposium on the Conservation of our Geological Heritage (Digne resolution).
- UNESCO facilitated efforts to create a formal programme to promote a global network of geoheritage sites complementing the World Heritage Convention and the UNESCO's MAB.
- Countries like Vietnam and Thailand have implemented laws to conserve their geological and natural heritage.
- The Global Geoparks Network was founded in 2004 as an international partnership developed under the umbrella of UNESCO.
- Today, there are 169 Global Geoparks across 44 countries.

**What is the status of geoheritage sites in India?**

- India is a signatory to the establishment of UNESCO Global Geoparks.
- But, it does not have any legislation and policy for conservation of geoheritage.
- Geological Survey of India (GSI) has identified 32 sites as National Geological Monuments.
- Yet no geopark in India is recognised by the UNESCO.

**Geological Survey of India is an attached office to the Ministry of Mines with its headquarters at Kolkata.**

**What is the reason for disappearance of most of our geological heritage sites?**

- Lack of geological literacy - Indian classrooms view disciplines like environmental science and geology inferior to other pure subjects like physics, biology, and chemistry.
- The lack of awareness in geo-heritage parks makes decision-making on climate change difficult.
- Developmental activities - The Anjar site in Kutch district which has high concentration of iridium providing evidence for a massive meteoritic impact that caused the extinction of dinosaurs about 65 million years ago was destroyed by laying of a new rail track.
- A national geological monument exhibiting a unique rock called Nepheline Syenite in Ajmer district of Rajasthan was destroyed in a road-widening project.
- The Lonar impact crater in Buldhana district of Maharashtra is under the threat of destruction.
- Unplanned and booming real estate business has destroyed many geoheritage sites.
- Unregulated stone mining activities have also contributed to this destruction.

**What does this situation call for?**

- The situation calls for immediate implementation of sustainable conservation measures such as those formulated for protecting biodiversity.
- A progressive legal framework is needed to conserve geoheritage sites.
- There is a need for a national conservation policy under the direct supervision of a national body committed to the protection of geo-heritage sites.

**3.9 Questions arising from QES data****What is the issue?**

The Labour Bureau's All-India Quarterly Establishment-based Employment Survey (QES) for the first quarter of 2021 (April to June) throws up some perplexing numbers raising suspicions on reliability.

**What is the survey about?**

- The objective of the QES is to enable the government to frame a "sound national policy on employment".

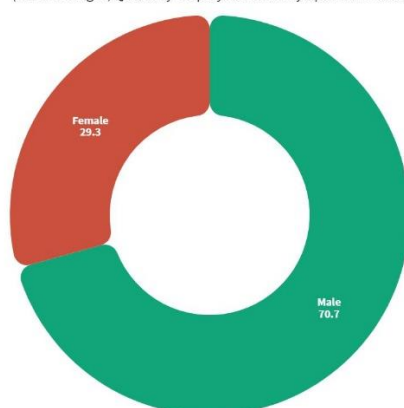
- It covers establishments employing 10 or more workers in the organised segment in 9 sectors - manufacturing, construction, trade, transport, education, health, accommodation and restaurants, IT/BPO, and financial services.
- These sectors account for 85% of the total employment in establishments employing 10 or more workers as per Sixth Economic Census which serves as the basis of QES survey.
- The QES has reported a simple growth rate of 29% in employment in FQ2021 over 2013-14.

#### What are the other surveys regarding employment?

- While the QES provides a demand side picture, Periodic Labour Force Survey (PLFS) gives the supply side picture of the labour market.
- The release of the PLFS results in 2019 showed the highest-ever unemployment rate of 6.1%.
- CMIE data has been projecting a distressed labour market scenario especially during the pandemic.

**PLFS is released by National Sample Survey Office (NSSO) under MoSPI to generate estimates of various labour force indicators.**

**Gender-wise Estimated Employment Share in Sectors**  
(in Percentages, Quarterly Employment Survey April-June 2021)

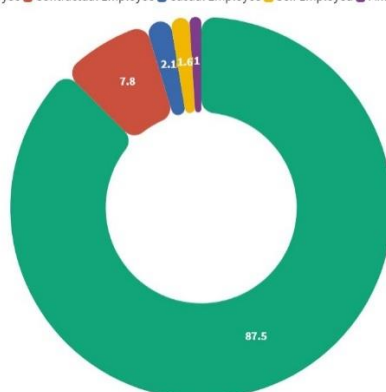


Source: QES, 1st Quarter Report

FAQTLY

**Sector-wise Estimated Workers according to terms of Employment**  
(in Percentages, Quarterly Employment Survey April-June 2021)

Regular Employee Contractual Employee Casual Employee Self Employed Fixed Term Employee



Source: QES, 1st Quarter Report

FAQTLY



**What cautions were raised from QES data?**

- Limited coverage - establishments with ten or more workers account for a mere 1.66% as per the Sixth Economic Census.
- Also, a disproportionately 81.3% of workers are in unorganised sector as per the PLFS data.
- Employment growth despite economic slowdown - The QES provides very broad employment figures — 3.8 crores approximately in FQ-2021.
- But CMIE data revealed a discouraging picture in April where salaried class shed around 3.4 million jobs compared to March 2021 and the urban unemployment rate was as high as 9.78%.
- The real national income growth rates also declined from 2017-18 onwards.
- Credibility of statistics – QES reports that 87.5% of the estimated workers were regular workers and just about 2.1% were casual workers.
- Also it mentions that 66-86% of estimated employees received full wages in contrary to other reports including those by the Central government.
- Overlaps between the registrations – AES says that contract workers accounted for overall 7.8% .
- But Annual Survey of Industries for 2017-18 mentions that 36.37% of the total workers are employed in the organised factory sector.
- Methodological shortcomings - An outdated sample frame, non-comparability of employment numbers from EC-2013 with QES and differences in methods used for gathering information adds to unreliability.

**What can be inferred from the survey?**

- It would have been more prudent to await the release of a newly updated frame in the EC-2020 and then canvass for the QES.
- F12021 QES must be considered as a starting point of the new data set rather than as a continuum of the Sixth EC.
- The Labour Bureau could have put a high-frequency labour market information base like most advanced economies.

**3.10 Need to clean up the World Bank and IMF****What is the issue?**

Selection of heads of the Bretton Woods institutions, the World Bank and International Monetary Fund (IMF) has been a dismal failure.

**What are the concerns with cherry picking of appointments?**

- Dual monopoly selection procedure - Only an American can head the Bank and only a European can head the IMF results in western powers sharing the spoils.

- Personal integrity - The personal integrity of the heads has been questioned because of the recent revelations of misconduct at the World Bank to make at least two major countries China and Saudi Arabia look better.
- Credibility of policy messages - The heads often go around the developing world preaching the virtues of good governance but the credibility is affected if the carriers themselves are compromised.
- Accountability - International institutions operate in a grey zone of neither clearly being in or outside the realm of formal politics and hence have weaker mechanisms of accountability.
- Rise of China – China is attempting to place its own nationals in existing IOs both for prestige and to pursue its national interests.
- Its own nationals now head four of the 15 UN specialised agencies raising deep concerns, most notably the suppression of the inquiry into the origins of the corona virus.
- Shaping the global order - The contest between the West and China to shape the global order is becoming obvious.
- The US neutering of the World Trade Organisation’s Appellate Body under both Trump and Biden administrations is another recent example

#### What does this call for?

- Global political leaders convening next week must open up selection of heads of these institutions to the best candidates, regardless of nationality.
- To clear up the current mess, David Malpass and Kristalina Georgieva, the current heads of the Bretton Woods institutions have to answer a lot regarding Doing Business saga.

### 3.11 Spike in Crude Oil Prices – Impacts

#### What is the issue?

The recent spike in global crude oil prices above the \$80-per-barrel mark led to a dip in key indices in the stock market.

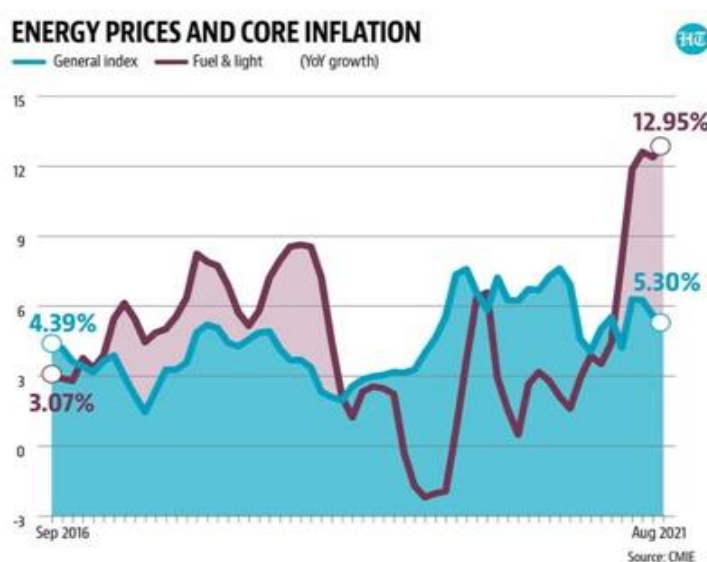
#### Why are oil prices rising?



- The oil prices hit a low of \$16 per barrel on April 22 last year.
- It has risen nearly 58% from about \$51.8 per barrel to about \$81 at close on Wednesday.
- Recovery in global demand as the world economy recovers from the pandemic is a major reason for increase in prices.
- Supply restrictions maintained by the OPEC+ grouping have kept international oil prices high.
- A shortage of gas in Europe and Asia has boosted demand for oil for power generation.
- High taxes by the central and state governments too have contributed to retail prices being far higher.

### What will be the impact of rising oil prices?

- Impact on stocks - A sharp surge in oil prices can create short-term panic in the equity markets.
- Equities often deliver more than the expected inflation that the oil surge may lead to.
- Impact on bonds - Sustained high inflation can result in rising yields and falling bond prices.
- For bonds, central bank policies will play a far greater role than the direct impact of rising oil prices.
- In sectors where oil is a major cost component, a negative reaction on returns can be expected.
- Impact on currency - Rising crude prices tend to depress the rupee as India being a major importer of oil.
- It will lead to expansion in the import bill as it is expected that Brent crude can test the \$ 90/barrel mark.



### Crude import accounts for nearly 20% of India's import bill.

- Impact on inflation - Rise in prices could lead to a surge in inflation, forcing the RBI to go for liquidity tightening measures followed by rate hikes.

- An increase in crude prices means an increase in the cost of producing and transporting goods thus adding to inflation.
- Impact on government finances - A surge in crude prices tends to increase India's expenditure and adversely affects the fiscal deficit.

**It also impacts the current account deficit — a measure of value of imported goods and services exceeding the value of those exported.**

- Impact on market - Sectors including refining, lubricants, aviation and tyres are sensitive to oil price movement.
- Rise in crude oil prices impact their input raw material cost and profitability thereby hurting their share prices.

### 3.12 Coal Shortage in India

**What is the issue?**


India's thermal power plants are facing a severe coal shortage, with coal stocks having come down to an average of 4 days of fuel across an increasing number of thermal stations.

**What is the current status of coal stocks?**

**Coal fired plants makeup nearly 70% of India's power source mix.**

- On October 4, 16 thermal power plants with a power generation capacity of 17,475 MW (mega watts) had zero days of coal stock.
- An additional 45 thermal power plants with a power generation capacity of 59,790 MW had coal stock only for up to two days.
- It is way below the government recommendations of holding 14 days worth of coal stock.
- The non-pithead plants or plants which are not located close to coal mines have critical levels of stock i.e under 8 days.

