



# PIB, YOJANA, KURUKSHETRA COMPILATION

JUNE 2021

# PIB

## General Studies II

1. Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY).
2. Guidelines for Other Service Providers (OSP).
3. Tax Inspectors Without Borders (TIWB).
4. Amendment in Food security (Assistance to State Government Rules) 2015.
5. Proposed Amendments to the Consumer Protection (E-commerce) Rules, 2020.
6. Waiver of Inter-State Transmission system (ISTS) Charges.
7. Biotech KISAN Programme.
8. General Elections 2019 - An Atlas.
9. Indian Certification of Medical Devices (ICMED) Plus Scheme.
10. Sub-Mission on Agricultural Mechanization (SMAM).
11. PM e-VIDYA.
12. Surakshit Hum Surakshit Tum Abhiyaan.

## General Studies III

1. River runoff, glacier melt and seasonality of flow in rivers projected to increase in future.
2. Green Hydrogen Summit.
3. Covid Severity Score (CSS) Software.
4. Climate change to increase sea level in Lakshadweep Islands.
5. Desertification and Land Degradation Atlas of India.
6. Cold desert.
7. Novel technique could help detect tropical cyclones.

## Foreign Relations

### Short Liners

# GENERAL STUDIES PAPER II

## Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY)

### Why in News

- The Union Cabinet has approved allocation of additional foodgrain under Pradhan MantriGaribKalyanYojana (Phase IV) – for another period of 5 months i.e. July to November, 2021 @ 5 kg per person per month free of cost for maximum 81.35 Crore beneficiaries covered under National Food Security Act (NFSA) (Antyodaya Anna Yojana and Priority Households) including those covered under Direct Benefit Transfer (DBT).
- This additional free of cost allocation of food grains will be over and above the regular monthly food grains allocated for beneficiaries covered under the NFSA.
  - The entire cost of this additional allocation under PM-GKAY, including the expenditure on intra state transportation, dealers' margin etc., will be borne by Government of India without any sharing by States/UTs.

### About PM-GKAY

- In 2020, Government of India had announced the “Pradhan MantriGaribKalyan Anna Yojana” (PM-GKAY) for all beneficiaries covered under the National Food Security Act, 2013 (NFSA) as part of the pro-poor PM Garib Kalyan Package for the period April-November, 2020.
- Around 80 Crore NFSA beneficiaries were allocated additional 5 kg of food grains (Wheat or Rice), free of cost for a period of 8 months (April-November 2020), thereby ensuring food security of poor/vulnerable beneficiaries/households in the wake of economic disruptions caused by the COVID-19 outbreak in the country.
- Under PM-GKAY2020, (April - November 2020), a total of about 321 Lakh MT food grains was allocated by the Department to all States/UTs, about 305 Lakh MT food grains lifted by States/UTs and a total of about 298 LMT of food grains (i.e. around 93% of allocated quantity) was distributed all over the country.
- In 2021, owing to the on-going severe COVID-19 pandemic across the country and the economic disruptions in its wake, Government of India had announced to implement the “Pradhan Mantri Garib Kalyan Anna Yojana”(PM-GKAY) for a period of two months i.e., May 2021 and June 2021 at an estimated expenditure of about Rs. 26,602 Crore, on the same lines as PMGKAY 2020.

### Way Forward

- The Food Ministry will decide on the allocation of wheat and rice.
- It may also decide on the extension of the lifting/distribution period under Phase III and Phase IV of the PMGKAY as per operational requirements, arising out of adverse weather conditions like monsoon, snowfall, etc. and supply chain and COVID-induced constraints, according to the statement.

## Guidelines for Other Service Providers (OSP)

### Why in News

- Shri Ravi Shankar Prasad, Union Minister for Electronics & Information Technology, Communications and Law & Justice, announced that Department of Telecommunication has further liberalized the guidelines for Other Service Providers (OSPs).

### Background

- An Other Service Provider is a company that provides applications services that entail IT enabled services like Tele-Banking, Tele-Marketing, Tele-medicine and a plethora of others.
- These entities are business process outsourcing (BPO) organisations giving Voice based services, in India and abroad.
  - The Guidelines issued today further liberalized the special dispensation given to OSPs in addition to the major measures already announced and implemented in November, 2020.

### Earlier Guidelines

- Data related OSPs were totally taken out of ambit of any regulation
- No Bank Guarantees
- No requirement of static IP

- No requirement of reporting to the DoT
- No requirement of publication of Network Diagram
- No penalties
- Made Work from Anywhere a reality.

### Main Features of the Present Guideline

- Distinction between Domestic and International OSPs has been removed.*
  - A BPO centre with common Telecom resources will now be able to serve customers located worldwide including in India.
- EPABX (Electronic Private Automatic Branch Exchange) of the OSP can be located anywhere in the world. OSPs apart from utilising EPABX services of the Telecom Service Providers can also locate their EPABX at third Party Data Centres in India.*
- With the removal of the distinction between Domestic and International OSP centres, the interconnectivity between all types of OSP centres is now permitted.
- Remote Agents of OSP can now connect directly with the Centralised EPABX/EPABX of the OSP/ EPABX of the customer using any technology including Broadband over wireline/ wireless.*
- No restriction for data interconnectivity* between any OSP centres of same company or group company or any unrelated company.
- It may be recalled that DoT has already exempted Data Based Services from the OSP regulations. In addition, the regulations exempted OSPs from requirement of any registration. Also, no Bank Guarantees were to be furnished. Work from Home and Work from Anywhere was also permitted.
- Penalties for violations were removed altogether reaffirming the trust Government has in business.*
- Further liberalization of Guidelines today will provide a big fillip for growth of OSP industry in India. This will create immense opportunities, income and employment in India.

## Tax Inspectors without Borders (TIWB)

### Why in News

- Tax Inspectors Without Borders (TIWB), a joint initiative of the United Nations Development Programme (UNDP) and the Organisation for Economic Cooperation and Development (OECD), launched its programme in Bhutan.
  - India was chosen as the Partner Jurisdiction and has provided the Tax Expert for this programme.

### About the Programme

- It is a joint initiative of the United Nations Development Programme (UNDP) and the Organisation for Economic Cooperation and Development (OECD).
- The programme has been launched in Bhutan with India as the Partner Jurisdiction.
- India has provided the Tax Expert for this programme.
- The focus of the programme will be in the area of International Taxation and Transfer Pricing.

### Objective

- *The objective of the TIWB Initiative is to enable sharing of tax audit knowledge* and skills with tax administrations in developing countries through a targeted, real time “learning by doing” approach.
- Selected experts will work with local tax officials directly on current audits and audit-related issues concerning international tax matters and general audit practices relevant for specific cases.

### Conclusion

- This programme is expected to be of about 24 months’ duration through which India in collaboration with the UNDP and the TIWB Secretariat aims to aid Bhutan in strengthening its tax administration by transferring technical know-how and skills to its tax auditors, and through sharing of best audit practices.

## Amendment in Food security (Assistance to State Government Rules) 2015

### Why in News

- Department of Food & Public Distribution has issued a notification on 18th June, 2021 to ensure right quantity to beneficiaries in distribution of subsidized food grains as per their entitlement under the National Food Security Act (NFSA), 2013.

### Amendments

- In order to incentivise States who are operating their **ePoS devices** in a judicious manner and are able to generate savings from the additional margin of Rs.17.00 per quintal provided to them, and to take forward the reform process for improving transparency in operations of the **Targeted Public Distribution System under NFSA, Rule 7 in sub-rule (2) of Food security (Assistance to State Government Rules) 2015** has been amended with effect from 18th June, 2021,
  - so that any savings if accrued by any State/Union Territory from the additional margin provided towards the cost of purchase, operation and maintenance of the point of sale device, its running expenses and incentive for its use, can henceforth be utilised for purchase, operations and maintenance of electronic weighing scales and their integration with the point of sale devices.
  - This would encourage other States to generate savings through judicious use of ePoS devices.

### Reasons and Expected Outcomes

- This amendment is an attempt to take forward the reform process envisaged under Section 12 of the Act, through improving transparency of operations of the Targeted Public Distribution System under NFSA.
- While distribution through ePoS devices ensures that subsidised foodgrains are provided to the rightful beneficiary through biometric authentication, integration of ePoS devices with electronic weighing scales would ensure that the beneficiary is given the right quantity of foodgrains by the **Fair Price Shop dealer** as per his entitlement.

### National Food Security Act

- National Food Security Act provides for reforms in the Targeted Public Distribution System through application of information and communication technology tools including end-to-end computerization to ensure transparent recording of transactions at all levels, and to prevent diversion and leveraging "Aadhaar" for unique identification, with biometric information of entitled beneficiaries for proper targeting of benefits under the Act.

### Food security (Assistance to State Government Rules) 2015

- It was notified in August 2015, provides for additional margin to Fair Price Shop (FPS) Dealers for sale through electronic point of sale devices (ePoS) as an incentive to ensure transparent recording of transactions at all levels.
- Accordingly, the scheme "**Assistance to State agencies for intra-State movement of foodgrains and FPS dealers margin under NFSA**" provides for additional Margin of Rs.17.00 per quintal to all State Governments/Union Territories towards the cost of purchase, operation and maintenance of the point of sale device, its running expenses and incentive for its use.
- The additional margin is payable for the fair price shop which has installed a point-of-sale device and shall be limited to the transactions made through it.

## Proposed Amendments to the Consumer Protection (E-commerce) Rules, 2020

### Why in News

- For the purposes of preventing unfair trade practices in e-commerce, the Central Government had notified the Consumer Protection (E-Commerce) Rules, 2020 with effect from 23 July 2020.
  - However, since the notification of these rules, the Government has received several representations from aggrieved consumers, traders and associations complaining against widespread cheating and unfair trade practices being observed in the e-commerce ecosystem.