Mode	Pithead		Non-pithead	
	2020	2021	2020	2021
Number of plants	17	16	118	119
Capacity (MW)	34,300	35,200	1,28,226	1,29,866
Daily requirement ('000T)	452.3	464.2	1,327	1,359.9
Total stock ('000T)	5,733.5	2464	28,434.6	5,345.2
Total stock in days	13	5	21	4



**What is the reason behind India's coal shortage?**

- Increased power demand - A sharp uptick in power demand as the economy recovers from Covid-19 pandemic coupled with supply issues have led to coal shortage.
- India consumed 124 billion units of power in August 2021 compared to 106 billion units of power in August 2019.
- Supply crunches - Lower than normal stock accumulation by thermal power plants in the April-June period is another reason.
- Continuous rainfall in coal bearing areas in August and September caused fewer despatches of coal from coal mines.
- Fall in imports – There has been sharp fall in imports due to high international prices.
- Non-payments of coal dues - The non-payments of coal dues by States such as Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh and Madhya Pradesh also resulted in inadequate supplies.

**What will be the impact of coal shortage?**

- The electricity shortages could delay India's economic reopening.
- It might lead to downscaling of business productions.
- India's population and under developed energy infrastructure will mean the power crisis could hit long and hard.

**What measures is the government taking to address the situation?**

- The Power Ministry has constituted a Core Management Team to monitor and manage the fuel on daily basis to improve supplies to power plants.
- Coal India, the state-owned miner claims that it has ramped up supplies to thermal power plants by nearly 12 per cent annually.
- The government is pressing thermal plants with captive coal mines to boost their coal output to meet their own demand.
- The Power Ministry is trying to expedite the start of production from a number of mines that already have all requisite clearances.
- The government has also boosted the number of rakes of coal being transported to thermal power plants daily.

**What is the way forward?**

- State run Coal India and NTPC Ltd. can work together to raise the output from mines.
- India has to ramp its imports despite the financial cost.
- Advance preparation and ensuring sufficient stocks ahead of monsoons is a well known strategy.

### 3.13 Trade Multilateralism at Risk

#### **What is the issue?**

The upcoming WTO ministerial meeting scheduled in Geneva provides an opportunity to rescue the global institution which is facing an existential crisis due to the U.S. policy.

#### **What is the U.S. policy on WTO?**

- United States seems to have lost interest in WTO as it feels that WTO hasn't served the American national interest.
- It has failed to stem China's rise and regularly indicted the U.S. in several trade disputes.
- The U.S. policy on the WTO is most evident in the crippling of Appellate Body (AB) which is a part of the WTO's dispute settlement mechanism.
- The U.S. has consistently blocked the appointment of AB members and AB has stopped functioning due to rising vacancies.
- This provides scope for non-compliance with the WTO panel decisions by appealing into the void.
- The U.S. has also stalled the proposal of the EU to establish an alternative interim appellate arbitration mechanism.
- Appellate Body (AB) is composed of seven permanent members appointed by WTO members by consensus.
- The initial appointment of an AB member is for a four-year term, with possible reappointment for a second term.
- The AB members can continue to adjudicate an appeal even after expiry of their tenure, on cases to which they were appointed during their term.

#### **What are the other challenges faced by WTO?**

- Public stockholding for food security - The WTO rules allow countries to procure stock and distribute food.
- However, if procurement at MSP is higher than the external reference price, then MSP-provided budgetary support shall be considered trade-distorting and is subject to an overall cap.
- Legal suits will not be brought if countries breach the cap but there has been no permanent solution for considering MSP-provided budgetary support as non trade distorting.
- Waiver of TRIPS - India and South Africa proposed a TRIPS waiver for COVID-19 medical products to overcome intellectual property (IP)-related obstacles.
- But the WTO member countries continue to disagree on the need of waiving the TRIPS agreement.
- Regulation of irrational subsidies - WTO is about to sign a deal on regulating irrational subsidies provided for fishing that has led to the overexploitation of marine resources.

- A differential treatment provision must be insisted to strike a balance between conserving ocean resources and the livelihood of marginal fishermen.
- Mega plurilateral trade agreements - The gridlock at WTO has led to the emergence of mega plurilateral trade agreements like Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and RCEP.
- These plurilateral agreements not only fragment the global governance on international trade but also push the multilateral order to the margin.

#### **What is India's approach towards WTO?**

- Prime Minister during his recent U.S. visit insisted for a rule-based global order.
- Institutional multilateralism would be the ideal antidote to unilateralism and economic nationalism.
- The WTO is the only forum where developing countries like India can push for evolving an inclusive global trading order.

### **3.14 RBI's Microfinance Proposals**

#### **What is the issue?**

RBI's Consultative Document on Regulation of Microfinance which aims to promote financial inclusion of the poor and competition among lenders is likely to unfavour the poor.

To know more about Consultative Document on Regulation of Microfinance, click [here](#)

#### **Why is microfinance crucial for rural households?**

- Microfinance is becoming increasingly important in the loan portfolio of poorer rural households.
- Unsecured or collateral-free loans from private financial agencies (SFBs, NBFCs, NBFC-MFIs and some private banks) forms the major chunk.
- These loans were of disproportionate significance to the poorest households and to persons from Scheduled Castes and Most Backward Classes.
- These microfinance loans were rarely for productive activity and used mainly for house improvement and meeting basic consumption needs.
- Poor borrowers took microfinance loans, at reported rates of interest of 22% to 26% a year against the low interest offered by institutional mechanisms such as PACS.

#### **Why are microfinance loans costlier?**

- Method of repayment - An official flat rate of interest used to calculate equal monthly instalments which rises the effective rate of interest over time.
- Processing fee and insurance premium – A processing fee of 1% is added and the insurance premium is deducted from the principal.
- As the principal is insured in case of death or default of the borrower or spouse, the interest rate is higher in response to high risk of default.

**What is different about the recent phase of growth of financial services?**

- The privately-owned for-profit financial agencies are regulated entities and are promoted by RBI.
- Lending by small finance banks (SFBs) to NBFC-MFIs has been recently included in priority sector advances
- In the 1990s, given the lack of regulation and scope for high returns, several for-profit financial agencies such as NBFCs and MFIs emerged involving in malpractices.
- The microfinance crisis of Andhra Pradesh led RBI to formulate a regulatory framework for NBFC-MFIs in 2011 based on the recommendations of the Malegam Committee.
- Later RBI permitted SFBs to take banking activities to the “unserved and underserved” sections of the population.
- The RBI’s consultative document notes, 31% of microfinance is provided by NBFC-MFIs, and another 19% by SFBs and 9% by NBFCs.

**What will be the implications for the poor?**

- The current share of public sector banks in microfinance (SHG-bank linked microcredit) of 41%, is likely to fall sharply.
- This privatisation of rural credit will reduce the share of direct and cheap credit from banks and leave the poor borrowers at the mercy of private financial agencies.
- It has also raised concerns about the implications for women borrowers.
- To meet the credit needs of poorer households strengthening of public sector commercial banks and firm regulation of private entities is needed.

**3.15 Demands on Legal Guarantee for MSP****What is the issue?**

The question of a legal guarantee of MSP for all crops and demands on cancellation of three farm laws continue to be the bone of contention between the protesting farmers and government.

**What is the demand of farmers for a legal guarantee of MSP?**

- Most of these 23 crops are purchased by private players and there is high fluctuation in the prices.
- Sometimes these crops are sold much below the MSP and sometimes they fetch a little more than the MSP.
- The farmers, therefore, want a legal guarantee that crops can be sold only at MSP or above it for which the government is not ready to accept.
- Some states have started compensating farmers for crops that they sell below the MSP rates under their own state-level policies.



**Can state-level policies assure that the farmers get MSP for their crops?**

- States like Madhya Pradesh, Kerala have launched schemes like Bhavantar Bhugtan Yojna and Bhavantar Bharpayi Yojna where state governments pay the difference to the farmers when the sell their crop below MSP in the market.
- Under these schemes, the state price or floor price are fixed by the state governments.
- State governments cannot sustain such schemes for long and also they cannot cover all the crops.

**How can it be resolved?**

- Along with the current MSP regime, corporations like Cotton Corporation of India should be formed by the centre government for cereals that are not covered under centres' current MSP regime.
- When such corporations cover all the crops private players will not be able to exploit farmers.
- When such corporations cover all the crops, private players will not be able to exploit farmers.
- It will also lead farmers to opt for diversification of crops also in states like Punjab.

**3.16 SBM-U 2.0 and AMRUT 2.0****Why in news?**

Prime Minister has announced the second phase of Swachh Bharat Mission-Urban (SBM-U) and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) with a fresh promise to make India's cities clean.

**What is the state of affairs of Municipal Solid Waste (MSW) in India?**

- Urban India alone generates nearly 0.15 million tonnes per day of MSW, with per capita generation ranging between 0.30–0.45 kg per day.
- Of the 62 million tonnes of waste generated annually in India only 68 per cent is collected, of which only 28 per cent is treated by municipal corporations.
- Lower recycling in India is attributed to reasons such as lack of social awareness, socio-political hindrances, inefficient segregation and lack of appropriate infrastructure and technology.
- The informal sector is often not officially approved or recognised besides the fact that they potentially contribute to waste recycling practices of cities.

**What is the second phase of scheme about?**

- SBM-U 2.0 aims to make Indian cities garbage free and all urban local bodies (ULBs) open defecation free.
- It will focus on source segregation of solid waste, utilising the principles of 3Rs (reduce, reuse, recycle), scientific processing of municipal solid waste and remediation of legacy dumpsites.
- The scheme has an outlay of Rs. 1.41 lakh crore.
- It focuses to transition to a circular economy that treats solid and liquid waste as a resource.

- It also aims 100% tap water supply in about 4,700 urban local bodies and sewerage and septage in 500 AMRUT cities.



### What are the concerns of the scheme?

- The current model of issuing mega contracts to big corporations has left segregation of waste at source a non-starter.
- In the absence of a scaling up of operations which can provide large-scale employment, SBM-U 2.0 cannot keep pace with the tide of waste in a growing economy.
- On sanitation, many of the toilets are without water and are unusable.

### How to address these concerns?

- State and municipal governments, which do the heavy lifting on waste and sanitation issues, should work to increase community ownership of the system.
- The high ambition of achieving 100% tap water supply in 500 AMRUT cities depends crucially on making good public rental housing accessible to millions of people.

### 3.17 Reimagining food systems with lessons from India

#### Why in news?

The first and historic United Nations Food Systems Summit (UNFSS) 2021 has concluded after an intense ‘bottom-up’ process to address rising hunger.

#### Why the Food Systems Summit and what is the expectation from its outcome?

**Global food systems are the networks that are needed to produce and transform food, and ensure it reaches consumers, or the paths that food travels from production to plate.**

- Global food systems are in a state of crisis affecting around 811 million people in the world who go to bed hungry each night.
- The summit involved serious debates of UN member states, civil society, NGOs, academics, researchers, individuals, and private sector to evolve transformative themes and ideas for reimagining food systems.

- It focused on five identified action tracks namely
  - Ensure access to safe and nutritious food for all
  - Shift to sustainable consumption patterns
  - Boost nature-positive production
  - Advance equitable livelihoods
  - Build resilience to vulnerabilities, shocks, and stress
- It aims to get us back on track to achieve all 17 SDGs by 2030 that are directly related to the food system.
- The Statement of Action emerging from the summit supports the global call to “Build back better” after the COVID-19 pandemic.

### **What are the lessons learnt by India with respect to food security?**

- The long journey from chronic food shortage to surplus food producer offer lessons in the area of land reforms, public investments, institutional infrastructure, public support, intervention in agri markets and agri research and extension.
- The period between 1991 to 2015, saw the diversification of agriculture beyond field crops focussing on horticulture, dairy, animal husbandry and fishery sectors.
- The learnings included the elements of nutritional health, food safety and standards, sustainability, etc.
- The National Food Security Act 2013 anchored the Targeted Public Distribution System, Mid-Day meals and Integrated Child Development Services contributing to food equity.
- During the global food crisis 2008-2012 and the COVID-19 pandemic fallout, vulnerable and marginalised families in India continued to be buffered by its robust TPDS and buffer stock of food grains.
- India’s decision to fortify rice supplied through the PDS with iron and Poshan Abhiyan are in lines with nutritional security.

### **What are the challenges in ensuring food security?**

- Climate change and unsustainable use of land and water resources are the most formidable challenges as highlighted by the latest IPCC report.
- Dietary diversity, nutrition, and related health outcomes are another area of concern due to increased focus on rice and wheat.
- Despite being a net exporter and food surplus country, India has a 50% higher prevalence of under nutrition compared to the world average.
- The State of Food Security and Nutrition in the World’ report, estimates that around a tenth of the global population was undernourished last year.

- Reducing food wastage or loss of food is a mammoth challenge as in India it exceeds Rs. 1 lakh crore.

#### What does this state of food system calls for?

- The Nobel Peace Prize 2020 conferred on the United Nations WFP highlighted the importance of addressing hunger to create stability.
- Strong cooperation and partnership between governments, citizens, civil society organisations, and private sector must be boosted to make the world free of hunger by 2030.
- There is a need to collaborate to invest, innovate, and create lasting solutions in sustainable agriculture for equitable livelihood and food security.
- This surely requires reimagining the food system towards the goal of balancing growth and sustainability, mitigating climate change, ensuring healthy, safe, quality and affordable food.

Until the day we have a medical vaccine, food is the best vaccine against chaos.

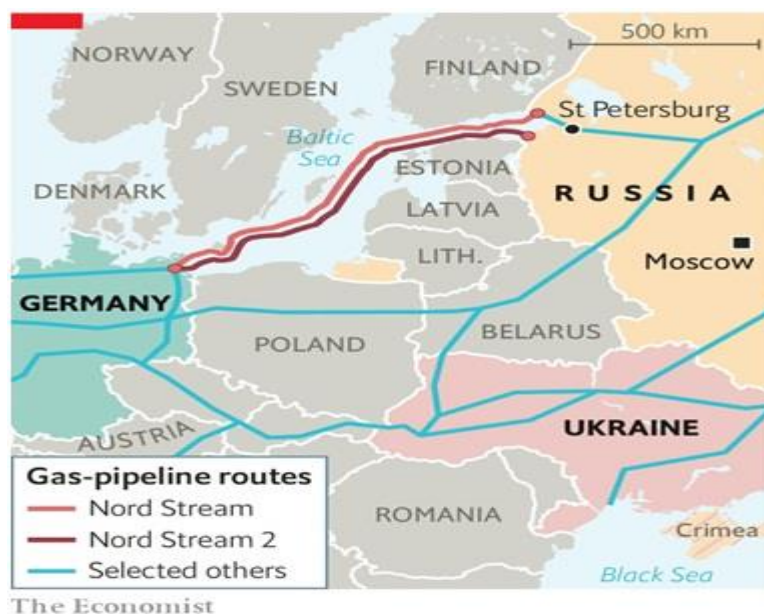
### 3.18 Nord Stream 2 Pipeline

#### Why in news?

The Nord Stream 2 (NS2) running from Russia to Germany across the Baltic Sea has been completed.

#### What is Nord Stream 2 (NS2)?

- NS 2 is an expansion of Russia's existing Nord Stream gas pipeline to Germany across the Baltic Sea.
- The total capacity of two strings of Nord Stream 2 is 55 billion cubic meters of gas per year.
- NS2's manufacture began in 2016 and construction in 2018.
- The 1,224 km, \$11-billion underwater link is the shortest, most economical and environment-friendly route to double Russia's gas export to Germany.



**What is the significance of the project?**

- European gas prices have broken records this year, edging close to an unprecedented \$1,000 per thousand cubic meters.
- Due to lack of viable alternatives to gas, low storage levels because of a severe winter and the post-COVID-19 economic surge, NS-2 is of greater significance.
- It provides Russia with more direct access to the European gas market.
- National governments and local authorities are set to benefit economically from investment and employment in the pipeline.

**Why is the project controversial?**

- Ukraine's concerns - Ukraine offered extra transit capacity for Russian gas to Europe but Russia booked only 4.3% of it, citing domestic demand.
- It believes the pipeline is a Russian geopolitical weapon aimed at depriving Ukraine of crucial revenue.
- If Russia cuts its transportation of gas through Ukraine, it would lose billions of dollars in transit fees.
- Ukraine whose viability is dependent on Russian fossil fuels through its territory, fears that Russia could reduce energy supplies by cutting those needed for Ukraine's consumption.
- Fears that this project would give Russia a freer hand for military actions in Ukraine is another concern.
- Poland's stand - Poland says that that gas line project is anti-competitive.
- It alleges that NS2 is Russia's most daring attempt to break up the EU.
- USA's Concerns - USA opposes the pipeline, arguing that it would increase Moscow's leverage over European countries.
- The United States has just strengthened the Western Alliance by sanctioning NS2.
- Germany's stand – Germany supports the project as dozens of German businesses have invested in this project.
- But Germany is yet to issue an operating licence in order to expedite the start of NS2.
- EU energy policy – In NS2, Gazprom is the gas producer and supplier and this violates the market-oriented EU energy policy that mandates auctioning the transportation to third parties.

**Does the project seem viable?**

- To enable a consensus on NS2, Germany has promised assistance to Ukraine for development of hydrogen energy.
- This environmentally friendly hydrogen option presents scope for accommodating the requirements of German coalition politics and support for the Ukraine turning NS2 into a win-win proposition.

## 4. ENVIRONMENT

### **Continuous Loss of Biodiversity**

Context:

As per the latest findings, continuous loss of biodiversity is observed across the shorelines of settlement zones in Indian Sundarbans.

#### **Issues and challenges:**

- Small patches of mangroves are being lost gradually and quietly due to their indiscriminate destruction for either coastal development or short-term gains.
- These patches are observed to be enriched habitats of several rare and threatened flora and fauna.
- The continued loss of shoreline mangrove ecosystems has created fragmented and fragile mangrove habitats for rare taxa and framed barriers to their movement and dispersal.
- This irreversible loss of biodiversity is often neglected, which could never be compensated with any 'cut the established and plant the new' theory.

#### **What can be done?**

The Sunderbans are affected due to the polluted discharges from shrimp ponds. So, instead of popularising shrimp farming, if more indigenous fishing activities were encouraged, coastal threatened biodiversity could be protected and at the same time livelihood options may be provided to the coastal dwellers.

#### **About Indian Sundarbans:**

- Covers 4,200 sq. km and includes the Sunderban Tiger Reserve of 2,585 sq. km — home to about 96 royal Bengal tigers (as per the last census in 2020).
- It is a world heritage site and a Ramsar site (a wetland site designated to be of international importance).
- It is also home to a large number of "rare and globally threatened species, such as the critically endangered northern river terrapin (Batagur baska), the endangered Irrawaddy dolphin (Orcaella brevirostris), and the vulnerable fishing cat (Prionailurus viverrinus)."
- Two of the world's four horseshoe crab species and eight of India's 12 species of kingfisher are also found here. Recent studies claim that the Indian Sundarban is home to 2,626 faunal species and 90% of the country's mangrove varieties.

### **Cyclone Gulab:**

#### **By whom the name was given?**

Gulab was suggested by Pakistan.

#### **How are cyclones formed?**

- Cyclones are formed over the oceanic water in the tropical region.

- In this region, the sunlight is highest which results in warming of land and water surface. Due to warming of the surface, the warm moist air over the ocean rises upwards following which cool air rushes in to fill the void, they too get warm and rise — the cycle continues.

India Meteorological Department Tropical Cyclone Intensity Scale	
Category	Sustained winds (3-min average)
Super Cyclonic Storm	>120 kt >222 km/h
Very Severe Cyclonic Storm	64–119 kt 118–221 km/h
Severe Cyclonic Storm	48–63 kt 88–117 km/h
Cyclonic Storm	34–47 kt 62–87 km/h
Deep Depression	28–33 kt 52–61 km/h
Depression	≤27 kt ≤51 km/h

### But what creates the spin?

Wind always blows from high pressure to low pressure areas. High pressure areas are created in the cold region while low is created in the warm regions. Polar Regions are high pressure areas as the amount of sunlight here is less than the tropical region. So, wind blows from Polar Regions to tropical regions.

- Then comes the Earth's movement, which is west to east. The Earth's rotation on its axis causes deflection of the wind (in the tropical region as the speed of spinning of Earth is higher compared to polar sides due to its spherical shape — blowing from both the Polar Regions. Wind coming from the Arctic is deflected to the right while Antarctic wind deflects to the left side.
- So, wind is already blowing in a direction. But when it reaches the warmer place, cool air starts getting attracted to the centre to fill the gap. So while moving to the centre, cool air keeps getting deflected resulting in circulation of wind movement — this process continues until the cyclone hits the land.

### What happens when a cyclone hits the land?

- Cyclone dissipates when it hits the land as the warm water that rises and creates space for cool water is no longer available on land. Also, the moist air that rises up forms clouds leading to rains that accompany gusting winds during cyclones.

**Measures to prevent recurrence of flooding.****Context:**

- Tamil Nadu state government has released a report on the action taken by the government with regard to measures to prevent recurrence of flooding.
- The report was in response to the National Green Tribunal (NGT) registering a suo motu. The court had done so after newspapers widely reported areas in the city being flooded in addition to an overflow of sewage November 30, 2020.

**What has the report said?****Causes for flooding:**

- Encroachments, faulty drainage systems and tampering of natural course of water had made the mega polis prone to flooding every year.
- Rapid urbanisation of Greater Chennai and its peri-urban areas had led to massive changes in land use patterns, as residential areas had sprung up in farmlands.
- The changes in land use patterns were done without making the required changes for a proper drainage system to manage the flow of surplus water from traditional tanks as well as flood waters from catchment areas.
- Irrigation tanks were choked with waste, slush and debris, obstructing the flow of flood water. This also reduced the water-absorbing and groundwater recharging capacity of the marsh.

**Measures suggested:**

- Chennai needs an integrated flood management system with proper facilities to drain excess rainwater and desilt channels to prevent floods.
- The report recommended an integrated road and street side storm water drainage network, straight cut diversion channels, macro storm water drains, check dams, barrages and anicuts as part of such a system.

**Urban floods in India- an overview:**

Urban flooding is the inundation of land or property in a built environment, particularly in more densely populated areas, caused by rainfall overwhelming the capacity of drainage systems, such as storm sewers.

- In many Indian cities, urban floods have become a frequent phenomenon in recent years.

**Unscientific urbanization leading to Urban floods:****Natural factors:**

1. Increasing downpour.
2. Cyclonic storms and thunderstorms.
3. Occurrence of high tides impeding the drainage in coastal cities.



**Anthropogenic factors:**

1. Concretization.
2. Wiping out of the wetlands.
3. Poor Water and Sewerage Management.
4. Encroachment and Illegal constructions.
5. Deforestation.

**Administrative factors:**

1. Lack of flood control measures.
2. Multiple authorities in a city but owning responsibility by none.

**Measures needed:****Structural Measures:**

1. Conservation of wetlands in urban areas like lakes, ponds, streams.
2. Construction of differential slope along sidewalks, roads to drain excess water into reservoirs.
3. Strengthening of Storm water drainage system.
4. Pre-monsoon desilting of all major drains to be completed by March 31 each year.
5. Every building in an urban area must have rainwater harvesting as an integral component of the building utility.
6. Concept of Rain Gardens to be incorporated in planning for public parks and on-site storm water management for larger colonies and sites those are to be developed.
7. Suitable interventions in the drainage system like traps, trash racks can be provided to reduce the amount of solid waste going into the storm sewers.