## Background Issues

- Prevalence of such unfortunate incidents has negatively impacted the consumer and business sentiment in the market, causing immense distress and anguish to many.
  - It was observed that there was an evident lack of regulatory oversight in e-commerce which required some urgent action.
  - Moreover, the rapid growth of e-commerce platforms has also brought into the purview the unfair trade practices of the marketplace e-commerce entities engaging in manipulating search result to promote certain sellers, preferential treatment to some sellers, indirectly operating the sellers on their platform, impinging the free choice of consumers, selling goods close to expiration etc.
- Additionally, conventional flash sales by third party sellers are not banned on e-commerce platform.
  - But, certain e-commerce entities are engaging in limiting consumer choice by indulging in “back to back” or “flash” sales wherein one seller selling on platform does not carry any inventory or order fulfilment capability but merely places a “flash or back to back” order with another seller controlled by platform.
  - This prevents a level playing field and ultimately limits customer choice and increases prices.
- To protect the interests of consumers, prevent their exploitation and encourage free and fair competition in the market, the Government of India is sharing a draft of the proposed amendments to the Consumer Protection (E-commerce) Rules, 2020.
  - The proposed amendments aim to bring transparency in the e-commerce platforms and further strengthen the regulatory regime to curb the prevalent unfair trade practices.

## Amendments Proposed :The proposed amendments are as follows

- To ensure compliance of the Consumer Protection Act, 2019 and Rules, appointment of *Chief Compliance Officer, a nodal contact person for 24x7 coordination with law enforcement agencies*, officers to ensure compliance to their orders and Resident Grievance Officer for redressing of the grievances of the consumers on the e-commerce platform, has been proposed.
  - This would ensure effective compliance with the provisions of the Act and Rules and also strengthen the grievance redressal mechanism on e-commerce entities.
- Putting in place a framework for registration of every e-commerce entity with the Department for Promotion of Industry and Internal Trade (DPIIT) for allotment of registration number which shall be displayed prominently on website as well as invoice of every order placed the e-commerce entity.
  - Registration of e-commerce entities would help create a database of genuine e-commerce entities and ensure that the consumers are able to verify the genuineness of an e-commerce entity before transacting through their platform.
- **To protect the interests of consumers, mis-selling has been prohibited** i.e selling goods and services entities selling goods or services by deliberate misrepresentation of information by such entities about such goods or services.
- **To ensure that consumers are aware about the expiry date of the products** they are buying on the e-commerce platform all sellers on marketplace e-commerce entities and all inventory e-commerce entities to provide best before or use before date to enable consumers to make an informed purchase decision.
- **To ensure that the domestic manufacturers and suppliers get a fair and equal treatment on the e-commerce platform** it has been provided that where an e-commerce entity offers imported goods or services, it shall incorporate a filter mechanism to identify goods based on country of origin and suggest alternatives to ensure fair opportunity to domestic goods.
- To ensure that consumers are not adversely affected in the event where a seller fails to deliver the goods or services due to negligent conduct by such seller in fulfilling the duties and liabilities in the manner as prescribed by the marketplace e-commerce entity, provisions of Fall-back liability for every marketplace e-commerce entity have been provided.

## Waiver of Inter-State Transmission system (ISTS) Charges

### Why in News

- Ministry of Power has issued order for extension of the waiver of Inter-State Transmission system (ISTS) charges on transmission of electricity generated from solar and wind sources for projects to be commissioned up to 30th June 2025.

- Further, the order promotes the development of solar, wind, Hydro Pumped Storage Plant (PSP) and Battery Energy Storage System (BESS), trading of RE in the power exchanges and seamless transmission of RE power across the states.

### About the System

- The waiver of inter-state transmission charges on transmission of the electricity generated from solar and wind sources of energy that was available to solar and wind projects commissioned up to 30th June 2023 has now been extended till 30th June 2025.
- The waiver of Inter- State transmission system (ISTS) charges has also been allowed for Hydro Pumped Storage Plant (PSP) and Battery Energy Storage System (BESS) projects to be commissioned up to 30th June 2025.
  - This will promote the Hydro Pumped Storage Plant (PSP) and Battery Energy Storage System (BESS) projects for meeting the balancing requirement of the grid caused due to large scale integration of Renewables in the Electricity Grid ie around 450 GW by 2030.
- The waiver of transmission charges has also been allowed for trading of electricity generated/ supplied from Solar, wind, PSP and BESS in *Green Term Ahead Market (GTAM) and Green Day Ahead Market (GDAM)* for two years i.e. till 30th June 2023.
- It has also been clarified that an intra-State transmission system which is used for the conveyance of electricity across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-State transmission of electricity, shall be included for sharing of inter- state transmission charges.
  - Any waiver of inter-state transmission charges that applies to Inter-state transmission systems shall also be applicable to such parts of the Intra-state transmission.
  - The transmission charges of such Intra-state transmission system shall be reimbursed by the CTU as is being done for ISTS system. Concerned Regional Power Committee may through studies identify such lines.

### Way Forward

- This is expected to encourage the RE trade in the Power Exchanges.
- The volume of renewable energy trade in the power exchange is expected to increase further.
- An opportunity to minimise the curtailment of RE as the RE developers will also have the option to sell power in the power exchanges and get instantly paid on the day of delivery of power itself.
- The buyers of Renewable energy will also have an opportunity to sell their surplus power in the power exchanges or allow in advance the sellers to sell in the power exchange.
- The order is futuristic as it also allows the waiver of transmission charges for RE trade in the **Green Day Ahead Market (as part of the integrated Day ahead market)**.
  - CERC, POSOCO and the power exchanges are working on it in mission mode to operationalise this product in the power exchanges by end of August 2021.
- Thus, India paves way for energy transition from Fossil fuel to Non-fossil fuel by giving incentive for power trade from Renewable, Hydro PSP and Energy Storage.
  - This amendment Order will be a boost to renewable energy and also a step forward to achieve the targets of Government of India in meeting the international obligations towards climate change.

100+ Selections in UPSC  
CSE 2017, 2018 & 2019

ONLINE CLASSES FOR  
**UPSC  
CSE  
2022**

ADMISSIONS OPEN

#Under guidance of best Faculty Members from Delhi

## Biotech KISAN Programme

### Why in News

- The Department of Biotechnology (DBT) has issued a Special Call for North East Region as a part of its Mission Programme “*Biotech-Krishi Innovation Science Application Network (Biotech-KISAN)*”, with the aim to understand the local problems of the NER farmers and provide scientific solutions to those problems.

### About the Programme

- *Biotech-KISAN is a scientist-farmer partnership scheme launched in 2017 for agriculture innovation* with an objective to connect science laboratories with the farmers to find out innovative solutions and technologies to be applied at farm level.
- Under this scheme, so far 146 Biotech-KISAN Hubs have been established covering all 15 agroclimatic zones and 110 Aspirational Districts in the country. The scheme has benefitted over two lakhs farmers so far by increasing their agriculture output and income.
- Over 200 entrepreneurship have also been developed in rural areas.

### About the Present Initiative

- *The Biotech-KISAN will be implemented in the North East Region* with objective of linking available innovative agriculture technologies to the farm with the small and marginal farmers, specially women farmers of the region.
- The Hubs in NER will collaborate with the top scientific institutions across the country as well as State Agricultural Universities (SAUs) / Krishi Vigyan Kendras (KVKs) / existing state agriculture extension services / system and other Farmers’ organizations in the NER for demonstrations of technologies and training of farmers.

### Way Forward

- The present call specifically focuses on the North East Region as it is predominantly agrarian with 70% of its workforce engaged in agriculture and allied sector for livelihood.
- The region produces merely 1.5 per cent of country’s food grain and continues to be a net importer of food grains even for its domestic consumption.
- The NE region has untapped potential to enhance the income of the farming population by promotion of location specific crops, horticultural and plantation crops, fisheries and livestock production.

## General Elections 2019: An Atlas

### Why in News

- Chief Election Commissioner, Shri Sushil Chandra along with Election Commissioner Shri Rajiv Kumar and Election Commissioner Shri Anup Chandra Pandey has recently released ‘General Elections 2019 – An Atlas’.
- Shri Sushil Chandra commended the officers of the Commission for compiling this innovative document and hoped that this would inspire academicians and researchers to further explore the vast landscape of the Indian elections.

### Background

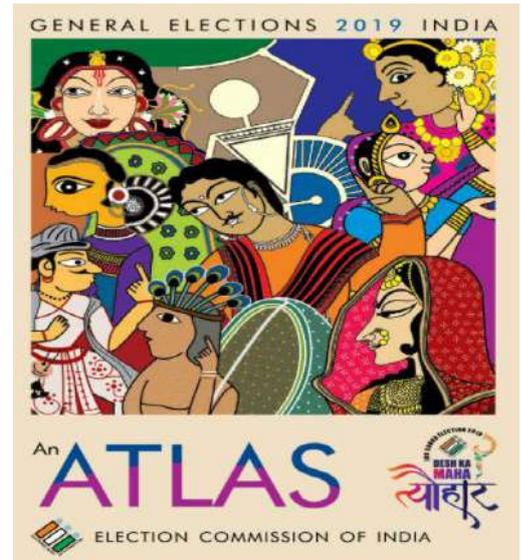
- Since the first General Elections in 1951-52, the Commission has been publishing compilation of electoral data in the form of narrative and statistical books.
- 17th General Elections conducted in 2019 were the largest democratic exercise in human history which witnessed the participation of 61.468 crore voters at 10.378 lakh polling stations spread over 32 lakh square kilometer territory of India.
- In October 2019, the Commission released statistical reports based on the electoral data made available by the Returning Officers of 543 Parliamentary Constituencies.

### How is the Data Collected?

- In Indian elections, electoral data is primarily collected during the preparation of Electoral Roll by the Electoral Registration Officers and also in the process of conduct of elections by the Returning Officers.
- This data is then collated by these statutory authorities.
- Thereafter, after the culmination of the electoral process, the Election Commission of India collects this electoral data and prepares various reports for compilation, record and dissemination purposes.