**Non-structural Measures:**

1. National Hydro-meteorological Network as per NDMA is needed for all urban cities in India.
2. Flood hazard assessments should be done on the basis of projected future scenarios of intensities and duration of rainfall and land use changes.
3. Better forecasting of rainfall events; timely dissemination of information to the mass- 'Now casting' alerts or real-time weather updates.
4. Restrict encroachments in natural drainage areas; clearance of river beds, proper implementation of Coastal Regulation Zone rules.
5. Provisions for flood-proofing of buildings
6. Storm water pollution control, i.e. source is controlled by imposing quality standards for wastewater and solid waste disposals in urban environments.

**Taiwan Strait:**

- The Taiwan Strait is a 110-mile-wide channel that separates mainland China from the island of Taiwan.

- It is also known as the Formosa Strait or the Tai-hai (the Tai Sea).
- The Taiwan Strait makes up part of the South China Sea, and its northern portion is linked to the East China Sea.
- The strait borders the south eastern part of China and runs along the eastern part of China's Fujian Province.

### **The burden of climate change on children born today:**

#### **Context:**

A study was recently published by Researchers on the impact of climate change on children born today.

- The study is based on data from the Inter-sectoral Impact Model Intercomparison Project (ISIMIP).

#### **How was the study carried out?**

The ISIMIP data were used alongside country-scale, life-expectancy data, population data and temperature trajectories from the Intergovernmental Panel on Climate Change (IPCC).

#### **Key findings:**

- Children born today will be hit much harder by extreme climate events than today's adults.
- During his or her lifetime, a child born in 2021 is likely to experience on average twice as many wildfires, two to three times more droughts, almost three times more river floods and crop failures and about seven times more heat waves compared to a person who is, say, 60 years old today.

#### **What needs to be done?**

Under a scenario of current "insufficient" climate policies, dangerous extreme heat wave events, which affect about 15% of the global land area today, could treble to 46% by the end of this century.

However, if:

- Countries are able to follow through with their climate policies as decided under the Paris Climate Agreement, this effect could be limited to 22%, which is just seven percentage points more than the global land area that is affected today.
- We increase climate protection from current emission reduction pledges and get in line with a 1.5-degree target; we will reduce young people's potential exposure to extreme events on average by 24% globally.

#### **What is the Inter-sectoral Impact Model Intercomparison Project (ISIMIP)?**

This is a community-driven climate-impacts modelling initiative that assesses the differential impacts of climate change.

- Initiated by the Potsdam Institute for Climate Impact Research (PIK) and the International Institute for Applied Systems Analysis (IIASA) and has since grown to involve over 100 modelling groups from around the world.

### **Punjab's desertification in 25 years:**

#### **Desertification Context:**

The Punjab Vidhan Sabha committee, constituted to study water table depletion, has recently said that the state will turn into a desert in the next 25 years if the present trend of drawing water from underground aquifers continues.

- This is a prediction that has been made before – over two decades ago, a study on water table depletion in Punjab (The State of the World Report, 1998) had projected almost the same time frame of 25 years, saying aquifers in Punjab could be depleted by 2025.

#### **How alarming is the water situation in Punjab really?**

- Out of 138 blocks in Punjab, 109 have already gone into the ‘dark’ or over -exploited zone, which means groundwater extraction is more than 100 per cent here.
- Two fall under the ‘dark/critical’ zone (groundwater extraction is 90 to 100 per cent), while five are under semi-critical (groundwater extraction 70 to 90 per cent) zone.
- This means that around 80 per cent blocks of the state have already dried up and four per cent are on the verge of it.
- Water availability at 3 to 10 meters, which needs a centrifugal pump to extract water, is the most desirable, but currently, water is available at 20 to 30 meters, or more than 30 meters down, in around 84 per cent of Punjab.

#### **Reasons for this scarcity:**

1. More water is being drawn than it is being replenished. The rate of water extraction in Punjab is 1.66 times against the rate of replenishment.
2. Because of the adoption of a faulty cropping pattern. Paddy crop hampers water recharging because of the puddling method used to prepare fields for transplanting.

#### **What needs to be done?**

Farmers must be incentivised to choose cropping patterns that require less water, and go for drip irrigation or other water management mechanisms to save our only available deeper aquifers.

#### **National Disaster Management Authority**

##### **Context:**

17th Foundation Day of National Disaster Management Authority (NDMA) was celebrated on 28 September.

##### **About NDMA:**

The National Disaster Management

- It was constituted on 27th September 2006, under the Disaster Management Act, 2005.
- NDMA is mandated to lay down the policies, plans and guidelines for Disaster Management. India envisions the development of an ethos of Prevention, Mitigation, Preparedness and Response.
- Please note that the Disaster Management Act envisaged the creation of National Disaster Management Authority (NDMA), headed by the Prime Minister, and State Disaster Management

Authorities (SDMAs) headed by respective Chief Ministers, to spearhead and implement a holistic and integrated approach to Disaster Management in India.

**Functions and Responsibilities:**

NDMA, as the apex body, is mandated to lay down the policies, plans and guidelines for Disaster Management to ensure timely and effective response to disasters.

**Towards this, it has the following responsibilities:**

- Lay down policies on disaster management;
- Approve the National Plan;
- Approve plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan;
- Lay down guidelines to be followed by the State Authorities in drawing up the State Plan;
- Lay down guidelines to be followed by the different Ministries or Departments of the Government of India for the Purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects;
- Coordinate the enforcement and implementation of the policy and plans for disaster management;
- Recommend provision of funds for the purpose of mitigation;
- Provide such support to other countries affected by major disasters as may be determined by the Central Government;
- Take such other measures for the prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with threatening disaster situations or disasters as it may consider necessary;
- Lay down broad policies and guidelines for the functioning of the National Institute of Disaster Management.

**New eel species discovered in Mumbai well:**

- A new species of swamp eel belonging to the genus *Rakthamichthys* that is endemic to India was discovered in a well in Mumbai.
- It was named *Rakthamichthys mumba*.
- Unlike other species of its genus, the mumba lacks eyes, fins and scales, has jaws equal in forward extent, different gill aperture, crescentic -shaped cephalic.
- The species differs from its congener from Western Ghats of India by the possession of jaws-projecting forward equally, when viewed laterally, absence of eyes and having more vertebrae.
- The present known habitat of the species is only the Mumbai well.

Members of the family synbranchidae are very peculiar, relict lineages of percomorphs, consisting of eel-like fishes, distributed across all countries except Antarctica. Presently, this family consists of 26 valid species and are unique among teleosts by lacking paired, median and caudal fins.

### **American bumblebee could be declared endangered**

According to US Fish and Wildlife Services, the American bumblebee population has decreased by 89% in past 20 years, and it could be declared as “endangered species”.

#### **Key Facts**

- US Fish & Wildlife Services will conduct a one-year review, after which the species would become protected under “Endangered Species Act (ESA)”.
- The ESA act provides a legal framework to safeguard endangered species from extinction.

#### **Background**

This announcement was made in the backdrop of a petition of August 2021 that was filed in support of listing made by “Center for Biological Diversity (CBD)” and Albany Law School student group named as “Bombus Pollinator Association of Law Students”.

#### **CBD take on American Bumblebee**

As per CBD, the American bumblebee has completely vanished across eight states namely Rhode Island, Maine, New Hampshire, Idaho, Vermont, North Dakota, Wyoming and Oregon in the North America. Its population has also declined by 99% in New York. In other 19 states in Southeast & Midwest, its population has declined by 50%.

#### **Why its population has declined?**

According to CBD, population of American bumblebee has decline due to habitat destruction, climate change, exposure to disease & pesticides, loss of genetic diversity along with competition with the non-native bees.

#### **About American Bumblebee**

This species is scientifically called as *Bombus pensylvanicus*. It is a threatened species of bumblebee and is a native to North America. It is also found in eastern Canada, eastern United States, and Mexico. The species live and nest in open farmland & fields. It feeds on food plants like favouring sunflowers & clovers

#### **Wildlife Week 2021**

- Wildlife Week 2021 is being observed from October 2nd to October 8th.
- This week is a sincere effort that raise awareness among people for the protection of wildlife resources.
- On the occasion, government of J&K has opened Dachigam National Park for public. To provide easy access to the park, permission will be granted using an online portal which is operated by J&K Forest and Wildlife Department.

**About Wildlife Week**

India observes Wildlife Week from October 2nd to October 8th every year with the aim of protecting India's fauna. During the week, experts conduct workshops in order to make people understand the importance of wildlife conservation. During the week, several awareness-building activities are organised across different levels in order to make people aware about wildlife.

**Why this week is celebrated?**

This week is celebrated because, wildlife plays a crucial role in maintaining the ecological balance of nature. Any harm to it can pose threat to entire ecosystem. Thus, it becomes important to preserve flora and fauna.

**Biological Hotspot**

India is a biological hotspot. It supports a number of animal species. India is home to more than 7 percent of world's biodiversity. Faunal wealth of India is also incredibly diverse. It accounts for 7.4% of the world's fauna.

**History of Wildlife Week**

First ever Wildlife Week was observed in the year 1957. Wildlife Week 2021 is the 67th edition. Wildlife Week was conceptualised by the Indian Board of Wildlife in 1952 in order to raise the awareness regarding long-term goals of protecting the wildlife across India. Initially, Wildlife Day was celebrated in 1955, but in 1957 it was upgraded as the Wildlife Week.

**Theme of Wildlife Week 2021**

Wildlife Week 2021 is being celebrated under the theme "Forests and Livelihoods: Sustaining People and Planet".

**Tiger rallies started across 51 Reserves**

- Tiger Rallies were started across 51 reserves as a part of "Wildlife Week Celebration" and "Azadi ka Amrit Mahotsav".
- In seven days, from October 2 to October 8, these rallies would cover a distance of about 7,500 km.
- Rallies would be traversing the diverse and picturesque landscapes across the country.
- Rallies were virtually kicked off in three tiger reserves namely,
  1. Biligiri Ranganathaswamy Temple (BRT) Tiger Reserve, Karnataka
  2. Navegaon Nagzira Tiger Reserve, Maharashtra and
  3. Sanjay Tiger Reserve, Madhya Pradesh.

**Guidelines on sustainable eco-tourism**

On the occasion, minister also released guidelines on sustainable eco-tourism across the forest and wildlife areas. Guidelines on field guide to monitor the Ganges & Indus River dolphins, aquatic fauna & habitat including Nagar Van guidelines were released.

**Online Portal on Wetlands**

An online portal on wetlands was also released which will act as a single-point access for all information related to such ecosystems.

**Theme of the rallies**

The rallies were kicked off with the theme “India for Tigers- A Rally on Wheels”. The rally will journey across 51 tiger reserves in 18 tiger range States. In the range states, field directors, deputy directors & associated staff of the tiger reserves will follow an assigned routes and unite at a designated focal point of celebration. Focal point of the celebration is the first nine tiger reserves that were designated during the launch of Project Tiger in 1973.

**Aim of the rally**

The rallies were started with the aim of raising awareness regarding the importance of tiger conservation. It will bring together people from different areas.

**Odisha’s initiatives to prevent Elephant electrocution**

Odisha government has allocated Rs 445.75 crore to the distribution companies in order to increase ground clearance of electrical networks with the objective of preventing Elephant electrocution.

- With the help of allocated funds, distribution companies would also replace bare conductors across elephant corridors and movement areas.
- This initiative is aimed at preventing elephant deaths because of electrocution.
- As per Energy department, 79000 interposing poles have been erected and about 2,300 circuit bare conductors have been replaced by covered ones.
- In the recent development, companies and Forest Department have been asked to interact on regular basis in a bid to achieve zero casualty of elephants.
- Officials have also been directed to involve with the local community in elephant protection and bring in scheme for rewarding the villagers, who would provide information regarding illegal hooking for poaching wild animals.