## About the Atlas

- The Atlas brings out salient features such as data of the 23 States and Uts where women voting percentage was more than the male voting percentage; information about the largest & smallest parliamentary constituency in terms of electors, candidates and performance of political parties amongst other parameters.
- The Atlas depicts the elector's data in different categories and through various comparison charts like Elector Gender Ratio and electors in different age categories.
- *The Election Commission of India set up over 10 lakh polling stations* in General Elections 2019 with the lowest number of electors per polling station (365) in Arunachal Pradesh.
- The 2019 General Elections witnessed the *lowest gender gap* in the history of Indian elections.
- The *Elector Gender Ratio which has shown a positive* trend since 1971 was 926 in 2019 General Elections.
- The Atlas encompasses all the data and statistical figures of this monumental event. It has 42 thematic maps and 90 tables depicting various facets of the elections.
- The Atlas also shares interesting facts, anecdotes and legal provisions related to the Indian elections.
- The maps and tables as placed in this Atlas depict that information and provide for better understanding and appreciation of electoral diversity of the country.
- In addition to contextualizing the data, these detailed maps reveal electoral patterns at various levels as well as indicate its spatial and temporal settings.



## Conclusion

- With an aim to better visualize and represent the electoral data, this Atlas serves as an informative and illustrative document that brings to light the nuances of the Indian electoral process and empowers readers to analyse trends and changes.

## Indian Certification of Medical Devices (ICMED) Plus Scheme

### Why in News

- The Quality Council of India (QCI), and the Association of Indian Manufacturers of Medical Devices (AiMeD) have added further features to the ICMED the Scheme that had been launched for Certification of Medical Devices in 2016.
- The ICMED 13485 PLUS Scheme was launched digitally.

### Background

- This is the first scheme around the world in which quality management systems along with product certification standards are integrated with regulatory requirements.
- This scheme will be an end to end quality assurance scheme for the medical devices sector in India.

### About the Scheme

- The ICMED 13485 PLUS, as the new scheme has been christened, will undertake verification of the quality, safety and efficacy of medical devices.
- ICMED 13485 Plus has been designed to integrate the *Quality Management System components* and product related quality validation processes through witness testing of products with reference to the defined product standards and specifications.

## Conclusion

- This scheme provides the much-needed institutional mechanism for assuring the product quality and safety.
- It will go a long way in assisting the procurement agencies to tackle the challenges relating to the menace of counterfeit products and fake certification.
- This will also help in eliminating the circulation and use of sub-standard medical products or devices of doubtful origin that could prove to be serious health hazards.

## Cable Television Network Rules Amended

### Why in News

- The Central Government has recently issued a notification amending the Cable Television Network Rules, 1994 thereby providing a statutory mechanism for redressal of grievances/complaints of citizens relating to content broadcast by television channels in accordance with the provisions of the Cable Television Network Act, 1995.

### Background

- The **Hon'ble Supreme Court in its order in WP(C) No.387 of 2000** in the matter of "Common Cause Vs Union of India & Others" while expressing satisfaction over the existing mechanism of grievance redressal set up by the Central Government, had advised to frame appropriate rules to formalize the complaint redressal mechanism.

### Present Scenario

- At present there are over 900 television channels which have been granted permission by the Ministry of Information and Broadcasting all of which are required to comply with the Programme and Advertising Code laid down under the Cable Television Network Rules.
- There is an institutional mechanism by way of an Inter-Ministerial Committee to address grievances of citizens relating to violation of the Programme/Advertising Codes under the Rules.
- Similarly, various broadcasters have also developed their internal self-regulatory mechanism for addressing grievances.
  - However, a need was felt to lay down a statutory mechanism for strengthening the grievance redressal structure. Some broadcasters had also requested for giving legal recognition to their associations/bodies.

### What has been done?

- Cable Television Network Rules have been amended to provide for this statutory mechanism, which would be transparent and benefit the citizens.
- At the same time, self-regulating bodies of broadcasters would be registered with the Central Government.

### Way Forward

- The above notification is significant as it paves the way for a strong institutional system for redressing grievances while placing accountability and responsibility on the broadcasters and their self-regulating bodies.

## Code on Social Security, 2020

### Why in News

- Ministry of Labour and Employment, Government of India has notified the draft rules relating to **Employee's Compensation under the Code on Social Security, 2020** for inviting objections and suggestions, if any, from the stakeholders.
  - Such objections and suggestions are required to be submitted within a period of 45 days from the date of notification of the draft rules.

### Background

- The Code on Social Security, 2020 amends and consolidates the laws relating to social security with the goal to extend social security to employees and workers in the organised as well as unorganised sectors.

### What has been done?

- **Chapter VII (Employee's Compensation) of the Social Security Code, 2020** envisages, inter-alia, provisions relating to employer's liability for compensation in case of fatal accidents, serious bodily injuries or occupational diseases.
- The draft Employee's Compensation rules notified by the Central Government provide for the provisions relating to manner of application for claim or settlement, rate of interest for delayed payment of compensation, venue of proceedings and transfer of matters, notice and manner of transmitting money from one competent authority to another and arrangements with other countries for the transfer of money paid as compensation.
- The draft rules under the Code on Social Security, 2020 relating to Employees' Provident Fund, Employees' State Insurance Corporation, Gratuity, Maternity Benefit, Social Security and Cess in respect of Building and Other

Constructions Workers, Social Security for Unorganised Workers, Gig Workers and Platform Workers and Employment Information were notified on 13.11.2020.

## Sub-Mission on Agricultural Mechanization (SMAM)

### Why in News

- To empower the farmers through *Sub-Mission on Agricultural Mechanization (SMAM)* scheme, Government of India has released funds for various activities of Farm Mechanization like Establishment of Custom Hiring Centres, Farm Machinery Bank, High-tech Hubs and distribution of various agricultural machinery etc to different states.

### Background

- Agricultural Mechanization plays a vital role in optimizing the use of land, water energy resources, manpower and other inputs like seeds, fertilizers, pesticides etc to maximize the productivity of the available cultivable area and make agriculture a more profitable and attractive profession for rural youth.
- Agricultural Mechanization is one of the key drivers for the sustainable development of the agriculture sector.
- Sustainable Agriculture mechanization growth will require appropriate and precision agricultural machinery adequately supported by the latest technology.

### About the Scheme

- Ministry of Agriculture and Farmers Welfare has launched a Sub-Mission on Agricultural Mechanization (SMAM) in 2014-15 with the objectives of increasing the reach of farm mechanization to small and marginal farmers and to the regions & difficult area where farm power availability is low.
- To boost up mechanization in the agriculture sector improved agricultural implements and machinery are essential inputs for modern agriculture that enhance the productivity of crops besides reducing human drudgery and cost of cultivation.
- Mechanization also helps in improving the utilization efficiency of other inputs therefore considered to be one of the most important segments of the agriculture sector to boost the income of farmers and growth of the agricultural economy.
- For strengthening of agricultural mechanization in the country and to bring more inclusiveness Sub-Mission on Agricultural Mechanization (SMAM) has been introduced with the main objectives of are:
  - To promote 'Custom Hiring Centres' and 'Hi-tech Hubs of High-Value Machines'.
  - To offset the adverse economies of scale arising due to small and fragmented landholding and high cost of individual ownership.
  - Creating awareness among stakeholders through demonstration and capacity building activities
  - Ensuring performance testing and certification of agricultural machines at designated testing centres located all over the country.

## All India Survey on Higher Education (AISHE) 2019-20

### Why in News

- Union Education Minister Shri Ramesh Pokhriyal 'Nishank' today announced the release of the report of All India Survey on Higher Education 2019-20.
- This Report provides key performance indicators on the current status of Higher education in the country.

### Features

- In the last five years from 2015-16 to 2019-20, there has been a growth of 11.4% in the student enrolment. The rise in female enrolment in higher education during the period is 18.2%.
- Total Enrolment in Higher Education** stands at 3.85 crore in 2019-20 as compared to 3.74 crore in 2018-19, registering a growth of 11.36 lakh (3.04 %). Total enrolment was 3.42 crore in 2014-15.
- Gross Enrolment Ratio (GER)**, the percentage of students belonging to the eligible age group enrolled in Higher Education, in 2019-20 is 27.1% against 26.3% in 2018-19 and 24.3% in 2014-2015.
- Gender Parity Index (GPI)** in Higher Education in 2019-20 is 1.01 against 1.00 in 2018-19 indicating an improvement in the relative access to higher education for females of eligible age group compared to males.
- Pupil Teacher Ratio** in Higher Education in 2019-20 is 26.
- The Total Number of Teachers stands at 15,03,156 comprising of 57.5% male and 42.5% female.

## PM e-VIDYA

### Why in News

- Union Education Minister Shri Ramesh Pokhriyal 'Nishank' recently approved the release of the guidelines for the Development of e-Content for Children with Disabilities.

### Background

- A comprehensive initiative, **PM e-VIDYA** was launched on 17th May 2020, with an aim to unify all efforts related to digital/online/on-air education.
- The programme interalia envisages development of special e-content for the Divyang (Children with Disabilities-CwDs).
- In pursuance of this vision, the Department of School Education and Literacy, Ministry of Education had constituted a Committee of experts, for recommending guidelines for developing e-content for these children.

### Significance

- For the first time, an attempt was made to prepare guidelines for CwD also referred to as **Children with Special Needs (CWSN)** children so that the **goal of inclusive education** is fulfilled.
- The Committee submitted a report titled "Guidelines for the Development of e-Content for Children with Disabilities"

### Highlights

- e-Content for CwDs should be developed based on the four principles namely: perceivable, operable, understandable and robust.
- e-Content including text, tables, diagrams, visuals, audios, videos etc. should comply with accessibility standards: national standards (GIGW 2.0) and international standards (WCAG 2.1, E-Pub, DAISY etc).
- Distribution platforms on which content is uploaded (e.g. DIKSHA) and Reading platforms/devices on which content is accessed and interacted (e.g. e-pathshala) must comply with technical standards
- Reasonable pedagogical accommodations have been recommended to meet specific needs of CwDs
- The technical standards and guidelines have been detailed out in Section 4 of the report.

### Accessible Digital Textbooks (ADTs)

- The Committee has also recommended that in a phased manner textbooks may be adapted into Accessible Digital Textbooks (ADTs).
  - The content of ADTs should be provided in multiple formats (text, audio, video, sign language etc) with turn-on and turn-off features.
  - Further ADTs should provide flexibility to CwDs to respond to its content/exercises in multiple ways.

### Conclusion

- These guidelines will initiate the creation of high quality content for digital education to Children with Special needs.
- They are dynamic by nature, to be improved based on experience and advent of better technology.

## Surakshit Hum Surakshit Tum Abhiyaan

### Why in news

- NITI Aayog and Piramal Foundation recently launched **Surakshit Hum Surakshit Tum Abhiyaanin**, 112 Aspirational Districts to assist district administrations in providing home-care support to Covid-19 patients who are asymptomatic or have mild symptoms.

### Implementation

- Surakshit Hum Surakshit Tum Abhiyaan will be led by district magistrates in partnership with over 1000 local NGOs, which will enlist and train over 1 lakh volunteers to connect with patients through inbound/outbound calls.
- Piramal Foundation will work with district magistrates to support the training of NGOs and volunteers.
- NGOs will mobilize local volunteers to provide home-care support to those affected, based on the guidelines of the Ministry of Health and Family Welfare.

- Volunteers will be trained to support 20 affected families each by educating caretakers to follow Covid protocols, provide psycho-social support and timely updates about patients to the administration.

### Desired Outcome

- The campaign is expected to play a key role in district preparedness for managing nearly 70% of Covid cases at home, reducing pressure on the health system, and stemming the spread of fear amongst the people.
- The campaign will also undertake capacity building of citizens for correct usage of Oxygen concentrators that have been supplied to these districts.

### Conclusion

- The Abhiyaan is being part of a special initiative, **Aspirational Districts Collaborative**, in which local leaders, civil societies and volunteers work with district administrations to address emerging problems across key focus areas of the **Aspirational Districts Programme**.
- Surakshit Hum Surakshit Tum Abhiyaan is a significant initiative that responds to immediate needs and will provide long-term support to India's poorest communities in the Aspirational Districts by addressing the lasting impact of Covid-19.

## Performance Grading Index (PGI) 2019-20

### Why in News

- Union Education Minister approved the release of Performance Grading Index (PGI) 2019-20 for States and Union Territories of India.

### About Performance Grading Index

- The Government has introduced the **Performance Grading Index** with a set of 70 parameters to catalyse transformational change in the field of school
- The PGI for States and Union Territories was first published in 2019 with the reference year 2017-18.
- The PGI exercise envisages that the index would propel States and UTs towards undertaking multi-pronged interventions that will bring about the much-desired optimal education outcomes.
- The PGI helps the States/UTs to pinpoint the gaps and accordingly prioritise areas for intervention to ensure that the school education system is robust at every level.

### Highlights

- Punjab, Chandigarh, Tamil Nadu, Andaman & Nicobar Islands and Kerala occupy the highest grade.
- Andaman & Nicobar Islands, Arunachal Pradesh, Manipur, Puducherry, Punjab and Tamil Nadu have improved overall PGI score by 10%, i.e., 100 or more points.
- In the PGI domain: **Infrastructure and Facilities**, thirteen States and UTs have shown improvement by 10% (15 points) or more. Andaman & Nicobar Islands and Odisha have shown improvement by 20% or more.
  - Arunachal Pradesh, Manipur and Odisha have shown more than 10% improvement in the PGI domain: Equity.
- **Nineteen States and UTs have shown improvement by 10% (36 points) or more in the PGI domain: Governance Process.** Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Manipur, Punjab, Rajasthan and West Bengal have shown improvement by at least 20% (72 points or more).

UPSC CSE  
**PRELIMS TEST  
SERIES 2022**

60 HIGH  
QUALITY  
TESTS

₹9999 ₹5900



## GENERAL STUDIES PAPER III

### River runoff, glacier melt and seasonality of flow in rivers projected to increase in future

#### Why in News

- Snow and glaciers are melting rapidly in the Himalayan range due to climate change, altering water supplies in the rivers like Indus, Ganga and Brahmaputra in the Himalaya-Karakoram (HK) ranges.
- Total river runoff, glacier melt, and seasonality of flow in these rivers are projected to increase until the 2050s, with some exceptions and large uncertainties, according to a study *“Glacio-hydrology of the Himalaya-Karakoram”* published in the journal *‘SCIENCE’*.

#### Background

- The HK region in South Asia, often called the **Water Tower of Asia or the Third Pole** is one of the most heavily glacierized mountain regions on Earth.
  - Understanding the response of HK rivers to climate change is crucial for almost 1 billion people who partly depend on these water resources.
- The Himalayan basin is an active collisional foreland basin system in South Asia. Uplift and loading of the Eurasian plate on to the Indian plate resulted in the flexure (bending) of the Indian plate, and the creation of a depression adjacent to the Himalayan mountain belt.
- From west to east the basin stretches across five countries: Pakistan, India, Nepal, Bangladesh, and Bhutan.

#### About the Research

- The research led by Dr Mohd. Farooq Azam, assistant professor at the Indian Institute of Technology Indore gathered the results from more than 250 scholarly research papers to arrive at a more accurate understanding – something approaching a consensus – of the links between climatic warming, precipitation change and glacier shrinkage.
- The study shows that glacier and snow melt are important components of HK rivers with greater hydrological importance for the Indus than Ganga and Brahmaputra basins.

#### Himalayan Rivers

- The Himalayan River Basins cover an area of 2.75 million km<sup>2</sup> and have the largest irrigated area of 577,000 km<sup>2</sup>, and the world’s largest installed hydropower capacity of 26,432 MW.
- The melting glaciers fulfils the water requirements of more than a billion people of the region who will be affected when much of the glacier ice mass melts throughout this century and gradually stops supplying the required amount of water.
- Glacier melt water, and climate change impacts on glaciers, are more crucial for the Indus basin in comparison to the Ganga and Brahmaputra basins which are predominantly fed by monsoon rains and are affected mainly due to the changing rainfall patterns.



Himalayan River Basin

#### Way Forward

- The authors recommend a tiered approach to address the identified gaps:
  - Tier-1 includes an expanded observation network that places fully automatic weather stations on selected glaciers.
    - They also suggest developing comparison projects to examine glacier area and volumes, glacier dynamics, permafrost thaw, and snow and ice sublimation.
  - Tier-2 recommendations implement the knowledge of these studies in detailed models of glacier hydrology to reduce the uncertainty in projections of future change.

## Green Hydrogen Summit

### Why in News

- India had organised the two-day summit on green hydrogen involving Brazil, Russia, India, China and South Africa, also referred to as the BRICS nations, on their initiatives around the green fuel.
  - The summit started on 22 June and was organised by state-run NTPC Ltd.
- India pitched for common international standards for green hydrogen at the BRICS Green Hydrogen Summit, to ensure safe transportation and storage of the new age emission-free fuel.

### About Green Hydrogen

- Green hydrogen gas is produced by splitting water into hydrogen and oxygen using an electrolyzer that may be powered by electricity generated from renewable energy sources.
- If the electricity comes from renewable sources such as wind, solar or hydro, then the hydrogen is effectively green; the only carbon emissions are from those embodied in the generation infrastructure.
  - Green hydrogen almost eliminates emissions by using renewable energy.
  - It increasingly abundant and often generated at less-than-ideal times.
- Green hydrogen is of great topical interest to all the countries including BRICS as it has a great amount of potential to ensure sustainable energy supply, increase the level of energy availability and minimize the negative impact on the environment.

### Challenges

- The challenge right now is that big electrolyzers are in short supply, and plentiful supplies of renewable electricity still come at a significant price.
- Compared to more established production processes, electrolysis is very expensive, so the market for electrolyzers has been small.

### Initiatives

- Global hydrogen initiatives have been gaining traction.
  - A recent case in point being US-India hydrogen taskforce that was launched under the aegis of US-India Strategic Clean Energy Partnership.
  - India also plans to extend the production linked incentive (PLI) scheme for manufacturing electrolyzers, which are used for producing green hydrogen.
- India produces around 50 lakh tonnes of hydrogen annually and it's expected that the country may see a green hydrogen demand of 16,000 tonne per annum by 2024 and 1 million tonne by 2030.

### Way Forward

- Green hydrogen currently accounts for less than 1 percent of total annual hydrogen production.
- Leveraging India's landmass and green energy sources for exporting green hydrogen is one of the steps for achieving energy sufficiency for the country, according to a draft proposal circulated by the ministry of new and renewable energy (MNRE), for the planned National Hydrogen Energy Mission.
- The transition to a hydrogen economy will not only reduce India's import dependency on hydrocarbon fuels but also provide clean air to its citizens, reduce GHG emissions in absolute terms and fulfil India's Atmanirbhar Bharat vision.

## Covid Severity Score (CSS) Software

### Why in News

- A software can now identify patients likely to require ventilator support in an ICU and referral in time and make necessary arrangements before emergency sets in.
- The technology is being used in three community Covid care centres at Kolkata and suburbs including a 100-bed government mandated Covid care centre at Barrackpore, Kolkata.

### Background

- Sudden ICU and other emergency requirements during the pandemic have been a challenge for hospitals to manage.
- Timely information about such situations would help manage the health crisis better.