**Elephant conservation in state**

As per the Wildlife Society of Orissa (WSO), an environment pressure group working on elephant conservation, about 862 elephants have lost their lives in between April 2010 August 2021. Out of this, about 16 % accounting for 135 elephants died due to electrocution.

**Concerns associated with elephant conservation**

Elephant conservation in the state of Odisha is a challenging task because of inadequate patrolling and breakdown of supervision & monitoring by officers. This has made it easy for poachers to wipe out elephants from the state.

**Electrocution cases**

Lack of action against electricity distribution companies has resulted into multiple electrocution cases because of overhead sagging naked wires, wild boar poaching wires and electrified fences. These elephants would have been saved if companies had installed safety devices. Most recent case “killing of seven elephants in Dhenkanal district” in the year 2018 at Kamalanga because of a low height 11 KV wire.

### **Delhi: Action plan to combat Air pollution in winters**

- CM announced that, only buses and taxis coming to Delhi from other states will be converted into CNG.
- Apart from that, specific areas in the NCR region will be marked as pollution hotspots in order to create a plan for mitigation and to help fight pollution in the region.

### **Winter Pollution in Delhi**

The biggest problem that Delhi is going to face in upcoming weeks will be pollution from paddy stubble burning in states like Punjab and Haryana.

### **Action Plan**

- CM identified ten areas of focus for the season.
- Focus areas include:
  1. Measures to mitigate dust pollution & Garbage burning,
  2. Paddy straw burning & Control using Pusa Bio Decomposer,
  3. Ban on firecrackers,
  4. Installing smog towers,
  5. Monitoring pollution hotspots,
  6. Controlling vehicular pollution,
  7. Effective operations of the green war room and
  8. Green Delhi app etc.

### **Green Delhi App**

Delhi government launched “Green Delhi app” in a bid to enable citizen participation for maintaining vigilance against pollution. About 23,000 complaints have been received on the app, till date. Out of them, government has successfully resolve 93% of the complaints.

### **Green War Room**

Government is also effectively analysing fight against pollution in real time through green war room. It is a program management room, created in collaboration with University of Chicago and GDI Partners. For the operation of room, 50 new Environment Engineers have been recruited.



**Pusa Bio Decomposer**

Pusa Bio Decomposer helps in quicker stubble decompose and do away the need to set fire to the fields after harvesting crops. Delhi government is in touch with the Centre government to use Pusa Bio Decomposer.

**Indian Scientists develops New Biodegradable Polymer**

A team of Indian scientists have developed a non-toxic, environmentally friendly, biodegradable polymer using guar gum and Chitosan.

- Guar gum and Chitosan are polysaccharides that are extracted from guar beans and shells of crab & shrimps.
- Fabricated guar gum-chitosan film with high water stability, high mechanical strength, and excellent resistance against harsh environmental conditions can be used in packaging applications.

**Polysaccharide**

Polysaccharide is one of the biopolymers having high potential for use in synthesis of packaging material. But due to some drawbacks of polysaccharides, like low mechanical properties, low barrier properties and high water-solubility, they are not preferred for packaging materials.

**Guar gum-chitosan composite film**

To overcome the challenges associated with polysaccharide, the team of scientists fabricated a guar gum-chitosan composite film. It is a cross-linked polysaccharide that do not use any plasticizer with the help “solution casting method”.

**Properties of the film**

The Fabricated biopolymer composite film had high water stability, high mechanical strength as well as excellent resistance towards harsh environmental conditions. The fabricated cross-linked film is not easily soluble in water. As per scientists, it did not dissolve even after 240 hours. Furthermore, the mechanical strength is higher compared to general biopolymer. It is highly water repellent or hydrophobic because of its high contact angle of 92.8°. Water vapor permeability is low as compared to the film made only from chitosan.

**GI tagged Mihidana from West Bengal exported to Bahrain**

In order to promote indigenous & Geographical Identification (GI) tagged products, first consignment of GI tagged sweet dish Mihidana from West Bengal was exported to Bahrain.

- GI tagged Mihidana was sourced from Bardhaman, West Bengal.
- Consignment of the sweet dish Mihidana was exported by APEDA registered M/S DM Enterprises, Kolkata.
- It was imported by Aljazira Group, Bahrain.
- It is being displayed and provided for tasting purpose to the consumers at Aljazira super stores in Bahrain.

- More consignments would be exported to Bahrain during Diwali festival.

### **Export of Jaynagarer Moa to Bahrain**

To commemorate the historical legacy of century old sweet delicacy and GI certified Jaynagarer Moa, India post released a specially designed envelope in collaboration with APEDA. The Jaynagarer Moa is prepared from popped-rice ball & fresh date-palm jaggery in the Jaynagar city of West Bengal. A consignment of Jaynagar Moa was exported to Bahrain in January 2021 from Kolkata.

### **About GI Tag**

GI tag denotes specific geographical origin and possesses qualities or a reputation that are specific to that origin. GI is a form of intellectual property right (IPR) and is different from other forms of IPR on the fact that, it denotes the exclusivity of the community in a defined geography, rather than to an individual.

### **What goods can be GI tagged?**

GI tag can be issued for agricultural, natural or manufactured goods with unique quality, reputation or characteristics, unique to its geographical origin. For example, Basmati Rice, Darjeeling tea, Kanchipuram Silk, Mysore Silk, Nagaland chilli products, Hyderabad haleem, etc is sold with the GI tag and these products have premium pricing.

### **The State of Climate Services 2021: Water report**

The World Meteorological Organization (WMO) released its new report titled “The State of Climate Services 2021: Water” on October 5, 2021.

- According to WHO, climate change increases the risk of water-related hazards such as floods and droughts.
- Climate change will also increase the number of people affected by water scarcity.
- As per report, in 2018, 3.6 billion people worldwide had inadequate access to water at least one month per year.
- This number is expected to exceed five billion by 2050.
- Report also notes that, this situation is worsening as only 0.5 per cent of water on the Earth is useable and available freshwater.
- Water-related hazards have increased in past 20 years.
- Flood-related disasters have increased by 134 per cent since 2000, as compared to past two decades. However, number & duration of droughts have increased by 29 per cent during the same period.
- In Africa, about two billion people live in water-stressed countries. They suffer a lack of access for safe drinking water and sanitation.

**Drought-related Deaths**

Report also highlights that, most of the drought-related deaths occurred in Africa. Thus, a more robust end-to-end warning system is needed for drought in African region. Most of the flood-related deaths & economic losses were witnessed in Asia.

**Impact of Temperature**

According to report, increasing temperatures are resulting in global & regional precipitation changes. It will also lead to shifts in rainfall patterns as well as agricultural seasons.

**Recommendations of WMO**

WMO recommends that countries should increase investment in integrated water resources management and drought & flood early warning systems. WMO also urged countries to fill the gap in capacity of collecting data for basic hydrological variables.

**India Joins High Ambition Coalition for Nature and People**

- India Joined the coalition at ceremony held between the French and Indian governments in New Delhi.
- “High Ambition Coalition (HAC) for Nature and People” is a group of more than 70 countries which encourages the adoption of global goal to protect 30×30.

**Members of HAC**

HAC members presently comprise of a mix of countries in global north and south. Asia, Africa, European and Latin American countries are among the members of HAC. India became the first emerging economy from BRICS bloc to join the HAC.

**Biodiversity Meeting**

India’s announcement was done in the backdrop of lead up to a high-level biodiversity meeting which will be hosted by China. This virtual meeting will take place from October 11 to October 15. Meeting will discuss the key aspects of “biodiversity treaty” which is to be finalized in 2022. Global 30×30 goal is the centrepiece of biodiversity treaty.

**Background**

India’s goal to join the High Ambition Coalition for Nature and People was initiated in January 2021 in Paris at the “One Planet Summit”. On the opening of COP15, Ambassador of France to India (Mr. Emmanuel Lenain) said that on India joining the High Ambition Coalition will be a real game changer. This move will boost multilateral efforts, since India is a major player for biodiversity protection.

**Aim of the coalition**

The HAC coalition aims for promoting an international agreement in order to protect at least 30 percent of world’s land and ocean by 2030.

**Nationwide River Ranching Programme launched in Uttar Pradesh**

- The programme was launched at Brijghat, Garh Mukteshwar, Uttar Pradesh

- Along with Uttar Pradesh, other 4 states namely, Orissa, Uttarakhand, Tripura and Chhattisgarh also participated in the launch of ‘nationwide River Ranching program’.
- 3 lakhs fingerlings were ranched at 3 sites in UP, namely, Brijghat, Tigri, Meerut, Garhmukteshwar and Bijnor.
- In Uttar Pradesh, about 500 people participated in the national level launching of River Ranching program.
- 1 lakh fingerlings were ranched at Chandi Ghat, Ganga River in Haridwar district of Uttarakhand.
- 85 lakh of fingerlings were ranched at 4 sites of Tripura namely, Gomati River in Udaipur; Khowai river in Teliamura; Dhalai river in Kamalpur and Deo River in Dashamighat. About 218 participants attended the program.

### **River Ranching Programme**

River ranching programme was introduced as special activity under the ‘Pradhan Mantri Matsya Sampada Yojana (PMMSY) scheme to augment and enhance fish production and productivity by expanding, intensifying, diversifying and utilizing land & water productively.

### **Who is the implementing agency?**

National Fisheries Development Board, Hyderabad is the nodal agency under central component of the PMMSY. The board has been designated by the “Department of Fisheries, Ministry of Fisheries”.

### **What is the need of programme?**

As the human population is growing, requirement of high-quality protein & demand of fish is increasing gradually. Thus, to promote sustainable use and conservation of fishery resources in an economical and environmentally responsible manner, River Ranching Programme was launched. This programme will help in achieving sustainable fisheries, conserving biodiversity, assessing ecosystem services, reducing habitat degradation and maximizing social-economic benefits. It will also ensure the upgradation of traditional fishery, trade & social protection of Inland communities and ecosystem sustainability.

### **UN Human Rights Council recognises ‘Right to a clean environment’**

- The United Nations Human Rights Council (UNHRC) unanimously voted to recognise a clean, healthy & sustainable environment as a universal right. This right was recognised by UNHRC on October 8, 2021 in Geneva, Switzerland.
- Once the right is recognised by all, it would be the first of its kind in 70 years, ever since the Universal Declaration of Human Rights was adopted in 1948 by the UN General Assembly.

### **Right to clean environment**

Right to a clean environment was first rooted in “1972 Stockholm Declaration”.

### **Background**

This resolution was approved following a campaign led by 13000 civil society organisations & indigenous peoples' groups, 90,000 children, private sector stakeholders and the Global Alliance of National Human Rights Institutions.

### **About the UN resolution**

This resolution emphasises on “Rights to life, liberty and security” of human rights defenders who are working in environmental matters. They are referred as environmental human rights defenders. Clean-environment resolution was passed by the human rights council. The resolution also called on countries to boost their abilities of improving the environment. It was passed by 43-0. Four member states namely India, China, Japan and Russia were abstained.

### **What are the concerns of Environmental defenders?**

Environmental defenders worldwide are subject to constant physical attacks, legal actions, detentions, arrests, and smear campaigns. In 2020 alone, around 200 environmental defenders have been murdered. This the UNEP has deepened its commitment to protect and promote environmental human rights defenders in times to come.

### **United Nations Human Rights Council (UNHRC)**

UNHRC is a United Nations body that seeks to promote and protect human rights worldwide. Council comprises of 47 members and they are elected for staggered three- year terms on a regional group basis. Its headquarter is in Geneva, Switzerland.

### **Vision Plan (2021-2031) for Indian Zoos**

Ministry of Environment, Forest, and Climate Change released the “Vision Plan: 2021-2031” for Indian zoos. This plan was released during a two-day National Conference for zoo directors & veterinarians in Gujarat.