## About CSS

- Covid Severity Score (CSS) Software consists of an algorithm that measures a set of parameters.
- The Foundation For Innovations In Health, Kolkata with support from the Science for Equity, Empowerment and Development (SEED) division of the Department of Science & Technology, GoI in collaboration with IIT Guwahati, Dr. Kevin Dhaliwal, University of Edinburgh and Dr. Sayantan Bandopadhyay, formerly WHO (SE Asia Regional Office), have developed an algorithm that measures symptoms, signs, vital parameters, test reports and comorbidities of the COVID positive patient and scores each against a pre-set dynamic algorithm thus allocating a Covid Severity Score (CSS).

## How will it work?

- This technology has been made available at primary care e-Health clinics in resource poor settings through SEED Project support.
- Frontline Health Workers trained in National Skills Qualifications Framework (NSQF) aligned model and certified by National Skill Development Corporation (NSDC), Government of India are trained to record all these parameters in a tablet computer which has the software loaded in it.
- It scores each against a pre-set dynamic algorithm multiple times for each patient and allocates a Covid Severity Score (CSS) mapping it in a graphical trend.
- The 'CSS' is regularly monitored multiple times by 'remote' specialist doctors thus reducing the doctor's consultation time per patient and reducing the doctors travel requirement.

## Conclusion

- It can help early identification of patients likely to require ventilator support in an ICU and referral, reduce hospital referral for those unlikely to require critical care support, thus releasing more hospital beds in circulation.
- It will also help in providing monitored medical support to those patients who cannot afford treatment or cannot isolate at home due to poor housing conditions.
- The facility can be a huge support for 'Covid Care Centres' with beds and oxygen support only but no facility for invasive ventilation.

## Climate change to increase sea level in Lakshadweep Islands

### Why in News

- Sea-level will rise around the Lakshadweep Islands in the range between 0.4 mm/year to 0.9 mm/year, says a study conducted projecting different greenhouse gas scenarios.
- The study highlights that the worst possible inundation scenarios projected for Lakshadweep Islands are almost similar under different emission scenarios projected and all the islands in the archipelago would be vulnerable to impact from sea-level rise.

### Background

- A team of scientists including AyshaJennath, Athira Krishnan, Saikat Kumar Paul, Prasad K. Bhaskaran jointly from the Department of Architecture & Regional Planning and Department of Ocean Engineering & Naval Architecture, IIT Kharagpur, with support from the Department of Science & Technology, Government of India under the *Climate Change Programme (CCP)*, studied the Climate projections of sea level rise and associated coastal inundation in atoll islands, a ring-shaped coral reef or island.

### Study

- The study estimated that smaller islands Chetlat and Amini are expected to have major land-loss.
  - Projection mapping indicated that about 60%-70% of existing shoreline would experience land-loss in Amini and about 70%-80% in Chetlat.
- The present work highlights that, larger islands Minicoy and the capital Kavaratti are also vulnerable to sea-level rise, and expected to experience land-loss along 60% of the existing shoreline.
- Sea-level rise effects are seen to have the least impact on Androth Island under all emission scenarios.
- According to the team, projected inundation due to sea-level rise can impact the islanders as residential areas are quite close to the present coastline.
  - Also, the only airport in the archipelago is located at the southern tip of Agatti Island, and has a high likelihood of damage due to inundation from sea-level rise.

- The research that was published in the journal 'Regional Studies in Marine Science, Elsevier recently showed that the coastal inundation could have wide socio-economic impact.

### Conclusion

- One of the major threats in the coming years is rising sea level and its significant impact on small islands and this is for the first time, that climate model projections were used to assess the potential areas of inundation over the archipelago of Lakshadweep Islands in the Arabian Sea.
- Keeping in view the impacts from projected sea-level rise for Lakshadweep, it is necessary to have appropriate coastal protection measures and best-practices to formulate planning guidelines.
- This study has practical value and can be immensely useful to policy makers and decision making authorities for both short and long-term planning that benefit the population in Lakshadweep Islands.

## Desertification and Land Degradation Atlas of India

### Why in News

- Ministry of State for Environment, Forest and Climate Change has recently released the latest version of "Desertification and Land Degradation Atlas of India.
- It has been published by **Space Application Centre, ISRO, Ahmedabad**. The Atlas provides state wise area of degraded lands for the time frame 2018-19.
- It also provides the change analysis for the duration of 15 years, from 2003-05 to 2018-19.
- 

### Background

- India hosted the 14th session of Conference of Parties (COP 14) of United Nations Convention to Combat Desertification (UNCCD) in September 2019.
- India is striving towards achieving the national commitments of *Land Degradation Neutrality (LDN) and restoration of 26 Million ha of degraded land by 2030* which focus on sustainable and optimum utilisation of land resources.
- 

### Conclusion

- The salient findings of this Atlas are not only useful as a ready reference, but, will also be helpful in strengthening the envisaged National Action Plan for achieving land restoration targets by providing important baseline and temporal data and technical inputs.

## Smart Enforcement App for Trucks

### Why in News

- As a strategy to reduce logistics costs on road transportation, the Government of India, Department of Commerce, Logistics Division has developed a risk-based approach on the implementation of smart enforcement of rules and regulations related to road-based violations by trucks.
  - It has also developed an IT based solution to make enforcement mechanism technology driven.

### Background

- On an average, a truck in India covers 50,000-60,000 km a year, compared to over 300,000 km in advanced nations such as the United States.
  - One of the key reasons is delays due to random stoppages for physical checking of vehicles and verification of documents etc.
- While GST has helped improve the situation, there is a long way to go to reach the advanced country levels.
- There are over 60 different instances of potential violations of various rules and compliances that enforcement agencies need to watch out for.
- The responsibility for this enforcement lies with state governments departments, namely Commercial tax, transport, police and other agencies.
- All States expressed their interest in implementing such solutions at a wider scale within the states.

## Key Features

- An IT application that would fetch data related to goods being carried on the truck from the existing Goods and Services Tax Network (GSTN) database, and the information related to the vehicle from the VAHAN database
- Make this data available to enforcement officers on the road in advance for approaching trucks
- Based on a risk matrix that uses historical patterns, the app assigns a risk profile to the truck helping the officers decide whether to stop it for further scrutiny
- It requires the officer to issue all fines, penalties, or any other punitive measure through the app, ensuring transparency
- The app includes features that keep records and help reduce ad-hoc implementation of these rules and regulations
- The application would have the ability to integrate with all the sensors, Weigh in Motion, and cameras available with the state government or National Highway Authority to allow remote enforcement.
- This would significantly reduce the need to deploy officers on the ground since the app would be able to alert officers whenever a vehicle is in violation.

## Benefits

- Lead to decrease in number of physical checks of commercial vehicles by the enforcement officers
- Overall reduction in the number of cash challan by issuing e-challan using the system
- Reduction in deployment of work-force on Roads leading to better manpower utilization
- Higher revenue collection due to reduced human intervention
- Improved targeting of offenders
- Reduction in Logistics Cost (currently at 13% of GDP).

## Way Forward

- The process of enforcing rules and regulations associated with tax, transport, traffic, and product specific legislation such as petroleum, forest produce, minerals etc.requires significant investment in manpower and resources by state governments.
  - While economic activities have increased, various states have not been able to increase the manpower to that extent.
- Thus, technology adoption and risk-based approach is the only way forward. He further added that reduced compliance burden on movement of trucks can potentially help to reduce transportation costs quite significantly.

## Deep Ocean Mission

### Why in News

- The Cabinet Committee on Economic Affairs chaired by Prime Minister Shri NarendraModi, has approved the proposal of Ministry of Earth Sciences (MoES) on "Deep Ocean Mission", with a view to explore deep ocean for resources and develop deep sea technologies for sustainable use of ocean resources.

### Background

- Oceans, which cover 70 per cent of the globe, remain a key part of our life. About 95 percent of Deep Ocean remains unexplored.
  - For India, with its three sides surrounded by the oceans and around 30 per cent of the country's population living in coastal areas, ocean is a major economic factor supporting fisheries and aquaculture, tourism, livelihoods and blue trade.
- Oceans are also storehouse of food, energy, minerals, medicines, modulator of weather and climate and underpin life on Earth.

## Initiatives and Approach

- Considering importance of the oceans on sustainability, the United Nations (UN) has declared the decade, 2021-2030 as the Decade of Ocean Science for Sustainable Development.
- India has a unique maritime position. Its 7517 km long coastline is home to nine coastal states and 1382 islands.
- The Government of India's Vision of New India by 2030 enunciated in February 2019 highlighted the Blue Economy as one of the ten core dimensions of growth.

## Components

- **Development of Technologies for Deep Sea Mining, and Manned Submersible:** A manned submersible will be developed to carry three people to a depth of 6000 metres in the ocean with suite of scientific sensors and tools.
- **An Integrated Mining System** will be also developed for mining Polymetallic Nodules from 6000 m depth in the central Indian Ocean.
  - The exploration studies of minerals will pave way for the commercial exploitation in the near future, as and when commercial exploitation code is evolved by the International Seabed Authority, an UN organization.
  - This component will help the Blue Economy priority area of exploring and harnessing of deep sea minerals and energy.
- a. **Development of Ocean Climate Change Advisory Services:** A suite of observations and models will be developed to understand and provide future projections of important climate variables on seasonal to decadal time scales under this proof of concept component.
  - This component will support the Blue Economy priority area of coastal tourism.
- b. **Technological innovations for exploration and conservation of deep-sea biodiversity:** Bio-prospecting of deep sea flora and fauna including microbes and studies on sustainable utilization of deep sea bio-resources will be the main focus.
  - This component will support the Blue Economy priority area of Marine Fisheries and allied services.
- c. **Deep Ocean Survey and Exploration:** The primary objective of this component is to explore and identify potential sites of multi-metal Hydrothermal Sulphides mineralization along the Indian Ocean mid-oceanic ridges.
  - This component will additionally support the Blue Economy priority area of deep sea exploration of ocean resources.
- d. **Energy and freshwater from the Ocean:** Studies and detailed engineering design for offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plant are envisaged in this proof of concept proposal.
  - This component will support the Blue Economy priority area of off-shore energy development.
- e. **Advanced Marine Station for Ocean Biology.** This component is aimed as development of human capacity and enterprise in ocean biology and engineering.
  - This component will translate research into industrial application and product development through on-site business incubator facilities.
  - This component will support the Blue Economy priority area of Marine Biology, Blue trade and Blue manufacturing.