- The two-day conference was organized by Central Zoo Authority and was hosted by Sardar Patel Zoological Park, Kevadia in Gujarat.
- This Vision Plan was launched with the aim of upgrading Indian zoos to global standards.
- It also focuses on conserving local birds and animals.
- On the occasion, a coffee table book compiling 75 species from 75 zoos was also launched as a part of Azadi ka Amrit Mahotsav.

### **Mitra awards**

At the conference, Mitra awards were also presented under four categories. These four categories are- veterinarian, animal keeper or zoo frontline, outstanding contributions by zoo director or curator and biologist or educationists.

### **Vision Plan (2021-2031)**

Vision plan is a strategy to transform Indian zoos. The 10-year vision plan was released after extensive data mining & consultation with the stakeholders. The plan was adopted with the aim of giving a

direction towards ex-situ conservation approaches across India. It also mentions 10 pillars of change for Central Zoo Authority (CZA) & Indian zoos. It sets some specific targets and timelines for achieving the 'Call to Action' that will be realized in 10 years. These pillars comprise of strengthening ex situ conservation of endangered native species, management of rescued animals and optimizing animal welfare.

### **Biodiversity in India**

Biodiversity in India must be conserved for the sustainable development. India comprises of only 2.4% of the land area of the world. But accounts for 7-8% of all recorded species. It includes more than 45,000 species of plants and 91000 species of animals

### **Air Quality Early Warning System (AQEWS) enhanced**

The Indian Institute of Tropical Meteorology (IITM) has developed a new 'Decision Support System' (DSS) as well as 'Air Quality Early Warning System' (AQEWS). These systems were launched by Union Minister of State (Independent Charge) Science and Technology, Dr Jitendra Singh.

- DSS and AQEWS systems were launched for better air-quality management in Delhi- NCR region.
- IITM is an autonomous institute, working under the Ministry of Earth Sciences. It is based in Pune.
- Apart from the systems, IITM has also created a dedicated website in order to deliver quantitative information regarding the contribution of emissions from Delhi and adjoining districts to the air quality.
- Unique feature of the system comprises of providing information on contribution of biomass-burning activities in the adjoining states.

### **Air Quality Early Warning System (AQEWS)**

The system has been developed by Indian Institute of Tropical Meteorology, Pune. This system uses data of stubble burning incidents from last 15 years for predicting date and place of next burning. This data is then correlated with wind speed for predicting air pollution level for next 72 hours. AQEWS can also forecast the level of pollutants such as particulate matter (PM) 2.5, PM10, and dust, which come from sources other than stubble burning. Early warning of pollution helps in providing data and time to the authorities for responding to it in a time bound manner.

### **Components of the system**

The warning system comprises of:

1. Real time observations of air quality and details about natural aerosols like dust & particulate matter using satellite data sets.
2. Predictions of air pollutants coming from two different air quality prediction systems on the basis of state-of-the-art atmospheric chemistry transport models.
3. Providing Warning Messages, Alerts & Bulletins.

**Report: India at top in Emissions related to Crop Burning**

Climate tech start-up, Blue Sky Analytics, published its report on emissions related to crop burning. In the report, India has been ranked at the top position.

- As per report, India accounted for 13 per cent of total global emissions in the period of 2015-2020.
- Report notes a 12.2 percent contribution by India towards the cropland fire emissions in 2020 alone.
- The data highlights the new insights into recent trends in biomass fires, including emissions from crop residue and forest residue fires in India.
- For instance, data in report verifies the downward trend of crop fires between 2016 and 2019. As per report, GHG emissions due to cropland fires has reduced by 11.39 per cent in between 2016-2019.
- In between 2019-20, GHG emissions has increased by 12.8 per cent. As a result of this, India's global contribution has become 12.2 per cent.

**Blue Sky Analytics**

Blue Sky Analytics is the Indian Climate tech start-up. It was founded by an IIT alumnus. It is a part of global coalition called "Climate TRACE".

**Climate TRACE**

Climate TRACE is a global coalition that works on the mission of accelerating climate action by providing near-real-time and independent high-resolution GHG emissions data. Innovative approach followed by Climate TRACE fills critical knowledge gaps for all the countries, which also rely on patchwork system of self-reporting.

**Emission Estimates**

Emissions estimates provided by Blue Sky Analytics cover fires caused by human activities. It includes burning in forest areas to convert it into agricultural land or crop residues. It also covers fires caused by wildfire activity. It prepared report by combining multiple satellite data sources.

**Report: Africa's glaciers to disappear soon**

World Meteorological Organization (WMO) and other agency released its new report on October 19, 2021. In its report, these agencies warned that, Africa's rare glaciers are going to disappear in next two decades because of climate change.

- The report was released ahead of "U.N. climate conference" which is scheduled for October 31, 2021 in Scotland.
- As per report, 1.3 billion people of Africa remain extremely vulnerable as African continent warms more and at a faster rate than the global average, even though 54 countries in Africa contributes for less than 4% of global greenhouse gas emissions.

- Report notes that, shrinking glaciers of Mount Kenya, Mount Kilimanjaro, and the Rwenzori Mountains in Uganda are the symbol of rapid and widespread changes to come. Present retreat rates of these glaciers are higher than global average. If this continues to happen, there will be total deglaciation by 2040s.
- By 2030, around 118 million extremely poor people, or people living on less than \$1.90 a day, will be exposed to floods, drought and extreme heat in Africa.

### **Economic effects of climate change**

Estimates of economic effects of climate change vary in the African continent. However, in sub-Saharan Africa, climate change will decrease the gross domestic product by 3% by 2050. Cost of adapting to climate change in Africa will increase to \$50 billion per year by 2050.

### **Famine in Madagascar**

United Nations has warned that “climate change has resulted into famine-like conditions in Madagascar, located in Indian Ocean Island. It also notes that, South Sudan are going through the worst flooding in about 60 years

### **NITI Aayog launches Geospatial Energy Map of India**

This Geospatial Energy Map of India provides a holistic picture of all energy resources like oil & gas wells, petroleum refineries, conventional power plants, coal fields and coal blocks.

### **Use of GIS-based Energy Map of India**

- GIS mapping of energy assets will be helpful in ensuring real-time and integrated planning of energy sector in India, considering its interdependence and large geographical distribution.
- Energy markets have huge potential in bringing efficiency gains.
- Such mapping of energy assets will be helpful for all concerned stakeholders.
- It will also help in accelerating policy-making process.
- Using this, fragmented data has been brought together and will prove to be a great research instrument.

### **Who has developed this Map?**

The Geospatial Energy Map of India has been launched by NITI Aayog in collaboration with the Indian Space Research Organisation (ISRO). Energy ministries of the Government of India has also provided its support in developing this platform.

### **Significance of GIS Map**

- The GIS map will provide a holistic picture of all energy resources India, which in turn will help in visualising energy installations like conventional power plants, petroleum refineries, oil and gas wells, petroleum refineries, coal fields and coal blocks, renewable energy resource potential and district-wise data on renewable energy power plants through 27 thematic layers.



- Map will also identify and locate all primary and secondary sources of energy as well as their transportation/transmission networks in order to provide a comprehensive view of energy production and distribution in India.

### **Aim of the initiative**

This platform has been launched with the aim of integrating energy data scattered across several organizations. It will present consolidated data in visually appealing graphical manner.

### **What are Green Crackers?**

Amid the Covid-19 pandemic related situation and concerns regarding increasing pollution due to firecrackers during festive season, many states have imposed certain rules on fireworks in the year 2021.

- States have imposed either a complete or partial ban on firecracker sales.
- In these states, government has permitted the sale of ‘green crackers’ instead.

### **What are green crackers?**

‘Green crackers’ are low-emission fireworks that Supreme Court in 2017 had permitted for celebrations to a moderate level during festivals & relaxed the ‘complete ban’ on fireworks. Green crackers were researched and developed by CSIR-NEERI (Council of Scientific & Industrial Research – National Environmental Engineering Research Institute). These crackers are produced with less harmful raw materials and they suppresses the dust when they are burnt, reducing the emissions.

### **Do they contain harmful chemicals?**

Green Crackers do not comprise of harmful chemicals like arsenic, lithium, barium, and lead. They release water vapour which does not allow the dust to rise. These crackers are believed to cause 30 per cent less particulate matter pollution as compared to traditional crackers.

### **Scenario in different states**

- Rajasthan government banned the sale and use of crackers in the state. Only green crackers would be allowed and there will be restricted timing for bursting crackers during festive season.
- Delhi Pollution Control Committee has completely banned the sale and bursting of firecrackers in Delhi till January 1, 2022.
- Tamil Nadu urged the governments in Delhi, Haryana, Rajasthan, and Odisha to seriously consider the sale of green crackers in their territories.

## 5. SCIENCE & TECHNOLOGY

### 5.8 Indian Observatories becoming prime location for deep Space Studies:

India is geographically blessed with unique locations which offer views that are mesmerizing. But apart from breath-taking and eye-catching views, India is also emerging as a hot spot for astronomical studies. As per a recent study published in the Monthly Notices for Royal Astronomical Society, the Indian Astronomical Observatory (IAO) which is located in Hanle near Leh in Ladakh has become a prime site for infrared and optical astronomical studies.



#### **The Study:**

The study which was carried out by a team of researchers belonging to India as well as other countries highlighted that the quality of observable nights for different astronomical usages qualifies by the IAO of Hanle. The above mentioned different astronomical usages include photometry and spectroscopy. The researchers studied the night-time cloud cover fraction over eight high altitude observatories among which three belonged to India. The eight observatories included:

- Indian Astronomical Observatory (Hanle and Merak, Ladakh)
- Devasthal (Nainital)
- Ali Observatory in China
- South African Large Telescope in South Africa
- University of Tokyo Atacama Observatory and Paranal in Chile
- National Astronomical Observatory in Mexico

**Probing into why Indian Observatory became a prime location:**

- Before probing into the matter of why the Indian Observatory is becoming a prime location; it is important to note that deep space study requires some essential criteria. In order to conduct a deep space study, the non-interruption by the monsoon, clear night, atmospheric conditions among other factors are essential to be noted. For Indian Astronomical Observatory, most of the criteria were rather satisfying. The benefit of crystal clear nights along with minimal light pollution, background aerosol concentration, no interruption by the monsoon, extremely dry atmosphere condition, contributed in one of the promising observatory sites globally.
- As per the study, researchers found that the Indian Astronomical Observatory located in the Hanle site is as dry as the Atacama Desert located in Chile and also, it is much drier than Devasthal, Nainital location. It is fascinating to note that the site offers around 270 clear nights in a year. While Hanle offers a clear and magnificent sky for probing into the mysterious deep space studies, the best site among the eight is Paranal which is located in a high-altitude desert of Chile and this site offers 87% clear nights in a year.

**The future prospects become more clearer with clear nights:**

- “Studying the variation of atmospheric parameters from 1980 to 2020 for all sites, the researchers found decreasing trends for the cloud cover fraction over the central region of Africa, the Eurasian continent, and the American continents. They noticed an increasing trend in the maritime region as well as land regions in the Sahara Desert, the Middle East, Indian sub-continent, the Tibetan Plateau and some of the Southeast Asian islands,” the Ministry of Science & Technology said in a statement.
- The Ministry believes that the study could pave the way for the Indian government to establish more such observatories and telescopes in the vicinity of the region, therefore making it a prime location for astronomical observations.

**5.9 DigiSaksham: An Expansive program to strengthen digital know-how:**

DigiSaksham is an extension of the government’s ongoing programmes which are aimed at engaging youth for reskilling, up skilling, and skilling, which are a must in this era.