## Conclusion

- The technologies required for deep sea mining have strategic implications and are not commercially available.
  - Hence, attempts will be made to indigenise technologies by collaborating with leading institutes and private industries.
- A research vessel for deep ocean exploration would be built in an Indian shipyard which would create employment opportunities.
- This mission is also directed towards capacity development in Marine Biology, which will provide job opportunities in Indian industries. In addition, design, development and fabrication of specialised equipment, ships and setting up of required infrastructure are expected to spur the growth of the Indian industry, especially the MSME and Start-ups.

## Cold desert

### Why in News

- Scientists have shown that the cold desert of Ladakh Himalaya once experienced large floods that rose much above the present-day river level.
  - It implies that in the scenario of global warming, when the higher Himalaya regions are expected to respond dramatically, flood frequency in Ladakh may increase, which may call for serious urban and rural planning.

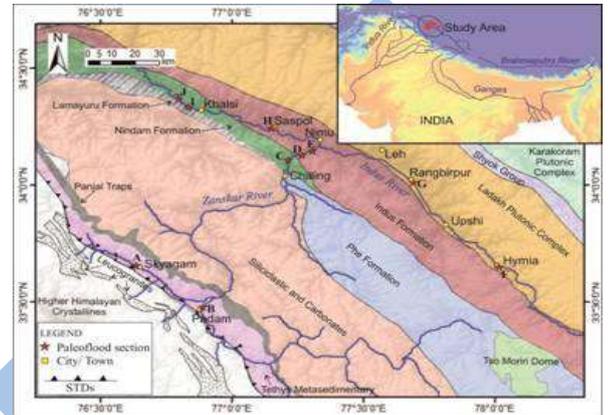
## Background

- A team of students and scientists lead by the Wadia Institute of Himalayan Geology at Dehradun, an autonomous institute of the Department of Science & Technology, Government of India, travelled through the tough *terrains of Zaskar and Indus drained Himalaya and looked minutely into geological signatures of past floods in Ladakh region that date between 15-3 thousand years before present.*
  - This study was recently published online in the Geological Society of America Bulletin.

- This analysis showed that the cold desert once experienced a large flood that rose to more than 30 m above the present-day river level.
  - *The active flood plains nearer to river were also utilized by Humans*, possibly as camping sites and cooking as indicated by presence of hearths at several locations and levels of flood deposits.
- The preliminary study of hearths suggested that there was an inbound migration of people along the mountain corridors of Ladakh after the Last Glacial Maximum when temperatures were relatively warmer, and hydrology of the region was supporting.

## Flood and Cold Desert

- Large floods that naturally occur in major rivers of India fed by melting snow and glaciers and a continental scale precipitation regime of Indian Summer Monsoon (ISM) and Westerlies and East Asian Summer Monsoon (EASM) significantly modify the landscape and impact lives and economy of all that encroached into its geomorphic domain.
- These floods are of various kinds and origin (Glacial/landslide lake outbursts, cloud bursts, excessively strong monsoon) and have different forcing factors and frequencies and therefore add large uncertainty in flood prediction models.
  - An instrumental record of these floods is of ~100 years is not enough to understand the natural ramp of flood occurrences in the Himalayas, and therefore archive going deep into time is required.



## Impact

- Slack Water Deposits (SWDs)
  - Flood leaves a stack of fine sand and silts at places along its channel where the flood energy drastically reduces, for example, wider segments of river valleys, confluences, behind rock embayments which is called as **Slack Water Deposits (SWDs)**.
  - The SWDs were located at several locations along the Zaskar and Indus rivers, counted vertically for the number of floods, and were dated using technology called *Optically Stimulated Luminescence (OSL)* and *Accelerator Mass Spectrometry of  $^{14}C$* .
  - The flood deposits were also analysed for their source.
- Last Glacial Maximum
  - The chronology of the flood deposits pointed towards three phases of increased flooding occurred in Ladakh after the period called **Last Glacial Maximum** (14–11, 10–8, and 7–4 (1000 years) or ka).
  - These were times when due to warming, the Indian summer monsoon was active in Ladakh as well.
- The results also suggest that Ladakh floods are chronologically out-of-phase with those occurring in North-Eastern Himalayas and mainland China during the past 15 thousand years.
  - This implies that the modern relationship between the ISM and EASM goes deep into more than 14 thousand years.
  - Further, the rocks of Higher Himalayan Crystalline and Tethyan sequences equally act as hotspots of erosion in the regions during the flood phases.

## Way Forward

- According to the WIHG team, a detailed genomic and isotopic-based study of these anthropogenic relics may further help understand the geographical antiquity of migrating humans and the kind of food and vegetation they were living on.

## Novel technique could help detect tropical cyclones

### Why in News

- A team of Scientists including Jiya Albert, Bishnupriya Sahoo, and Prasad K. Bhaskaran from IIT Kharagpur, with support from the Department of Science & Technology, Government of India under the Climate Change Programme (CCP), devised a novel method using Eddy detection technique to investigate the formative stages and advance detection time of tropical cyclogenesis in the North Indian Ocean region.

- The research was published in the journal 'Atmospheric Research' recently.
- The team observed that the method could bring about genesis of prediction with a minimum of four days (~ 90 h) lead time for cyclones developed during the pre-and post-monsoon seasons.
  - Initiation mechanisms of genesis of tropical cyclones occurs at upper atmospheric levels and are also detected at higher lead time for pre-monsoon cases, unlike the post-monsoon cases.

## Background

- Early detection of Tropical cyclones has wide socio-economic implications. So far, remote sensing techniques have detected them the earliest.
- However, this detection was possible only after system developed as a well-marked low-pressure system over the warm ocean surface.
- A larger time gap between the detection and the impact of the cyclone could help preparation activities.

## Concept

- Prior to the formation of cyclonic system over the warm oceanic environment, the initial atmospheric instability mechanism, as well as the vortex development, is triggered at higher atmospheric levels.
  - These cyclonic eddies are prominent features in the vertical atmospheric column encompassing the disturbance environment with a potential to induce and develop into a well-marked cyclonic depression over the warm ocean surface.
  - They could be used for detection of prediction of cyclones.

## Conclusion

- The method developed by the scientists' aims to identify initial traces of pre-cyclonic eddy vortices in the atmospheric column and track its Spatio-temporal evolution.
  - They used coarser grid resolution of 27 km for identification and finer resolution of 9 km to evaluate the characteristics of eddy vortices.
  - The study was conducted with cases of four post-monsoon severe cyclones -Phailin (2013), Vardah (2013), Gaja (2018), Madi (2013), and two pre-monsoon cyclones Mora (2017) and Aila (2009) that developed over North Indian Ocean.

## CAR-T cell therapy

### Why in News

- 4th June, 2021 was a historic day for TMH, IIT Bombay team and cancer care in India as the first CAR-T cell therapy (a type of gene therapy) was done at the Bone Marrow Transplant unit at ACTREC, Tata Memorial Center in Mumbai.
- The CAR-T cells were designed and manufactured at Bioscience and Bioengineering (BSBE) department of IIT Bombay.
- This work is partly supported by BIRAC-PACE scheme.

### About CAR-T Cell Therapy

- The **Chimeric Antigen Receptor T-cell (CAR-T)** therapy has emerged as a breakthrough in cancer treatment.
  - Clinical trials conducted globally have shown promising results in end stage patients, especially in patients suffering from Acute Lymphocytic Leukemia.
  - Though this technology has a remarkable therapeutic potential for cancer patients, at present this technology is not available in India.
  - Each patient's CAR-T cell therapy costs 3-4 crore (INR).
- The challenge therefore is to develop this technology in cost-effective manner and make it available for the patients.
- The design, development, and extensive pre-clinical testing was carried out by IIT-B as a collaborative project with Tata Memorial Center, Mumbai by the two Investigators.

### Background Issue

- The manufacturing complexity is a major reason for the therapy cost.

- In order to promote and support development of CAR-T cell technology against cancer and other diseases, BIRAC and DBT have taken initiatives and launched specialized calls to invite proposals in the last 2 years.

### Conclusion

- This is a “first in India” gene therapy in early phase pilot clinical trial and the dedicated efforts and excellent collaboration between IIT Bombay and Tata Memorial Hospital, Mumbai.
- The central government’s National Biopharma Mission-BIRAC has approved 19.15 Cr crore to the team for conducting a first-in-human phase-1/2 clinical trial of the CAR-T cells.

### About BIRAC

- Biotechnology Industry Research Assistance Council (BIRAC)** is a not-for-profit Section 8, Schedule B, Public Sector Enterprise, set up by Department of Biotechnology (DBT), Government of India as an Interface Agency to strengthen and empower the emerging Biotech enterprise to undertake strategic research and innovation, addressing nationally relevant product development needs

# CSE MAINS TEST SERIES 2021

20 TESTS

**₹12,000**  
Course validity: 365 days

## FOREIGN RELATIONS

| Serial Number | Countries                        | Issues  |
|---------------|----------------------------------|---|
| 01            | BRICS nations<br>                | <ul style="list-style-type: none"> <li><b>BRICS Nations have unanimously agreed on an innovation co-operation at the 11th BRICS S&amp;T Steering Committee Meeting.</b></li> <li>The proposal put forward by India would be considered at the BRICS Science, Technology and Innovation Entrepreneurship (STIEP) working group for elaborating the action plan.</li> <li>India, which has assumed the BRICS presidency from January, 2021, will host 6th edition of BRICS Young Scientist Conclave during 13-16 September 2021.</li> <li><b>BRICS is the acronym coined to associate five major emerging economies:</b> Brazil, Russia, India, China, and South Africa.</li> </ul> |
| 02            | Saint Vincent and The Grenadines | <ul style="list-style-type: none"> <li>The Union Cabinet, chaired by the Prime Minister Shri NarendraModi has approved an Agreement between the Republic of India and Saint Vincent and The Grenadines for the Exchange of Information and Assistance in Collection with respect to Taxes.</li> </ul>   |
| 03            | Fiji                             | <ul style="list-style-type: none"> <li>For cooperation in the field of Agriculture and allied sectors between India and Fiji in a virtual meeting.</li> <li><b>Prime Minister Modi's historic visit to Fiji and the first Forum for India Pacific Islands Cooperation have given a new impetus to India's engagement with Fiji and the Pacific</b></li> </ul>   |

|    |           |  |
|----|-----------|--|
|    |           | <p><b>region.</b></p> <ul style="list-style-type: none"> <li>Under the MoU, a Joint Working Group will be established to set down procedures and plan and recommend programs of cooperation towards achieving its aims. The Working Group will hold its meetings alternatively in India and Fiji once in every two years.</li> </ul>   |
| 04 | Bhutan    | <ul style="list-style-type: none"> <li>India and Bhutan today inked an MoU for developing cooperation between two countries in the area of environment.</li> <li>It is a platform to further enhance Indian and Bhutanese partnership and support, exchange best practices in areas like prevention of Air Pollution, Waste Management, Chemical Management, Climate Change, etc.</li> </ul>                                 |
| 05 | Israel    | <ul style="list-style-type: none"> <li><b>MIDH Division of Ministry of Agriculture &amp; Farmer's Welfare, Government of India and MASHAV</b> - Israel's Agency for International Development Cooperation - are leading Israel's largest G2G cooperation, with 29 operational Centres of Excellence (COEs) across India in 12 States, implementing advanced Israeli Agro-Technology tailored to local conditions.</li> </ul> |
| 06 | Australia | <ul style="list-style-type: none"> <li>Cooperation and collaboration in the field of Agriculture</li> </ul>  |

## SHORT LINERS

- 1. Olympic Day** :Every year on 23 June, International Olympic Day is celebrated across the world.

  - The day was initially observed to promote the idea of the Olympics and in order to celebrate the establishment of the International Olympic Committee (IOC).
  - This committee was formed on 23 June, 1894 in Sorbonne, Paris.
- 2. The Union Cabinet has approved to merge and transfer all assets, liabilities, rights and obligations of 'Central Railside Warehouse Company Limited' (CRWC), a Mini-Ratna Category-II Central Public Sector Enterprises (CPSE) incorporated under the Companies Act, 1956 in 2007 with its holding enterprise 'Central Warehousing Corporation' (CWC).**

  - The merger will unify similar functions of both the companies (i.e., warehousing, handling, transportation) through a single administration to promote efficiency, optimum capacity utilization, transparency, accountability, ensure financial savings and leverage railway siding for new warehousing capacities.
- 3. National Single Window System**

  - Union Ministry of Commerce & Industry, Railways and Consumer Affairs will soon launch the first phase of the National Single window system.
    - The digital platform will allow investors to identify and apply for various pre-operations approvals required for commencing a business in India.
    - There will be 17 Ministries/Departments and 14 states onboard in the first phase
  - The "Single window" would be a genuine one, acting as a one-stop solution to all the problems or requirements of the investors.
    - This would provide end-to-end facilitation, support, including pre-investment advisory, information related to land banks and facilitating clearances at Central and State levels.
  - It will facilitate the investors to know the approvals required to establish a particular business and let them apply for those approvals to commence business, see the status of those approvals as well as provide/seek clarifications regarding the same- all in one platform.
- 4. The Indian Naval warships along with aircraft from Indian Navy and Indian Air Force will be engaged in joint multi-domain operations with the Carrier Strike Group.**
- 5. MoD signs contract with GSL for construction of two Pollution Control Vessels for Indian Coast Guard.**

- These Special Role ships will be indigenously designed, developed and built by GSL.
  - The acquisition is under 'Buy Indian - Indigenously Designed Developed & Manufactured (Buy Indian-IDDM)', the highest priority category for defence capital procurements.
  - The acquisition will significantly augment the capability of ICG to respond to Oil spill disasters at sea and also enhance Pollution Response (PR) efficiency.
  - These two vessels are scheduled for delivery by November 2024 and May 2025 respectively.
- 6. EU-INDIA JOINT NAVAL EXERCISE**
- EU and India has recently conducted a joint naval exercise in the Gulf of Aden.
  - The exercise was based on the scenario of an anti-piracy operation.
  - It included cross-deck helicopter landings, complex tactical evolutions at sea, live firing, a night-time joint patrol and a naval parade in the high seas off the coast of Somalia.
- 7. M-Yoga App**
- The Prime Minister of India launched 'WHO M-Yoga' App while addressing on the occasion of 7th International Day of Yoga. M-Yoga app will provide many videos of Yoga training and practice based on common Yoga protocol in many languages.
  - Ministry of AYUSH and the World Health Organization (WHO) had jointly undertaken a project in mid 2019, focussing on mobile-Yoga.
  - It envisaged the concept of the 'Be Healthy, Be Mobile' (BHBM) under the United Nations Sustainable Development Goals to achieve Universal Health Coverage by 2030.
  - Be Healthy, Be Mobile (BHBM) initiative is a global partnership led by WHO which supports the scale up of mobile health (m-Health) technology within the scope of the National Health system to combat non-communicable diseases (NCDs).
- 8. "JaanHaiToJahaanHai" campaign:** The Minority Affairs Minister Shri Mukhtar Abbas Naqvi has recently launched a nationwide "JaanHaiToJahaanHai" awareness campaign to create awareness on Corona vaccination in rural and remote areas of the country and also to "Crush and Curb" the rumours and apprehensions, being spread by some vested interests regarding the on-going vaccination drive.
- 9. Union ministry for Social Justice and Empowerment has decided to establish five 'Divyangta Khel Kendra' in different parts of country, out of which Ahmedabad City is identified to open one of such facilities.**
- 10. Ganga Quest 2021**
- Ganga Quest, a national online quiz on Ganga, rivers, and environment was first conceptualized in 2019 as an educational program to sensitize children and youth towards the River Ganga to strengthen the NamamiGange program of the Ministry of Jal Shakti, Government of India.
  - It is a competitive knowledge-building platform.
- 11. SENSIT Rapid COVID-19 Ag Kit**
- Under the aegis of COVID-19 Research Consortium, DBT-BIRAC supported product 'SENSIT Rapid COVID-19 Ag kit' has been developed by Ubio Biotechnology Systems Pvt. Ltd. for qualitative detection of SARS CoV-2 Nucleocapsid Protein with an assay time of 15 minutes.
  - The samples are collected using nasopharyngeal swabs from the suspected individual.
  - This ICMR approved kit is a chromatographic immunoassay, which allows the healthcare personnel to visually read the test result.
  - The test works on the principle of sandwich immunoassay and utilizes a pair of monoclonal antibodies which when bound to COVID-19 specific antigen, result in the appearance of a coloured line.
  - The kit exhibits sensitivity and specificity of 86% and 100%, respectively and has a shelf life of 24 months.
- 12. Unmukt project:** To commemorate the *World Sickle Cell Disease Day* on 19th June 2021, the Ministry of Tribal Affairs (MOTA) organized the Second Online National Conclave on 'Sickle Cell Disease in India', in partnership with FICCI, Novartis, Piramal Foundation, Apollo Hospitals, NASCO and GASCDO.
- Unmukt project to eliminate Sickle Cell Disease was launched.

**13. The Department of Posts has come out with a special cancellation to capture the essence of the World Yoga Day on 21 June.**

- This unique initiative will mark the commemoration of the 7th International Day of Yoga (IDY) 2021. Indian Post will issue this special cancellation with a pictorial design through its 810 Head Post offices across India.
- This is going to be one among the largest such simultaneous philatelic commemorations ever.
- United Nations General Assembly (UNGA) proclaimed 21st June as the International Day of Yoga (IDY) in their resolution adopted on 11th December 2014. Since 2015, this Day has been observed all over the world in ever-growing numbers of participants.
- Main theme of this year was “Be with Yoga, Be at Home.”

| Year | Commemoration   |
|------|---|
| 2015 | Department of Posts brought out a set of two stamps and a miniature sheet on the International Day of Yoga.   |
| 2016 | Prime Minister Narendra Modi released commemorative postage stamps on Surya Namaskara to mark the commemoration of the 2nd International Day of Yoga. |
| 2017 | UN Postal Administration (UNPA) issued a set of stamps showing 10 yoga asanas to commemorate the International Day of Yoga in New York.               |

**14. National Internet Exchange of India (NIXI)**

- National Internet Exchange of India (NIXI) has recently celebrated its 18th Foundation Day.
- For the last 18 years, NIXI has been contributing to Indian Internet Ecosystem.
- NIXI, the first Internet Exchange of the country facilitate peering of ISPs among themselves for the purpose of routing the domestic traffic within the country, instead of taking it all the way to US/ Abroad, thereby resulting in a better quality of service and reduced bandwidth charges for ISPs by saving international currency on International Bandwidth.
- NIXI is also the .IN Registry managing India’s country code top level domain (ccTLD) - .IN.
- NIXI also manages the National Internet Registry of the country delegating Internet Protocol addresses (IPv4 and IPv6) and Autonomous System numbers to the Indian Affiliates.

- National Internet Exchange of India (NIXI) is a not-for-profit organization working since 2003 for spreading the internet technology to the citizens of India through the following activities:
  - Internet Exchanges through which the internet data is exchanged amongst ISPs and CDNs.
  - IN Registry, managing and operation of .IN country code domain and. भारत IDN domain for India.
  - IRINN, managing and operating Internet protocol (IPv4/IPv6).