**Underlining the Key Highlights of DigiSaksham:**

- Equipping youth with technical skills: Through DigiSaksham, the 10 million active registered job seekers will be able to access the training including computing and computer science training on the National Career Service Portal. The programme is aimed to impact 3,00,000 job seekers in the first year by training them in subjects like programming languages, data analytics, software development fundamentals and advanced digital productivity.
- Various kinds of Training: Under this initiative, there will be three kinds of training including Digital Skills – Self paced learning, VILT mode training (Virtual Instructor-led) and ILT mode

training (Instructor-led). Among these as well, the ILT training, which is instructor-led training, is decided to be conducted at Model Career Centres (MCCs) and National Career Service Centres (NCSC) for SCs/STs across the country.

- **Bridging the Digital Gap:** In order to bridge the digital gap, Microsoft India has roped in the Aga Khan Rural Support Programme (AKRSP)-India, which was established in 1982 and its knowledge partner TMI e2E Academy.

### **DigiSaksham: Aiding the nation's youth**

During the launch of the event, Union Minister Bhupendra Yadav emphasised the importance of skilling in bridging India's digital divide, placing the country on the path to inclusive economic recovery and preparing India's talent to thrive in a digital future catering not only to the needs of the domestic economy but also to tap the overseas employment opportunities. The government is putting efforts by initiating various programmes, in close collaboration with the private sector to accelerate the transition of India to the Digital Economy. Apart from focusing on a broader scale, this initiative gives priority to the job-seekers who belong to communities including socially and economically backward classes, people who have lost jobs due to COVID-19.

### **Know all about National Career Service:**

National Career Service or NCS under the Ministry of Labour and Employment is a mission mode project to provide a variety of employment-related services like job matching, career counselling, vocational guidance, information on skill development courses, apprenticeship, internships etc. The services coming under NCS were launched in 2015 by Prime Minister Narendra Modi. The highlight of the Service is that it is free of cost for all stakeholders including jobseekers, employers, training providers and placement organizations.

### **5.10 NAPRE unveiled, to eliminate rabies by 2030:**

The World along with India observed World Rabies Day on September 28. Due to the rapid increase in animal-induced diseases, such as the Covid-19, the focus is being given on taking steps to reduce health risks caused by animals.

National Action Plan for Dog Mediated Rabies Elimination by 2030 (NAPRE) was unveiled on September 28 by Union Minister for Health and Family Welfare, Mansukh Mandaviya and Union Minister of Fisheries, Animal Husbandry and Dairying, Parshottam Rupala. The action plans have been introduced as a roadmap to eliminate rabies by 2030.

### **National Action Plan for dog Mediated Rabies Elimination-**

- The National Action Plan for dog Mediated Rabies Elimination (NAPRE) has been drafted by the National Centre for Disease Control (NCDC) in consultation with the Ministry of Fisheries, Animal Husbandry, and Dairying.

- NAPRE's approach for rabies elimination is based on recommendations of various international agencies such as WHO, OIE, and the Global Alliance of Rabies Control (GARC). It is based on 5 major pillars – political will, sustained funding, intersectoral planning, coordination and review, community planning, and operational research.
- The action plan aims to reduce human deaths due to dog-mediated rabies to zero by 2030 through sustained mass dog vaccination and appropriate post-exposure treatment. The vital elements of the strategy are prevention, promotion, and partnership.
  - Prevention: Introduction of cost-effective public health intervention techniques to improve accessibility, affordability, and availability of post-exposure prophylaxis to all people in need.
  - Promotion: Improve understanding of rabies through advocacy, awareness, education, and operational research.
  - Partnership: Provide coordinated support for the anti-rabies drive with the involvement of community, urban and rural civil society, government, private sectors, and international partners.

Among the various strategies, one is to use the more familiar term 'Hadakwa' in popularizing the activities to be taken up under the Plan. Rabies is popularly known as Hadakwa in rural India.

### **Rabies- Status in India**

- Rabies is a vaccine-preventable viral disease that occurs in more than 150 countries and territories. Dogs are the primary source of the vast majority of human rabies deaths, contributing up to 99% of all rabies transmissions to humans.
- The disease is preventable, however low awareness among people results in fatalities. According to the World Health Organization (WHO), a dog bite claims the lives of more than 55,000 people each year, mostly in Asia and Africa.
- India is endemic for rabies with the exception of Andaman, Nicobar, and Lakshadweep Islands. It accounts for 36% of the world's deaths. As per available information, rabies causes 18,000 to 20,000 deaths every year. Further, about 30-60% of reported rabies cases and deaths in India occur in children under the age of 15 years as bites that occur in children often go unrecognized and unreported. The deaths due to suspected rabies as reported by 30 out of 36 States and UTs during 2017 were 593.

### **Rabies is preventable**

- Call it 'Hadakwa' or dog bite, Rabies is fatal but preventable. Death by rabies in human beings is 100% preventable and requires prompt and appropriate medical care. It also requires creating awareness among the people regarding the disease.
- There is a difference between vaccine and medicine with regard to Rabies. Many people mistake the vaccine, a precautionary step with medicine, a curative solution after the onset of the disease.

Although each rabies death is preventable by vaccine, there are no medicines once the disease develops in a human. Hence, the importance of the vaccine becomes all the more important.

### **Rabies: A notifiable disease?**

Unlike other diseases, for instance, Tuberculosis, it is not a notified disease in India. However, Union Health Minister Mansukh Mandaviya has urged all the States and Union Territories to make rabies a notifiable disease. Notifying or reporting rabies cases can help in preventing and managing the disease. Among the various strategies to prevent rabies in people, vaccinating dogs is the most cost-effective strategy.

### **Importance/ Need of eliminating rabies**

- With the recent challenges posed to life and the economy around due to the Covid-19 pandemic, the government wants to leave no stone unturned to ensure the health safety of the people. Furthermore, two-thirds of all present diseases have their origin in animals. The national action plan is focused on reducing and preventing human diseases caused due to human-animal interaction.
- Speaking on the matter, the Health Minister said, “Man is not an isolated animal and acquires diseases from animals that are also nestled in their environment. Outside of human purview, animals fight and amongst each other enabling viral transmission. Only a holistic approach to health keeping in mind human-animal interaction and their broader interaction with the environment can help alleviate such challenges.”
- He further cautioned that environmental factors like rainfall, heat-wave can also contribute to the trajectory of the pathogen and the disease which calls for more research and greater awareness in this area.
- Contracting the disease is not only a threat health-wise, but its impact can also be seen on the family, livelihood, and economy of the household and the country at large.
- “Zoonotic diseases like Rabies claim the lives of people in their prime denying the family of their earning member,” Union Health Minister stated.
- The National Council of Science Museums (NCSM) under the Ministry of Culture has signed a Memorandum of Understanding (MoU) with the Council of Scientific and Industrial Research (CSIR). The MoU seeks to integrate culture with science.

### **Setting Up of Science Museums:**

- Under the MoU, science museums will be set up at select CSIR laboratories. The setting up of science museums will add to the popularity of science education, promote scientific curiosity and awareness among the common people across all sections of society.
- Union Culture Minister, G Kishan Reddy said that the MoU will be the endeavour to fulfil the 5Cs of the 21st Century, i.e., critical thinking, creativity, collaboration, curiosity, and communication.

**Purpose of MoU**

- The Government has been taking initiatives for the development of a culture of science in the country. Events like the pandemic have only stressed the need to be equipped with science and technology and create awareness of society for science and scientific thinking.
- India is promoting experience-based learning. Dr. Jitendra Singh reiterated that science-based, rational and progressive thinking should form the basis for development and to strengthen a science-based approach.

**The MoU aims to achieve the following;**

- 1.) To create a new chapter in the history of science communication and dissemination.
- 2.) MoU will connect NCSM and CSIR and its laboratories.
- 3.) The MoU also aims to promote a culture of science, technology, and innovation in the country

**Virtual labs**

- CSIR in partnership with IIT-Bombay is setting up virtual labs for school students. Prime Minister Narendra Modi in the CSIR Society Meeting in 2020 has expressed the desire for virtual labs for school students.
- Now, the collaboration of CSIR and NCSM will bring a museum within National Physical Laboratory (NPL) that would showcase the technologies and interventions developed by CSIR over the past eight decades. The museums will encourage students and youth to engage in innovation and technology.

**About CSIR & NCSM**

- The Council of Scientific and Industrial Research (CSIR) is one of the largest and most diversified publicly funded scientific and industrial research organizations in the world. It is known for its R&D knowledge base in diverse science and technology areas.
- CSIR has a network of 37 national laboratories, 39 outreach centres, 3 innovation complexes, and five units with a pan-India presence.
- On the other hand, the National Council of Science Museums (NCSM) under the Ministry of Culture has the largest network of science centres/ museums in the World.
- NCSM was formed on April 4, 1978. and presently, it administers 25 science centres/ museums spread across India. Science City, Kolkata, Birla Industrial and Technological Museum (BITM), Kolkata, Nehru Science Centre, Mumbai, Visvesvaraya Industrial and Technological Museum (VITM), Bangalore, and National Science Centre, Delhi are national level centres of NCSM.

**5.11 India develops organic semiconductor based Large-Scale Reactor to Produce Hydrogen:**

- India has set the target to install 450 GW of renewable energy capacity by 2030. According to Renewable Energy Country Attractiveness index 2018, Indian renewable energy sector is the

fourth most attractive renewable energy market in the world. India was ranked fourth in wind power, fifth in solar power and fourth in renewable power installed capacity, as of 2020.



- The Indian Government promotes renewable power through a number of policies such as National Solar Mission, the National Wind-Solar Hybrid policy and the National Renewable Energy Act. The government has set a target of 175GW of installed renewable power capacity to be accomplished by March 2022, which includes 100GW from solar, 60GW from wind, 10GW from biopower and 5GW from small hydropower.
- In the Union Budget 2021-2022, the Indian Government provided an additional funding of Rs10 bn and Rs15 bn to Solar Energy Corporation of India Limited (SECI) and Indian Renewable Energy Development Agency (IREDA), respectively.
- Installed renewable power generation capacity has gained pace over the past few years, posting a compound annual growth rate (CAGR) of 17.33% between FY16-20. Installed renewable power-generation capacity has increased at a fast pace over the past few years, posting a CAGR of 15.51% between FY16 and FY21. India had 94.4 GW of renewable energy capacity in FY21.
- On 12th August 2021, the total installed renewable energy capacity in India, excluding large hydro, had crossed the mile-stone of 100 GW. Another 4.52 GW are to be added by 31 October 2021.
- To achieve the target of 450 GW of renewable energy by 2030, researchers are also working towards renewable energy solutions.

### **Enter Hydrogen with the Large-Scale Reactor**

- According to a release by Science and Technology Ministry, one of the most economical ways to achieve the target of generating renewable energy is to produce hydrogen on a large scale through photo catalytic water splitting.
- And this feat is achieved by Dr Kamalakannan Kailasam and his team, including Professor Ashok K. Ganguli, Dr Vivek Bagchi, Dr Sanyasinaidu Boddu, Dr Prakash P.N., and Dr Menaka Jha from the Institute of Nano Science and Technology (INST), Mohali, an autonomous institute under the ministry of Science and Technology.



- They have developed a prototype reactor that operates under natural sunlight to produce hydrogen at a larger scale (around 6.1 L in eight hours). They have used earth-abundant chemical, carbon nitrides, as a catalyst for the purpose, the release said.
- The process had been attempted many times by many researchers using complex metal Oxide/Nitride/Sulphide-based heterogeneous systems but was very difficult to reproduce in large quantities.
- "The INST team employed the low-cost organic semiconductor in Carbon Nitrides, which can be prepared using cheaper precursors like urea and melamine at ease in a kilogram scale," the release said.
- This work is supported by the DST Nano Mission NATDP project. A paper about this work has been published in the 'Journal of Cleaner Production' recently, and the team is in the process of obtaining a patent for the technology.
- "The stability and chemical flexibility of having different organic groups in Carbon Nitrides triggered us to work on these cost-effective organic semiconductor materials for sustainable hydrogen production," Kamalakannan said.
- The INST team started from the lab-scale process to the bulk scale of developing the photocatalyst and hydrogen production through a large prototype reactor.
- The reactor is about 1-metre square, and the photocatalyst was coated in the form of panels, where water flow is maintained. Upon natural sunlight irradiation, hydrogen production occurs and is quantified through gas chromatography. The team is in the process of optimising the hydrogen production with effective sunlight hours in addition to the purity of the hydrogen, and so on, to hyphenate with the fuel cells.
- Hydrogen generated in this manner can be used in many forms like electricity generation through fuel cells in remote tribal areas, hydrogen stoves, and powering small gadgets, to mention a few. Eventually, it can power transformers and e-vehicles, which are long-term research goals under progress.
- India has recently launched a Hydrogen Mission and aims to not just fulfill its own requirement but also export it in near future.

#### **5.12 WHO recommends ground-breaking RTS,S malaria vaccine for Children**

- The World Health Organisation in an official statement on 6 October called for widespread use of the RTS,S/AS01 (RTS,S) malaria vaccine among children.
- The groundbreaking Malaria vaccine, (RTS,S, has been approved for children in sub-Saharan Africa & other regions with moderate to high P. falciparum malaria transmission.

- The recommendation of WHO is based on results from an ongoing pilot programme in Ghana, Kenya and Malawi that has reached more than 800 000 children since 2019.

### **About RTS,S vaccine**

- The vaccine, RTS,S, or Mosquirix, has been developed by British drugmaker Glaxo SmithKline.
- This malaria vaccine has been under research by GSK for 30 years and was developed through a partnership with PATH, with support from a network of African research centres.
- As for the funding, the Bill & Melinda Gates Foundation provided catalytic funds for late-stage development of RTS,S between 2001 and 2015. Financing for the pilot programme was generated through a collaboration among three key global health funding bodies, that is, Gavi, the Vaccine Alliance; the Global Fund to Fight AIDS, Tuberculosis and Malaria; and Unitaid.

### **Fatality of Malaria Disease**

- *P. falciparum* is the most common malaria-causing parasite found in female *Anopheles* mosquitoes. A WHO report says that over 99 percent of all malaria cases in Africa, and about 50 per cent in south-east Asia are caused by this species.
- In Fact, Malaria is considered to be a primary cause of childhood illness and death in sub-Saharan Africa wherein more than 260,000 African children under the age of five die from malaria annually.
- The estimated number of malaria deaths stood at 409,000 in 2019 with approx. 229 million cases of malaria worldwide. According to WHO, India had an estimated 5.6 million cases of malaria in 2019.
- Still, India has made considerable progress in reducing its malaria burden as per The World Malaria Report (WMR) 2020 released by WHO, which gives the estimated cases for malaria across the world.
- India was the only high endemic country which reported a decline of 17.6% in 2019 as compared to 2018. In 2020, as many as 116 districts in India reported zero malaria cases.

### **Key findings of the malaria vaccine pilots**

- The findings of the RTS,S, malaria vaccine pilots implemented under the leadership of the Ministries of Health of Ghana, Kenya and Malawi include:
  1. The vaccine has a favorable safety profile wherein “more than 2.3 million doses of the vaccine have been administered in 3 African countries”.
  2. Cost-effective: Who estimates that the vaccine is cost effective in areas of moderate to high malaria transmission.

3. The WHO findings suggest that in areas where the vaccine has been introduced, there have been no decrease in the use of insecticide-treated nets, uptake of other childhood vaccinations or health seeking behavior for febrile illness.
- The Malaria Vaccine Implementation Programme (MVIP), has been generating evidence and experience on the feasibility, impact and safety of the RTS,S malaria vaccine in real-life.
- Further, the pilot programme for RTS,S malaria vaccine will continue in the 3 pilot countries (Ghana, Kenya and Malawi) to understand the added value of the 4th vaccine dose.

### **5.13 Cyber Surakshit Bharat and Cyber Surakshit World:**

- According to the recent National Crime Records Bureau (NCRB) report on crime in India 2020, cases of cyber crime recorded an 11.8% increase in 2020, whereas the rates of most of the other serious crimes fell in the same period.
- Several states in India have set up dedicated units to deal with cyber crimes. The union home ministry has a dedicated portal for reporting cyber crime —cybercrime.gov.in. Close to 200,000 complaints have been lodged since the portal was launched in January 2020.
- In fact, the cyber frauds have increased in several countries during the pandemic.
- Globally, the situation is much grimmer. The world is reeling against the barrage of ransomware attacks. Many times criminal hackers are suspected to live and work in adversarial nations, thus insulating themselves from penal actions. This makes it a “shared threat” for the comity of nations.
- This has pushed several countries to plan a summit of “like-minded nations”.
- According to a White House announcement-“India is among the four countries that have volunteered to organise and lead specific thematic discussions at the first-of-its-kind international meeting to counter ransom ware convened by the Biden administration that will chalk out a four-part strategy to address the challenges posed in the cyber world”.
- The proposed meet is expected to be joined by ministers and senior officials from over 30 countries and the European Union to accelerate cooperation to counter ransom ware.
- The fact sheet published by the White House for the event reads -“Ransom ware payments reached over \$400 million globally in 2020, and topped \$81 million in the first quarter of 2021, illustrating the financially driven nature of these activities”.

#### **The four strategies to neutralise the ransom ware threat for discussions are:-**

1. Disrupt Ransom ware Infrastructure and Actors.
2. Bolster Resilience to Withstand Ransom ware Attacks.
3. Address the Abuse of Virtual Currency to Launder Ransom Payments.
4. Leverage International Cooperation to Disrupt the Ransom ware Ecosystem and Address Safe Harbors for Ransom ware Criminals.

- India, along with Australia, Germany and UK has volunteered to lead the discussions on particular topics. India will be tackling resilience, Austria, disruption, the UK will anchor virtual currency and Germany will helm diplomacy.
- Besides these four, Brazil, Bulgaria, Canada, Czech Republic, Dominican Republic, Estonia, the EU, France, Ireland, Israel, Italy, Japan, Kenya, Lithuania, Mexico, the Netherlands, New Zealand, Nigeria, Poland, the Republic of Korea, Romania, Singapore, South Africa, Sweden, Switzerland, Ukraine and the UAE will join the meeting.
- Countering this threat requires a galvanised global political will. So, this meet has the potential to emerge as a platform as G7 or North Atlantic Treaty Organisation (NATO) , or Financial Action Task Force (FATF), among others.

### **Challenges**

- It is not as simple as it sounds. There is already a Europe-led Budapest Convention on cyber security, touted as the “first international treaty on crimes committed via the Internet and other computer networks, dealing particularly with infringements of copyright, computer-related fraud, child pornography and violations of network security”. It also contains a series of powers and procedures such as the search of computer networks and interception. But there are serious apprehensions as well. India maintained its status as a non-member of the Budapest Convention, as there is hesitation that data sharing with foreign law enforcement agencies infringes on national sovereignty of India.
- With several countries accusing each other of being responsible for cyberattacks, constructing a global order on cyber security is not that easy.
- Recently, in June this year, a ransom ware assault shut down the US-based meat plants of the world’s largest meatpacker-JBS. Weeks before, the largest US fuel pipeline, the East Coast’s Colonial Pipeline, was targeted by a cybercrime group.
- So, not only the governments and national defence but also the critical infrastructures, in any sector are under the threat.

### **Digital India & cyber security**

- With India rapidly adopting digital activities and digitized platforms, it is but natural for Digital India to be on high alert. India also faces tough cyber-attacks from some hostile countries including immediate neighbours to countries as far as those in Europe.
- On March 23, 2021, the Union Home Ministry informed the Parliament that cyber-attacks have risen exponentially, last year in the country, from 394,499 recorded in 2019, to 1,158,208, citing the data from Computer Emergency Response Team (CERT-In). Simultaneously, India needs to be ahead of the curve.

- Government of India has taken far reaching steps to thwart threats by enabling multi-layer structure by enabling & investing in agencies like MeitY, CERT-In, NCIIPC, NIC, NAT grid and Security Operations in critical infrastructure & segments.
- MeitY has already launched the Cyber Surakshit Bharat Program to strengthen Cyber security in India. It was launched in association with the National e-Governance Division (NeGD) and industry partners. Cyber Surakshit Bharat is the first public-private partnership (PPP) of its kind and will leverage the expertise of the IT industry in cyber security. The founding partners include leading IT companies such as Microsoft, Intel, WIPRO, Redhat and Dimension Data. Its knowledge partners include Cert-In, NIC, NASSCOM and FIDO Alliance and premier consultancy firms Deloitte and EY.

#### **5.14 NITI Aayog, ISRO unveil Geospatial ‘Energy Map of India’ in a bid to boost policy development:**

- To bring a holistic picture of all energy resources of India at one place, the policy think tank of the Government of India, NITI Aayog along with the Indian Space Research Organisation (ISRO) has launched a comprehensive Geographic Information System (GIS) ‘Energy Map of India’ with the support of Energy Ministry of India.
- The Geospatial Energy Map of India was launched by Dr Rajiv Kumar (Vice Chairman, NITI Aayog) during an event that also witnessed the presence of Dr V K Saraswat (Member, NITI Aayog), and Amitabh Kant (CEO, NITI Aayog) and Dr K Sivan, Chairman ISRO & Secretary Department of Space.
- Addressing the event, the CEO of Niti Aayog Amitabh Kant said, “Partnership with ISRO shows our ability to deliver unique results through collaboration. This applies in great measure to GIS.”
- Vice-Chairman, Niti Aayog Rajiv Kumar also mentioned that fragmented data has been brought together. Geospatial Energy Map can be a great research instrument. This will add to the bouquet of efforts by NITI Aayog to improve data availability in the energy sector.

#### **Decoding the relevance of ‘Energy Map of India’**

- The joint-endeavour of NITI Aayog & ISRO, Geospatial Energy Map is aimed at enabling a holistic, comprehensive information system to aid the formulation & evaluation of policies - for an evidence-led energy sector.
- The GIS map provides a comprehensive picture of all energy resources of India, which enables visualisation of energy installations such as oil and gas wells, conventional power plants, petroleum refineries, coal fields and coal blocks, district-wise data on renewable energy power plants among others through 27 thematic layers.
- The 27 layers from multiple sources will not only benefit policy development planning but also aid investment guidance for financial institutions, disaster management and emergency response.

**The pilot example of liberalised geospatial sector**

- The GIS Energy Map identifies and locates all primary and secondary sources of energy and their transportation/transmission networks to provide an inclusive view of energy production and distribution in India. It is the first such example of the liberalisation of the geospatial sector.
- The GIS Energy Map will provide inputs for formulating and evaluating policies, assisting not only Energy Ministries and Departments in policy formulation but also encouraging private sector participation in the energy sector.
- India has opened up various aspects of energy exploitation (generation/ conversion/ transmission/ consumption) to the private sector as energy markets have immense potential to bring in efficiency gains.

**Pivot to policymaking**

- GIS Energy Map is a unique effort aimed at bringing scattered energy data across multiple organizations in one place. The Energy Map showcases consolidated, visually appealing and graphical energy maps through the latest advancements in web-GIS technology and open-source software. Thus, the Geospatial Energy Map of India will be useful in planning and making investment decisions. It will also aid in disaster management using available energy assets.
- Notably, GIS-based mapping of energy assets will be advantageous to India and it will help in accelerating the policy-making process.



LECTURE HALL - 1



LIBRARY



LECTURE HALL- 2



CANTEEN



LECTURE HALL - 3

MENTORING ROOM



A Monthly Magazine from

**EXCEL CIVILS ACADEMY**

NTR Bhavan, Rd. No. 2, Banjara Hills, Hyderabad.

Contact: 91004 33442, 91004 33445

[www.excelacademy.com](http://www.excelacademy.com)