**15. The Central Government has constituted an Expert Group under the Chairmanship of Professor Ajit Mishra, a renowned economist, to provide technical inputs and recommendations on fixation of Minimum Wages and National Floor Wages to the Government.**

- The tenure of the Expert Group is three years.
- It has come to the notice that certain section of the Press and some of the stakeholders have opined this as an attempt to delay the fixation of Minimum Wages and National Floor Wages by the Government.
- The tenure of the Expert Group has been kept as three years so that even after the fixation of Minimum Wages and National Floor Wages, Government may seek technical inputs/advice from the Expert Group on subjects related to Minimum Wages and National Floor Wages, as and when required.

**16. NTPC a Maharatna CPSU under Ministry of Power has been recognised as a Great Place to Work for the 15th year in a row by the Great Place to Work Institute.**

- NTPC is the only PSU to consistently feature in India’s Top 50 Best Workplaces.
- This year NTPC ranked 38th up from 47th position last year.
- It also won it’s first-ever recognition of India’s Best Employers among Nation-Builders 2021. Figuring consistently in GPTW’s Best Workplaces List year on year is testimony of its people’s practices and approach.

*Great Place to Work Certification* is the most definitive 'Employer-of-Choice' recognition that organizations aspire to achieve.

- The Certification is recognized world over by employees and employers alike and is considered the 'Gold Standard' in identifying and recognizing Great Workplaces with High Trust and High Performance

17. As part of the 'AzadikaAmritMahotsav', a 50 kWpSolar roof top was inaugurated in Solan, Himachal Pradesh under the Integrated power development scheme of Ministry of Power, Government of India.
  - The 50 kWp Solar roof top project is commissioned by Himachal Pradesh State Electricity Board Ltd (HPSEBL).
18. *European Union Naval Force (EUNAVFOR) and the Indian Navy have participated in the maiden IN - EUNAVFOR Joint Naval Exercise in the Gulf of Aden.*
19. *Council of Scientific and Industrial Research (CSIR), India's apex scientific research organisation and Tata MD, the new healthcare venture from the Tata Group have announced a significant partnership to ramp up the COVID-19 testing capacity across Tier II and III towns as well as rural areas across India.*
  - *CSIR and Tata MD are developing this capacity to manage any future surge in the COVID-19 testing requirements.*
20. *A tripartite Concession Agreement between National Mission for Clean Ganga (NMCG), Kolkata Metropolitan Development Authority (KMDA) and M/s. Maheshtala Waste Water Management Private Limited (an SPV formed by M/s. Vishvaraj Environment Private Limited) was signed for development of 35 MLD Sewage Treatment Plant for Maheshtala on Hybrid Annuity PPP mode.*
21. *Minister for Road Transport & Highways and Micro, Small and Medium Enterprises, Shri NitinGadkari said that the Government's target is to reduce road accident deaths by 50% by year 2024.*
22. *In a major boost to exports of Geographical Indications (GI) certified agricultural produce, a consignment of fibre and mineral rich 'Jalgaon banana' has been exported to Dubai.*
  - In 2016, Jalgaon Banana got GI certification which was registered with NisargrajaKrishiVigyan Kendra (KVK) Jalgaon.
  - India's banana export has been rising sharply because of adoption of farm practices as per the global standards.
23. *The first commercial consignment of Geographical Indications (GI) certified Jardalu mangoes from Bhagalpur, Bihar was exported to United Kingdom. APEDA, in collaboration with Bihar government, Indian High Commission & Invest India.*
24. *India exported a consignment of GI certified Banganapalli and other variety Survarnarekha mangoes sourced from farmers in Krishna and Chittor districts of Andhra Pradesh.*
  - Mango in India is also referred to as 'king of fruits' and referred to as **Kalpavriksha (wish granting tree)** in ancient scriptures.
  - While most of the states in India have mango plantations, Uttar Pradesh, Bihar, Andhra Pradesh, Telangana, Karnataka have a major share in total production of the fruit.
25. *Ministry of Culture (MoC) and Ministry of Ports, Shipping and Waterways (MoPSW) signed a Memorandum of Understanding (MoU) for 'Cooperation in Development of National Maritime Heritage Complex (NMHC) at Lothal, Gujarat'.*
  - This MoU and the museum will play a big role in highlighting the cultural heritage of the country both domestically as well as to the world.
  - National Maritime Heritage Complex, a world-class facility is to be developed in the vicinity of the ASI site of Lothal, located about 80 kms away from Ahmedabad, Gujarat.
  - NMHC would be developed as an international tourist destination, where the maritime heritage of India from ancient to modern times would be showcased and an edutainment approach using the latest technology would be adopted to spread awareness about India's maritime heritage.

**26. ASEAN Defence Ministers Meeting (ADMM) Plus**

- The ADMM Plus is an annual meeting of Defence Ministers of 10 ASEAN (Association of Southeast Asian Nations) countries and eight dialogue partner countries - Australia, China, India, Japan, New Zealand, Republic of Korea, Russia and the United States.
  - Brunei is the Chair of the ADMM Plus forum this year.

**27. A three day virtual Conference of BRICS Network Universities on the theme of electric mobility was inaugurated at IIT Bombay.**

- This conference is part of the engagements that India is hosting under the education stream during its Chairship of the 13th BRICS Summit this year.
- Eighteen experts from Brazil, Russia, India, China and S. Africa will talk about various aspects of electric mobility like traffic management, hydrogen technology, hybrid vehicles, lithium-ion batteries and linkage between e-mobility and livelihoods.
- BRICS Network University is a union of higher education institutions of the five BRICS member countries, formed with the objective of enhancing educational cooperation in general, and especially in the realm of research and innovation . IIT Bombay is the lead institution of India for the BRICS Network University.

**28. The Asian Development Bank (ADB) and the Government of India has signed a \$484 million loan to improve transport connectivity and facilitate industrial development in the Chennai-Kanyakumari Industrial Corridor (CKIC) in the state of Tamil Nadu.**

- CKIC is part of India's East Coast Economic Corridor (ECEC), which stretches from West Bengal to Tamil Nadu and connects India to the production networks of South, Southeast, and East Asia. ADB is the lead partner of the Government of India in developing ECEC.
- The project will upgrade about 590 km of state highways in the CKIC influence areas that cover 23 of the 32 districts between Chennai and Kanyakumari in Tamil Nadu.
- ADB is committed to achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty.
  - Established in 1966, it is owned by 68 members – 49 from the region.

**29. Adi Prashikshan Portal:** Minister of Tribal Affairs, Sh. Arjun Munda launched ADI PRASHIKSHAN portal and inaugurated a three-day training programme on "Capacity Building Training of Master Trainers for ST PRI Members" as part of Azadika Amrit Mahotsav.

- ADI PRASHIKSHAN portal developed by the Ministry would act as a Central Repository of all training programs conducted by Tribal Research Institutes (TRIs), different divisions of Ministry, National Society for Education of Tribal Students (NESTS), Centre of Excellences funded by Ministry of Tribal Affairs and National Tribal Research Institute.
- The 'AdiPrashikshan Portal' should be interactive and should also include feedback in the form of actual experiences of the PRIs in implementation which will also help to improve the programme.

**30. A Memorandum of Understanding (MoU) between the Ministry of Ports, Shipping and Waterways, Government of India and Ministry of Civil Aviation, Government of India for development of Sea Plane services in India was signed.****31. This MoU envisages development of Non Scheduled/Scheduled operation of seaplane services within territorial jurisdiction of India under RCS-UDAN scheme of government of India.****32. Mandatory Hallmarking of Gold Jeweller: Mandatory Hallmarking of Gold Jewellery is going to come into force from 16th June, 2021.**

- a. Based on extensive consultations with stakeholders, following decisions were taken-
- b. Hallmarking will be initially be starting from.256 districts of the country which have Assaying marking centres.
- c. Jewellers with annual turnover upto Rs. 40 lac will be exempted from mandatory Hall Marking.
- d. Export and re-import of jewelry as per Trade Policy of Government of India - Jewellery for international exhibitions, jewellery for government approved B2B domestic exhibitions will be exempted from mandatory Hall Marking.
- e. Gold of Additional carats 20, 23 and 24 will also be allowed for Hall Marking.

- f. Watches, fountain pens and special types of jewellery viz. Kundan, Polki and Jadau will be exempted from Hall Marking.
- g. Jewellers can continue to buy back old gold jewellery without hallmark from consumer.
- h. In order to give adequate time to the manufacturers, wholesalers and retailers of Gold Jewellery, there would be No penalties till August end.
- 33. Power Grid Corporation of India Limited (POWERGRID), central PSU under Ministry of Power as part of its Corporate Social Responsibility (CSR) initiative has provided support to Municipal Corporation of Shimla, Himachal Pradesh for creating Smart City Infrastructure. POWERGRID had sanctioned funds amounting to ₹1.98 crore for providing four Special Purpose Vehicles (SPVs) in the state of Himachal Pradesh.**
- 34. Naftali Bennett has become the Prime Minister of Israel.**
- 35. JivanVayu breathing circuit for CPAP therapy :** Indian Institute of Technology, Ropar has developed a device 'JivanVayu' which can be used as a substitute of CPAP machine.
- However, this is Nation's first such device which functions even without electricity and is adapted to both kinds of oxygen generation units like O2 cylinders and oxygen pipelines in hospitals.
  - These provisions are not available in otherwise existing CPAP machines.
- 36. Continuous Positive Airway Pressure (CPAP)**
- Continuous Positive Airway Pressure (CPAP) is a treatment method for patients having breathing problems during sleep called sleep apnea.
    - The machine uses mild air pressure to keep the airways open for easy breathing.
    - It is also used to treat infants whose lungs have not fully developed.
  - The machine blows air into the baby's nose to help inflate his or her lungs. The treatment is all the more necessary during early stages of the Covid-19 infection.
    - It reduces lung damage and allow patients to recover from the inflammatory effects.
- 37. A Memorandum of Understanding (MoU) has been signed between NHPC Limited and Bihar State Hydroelectric Power Corporation Limited (BSHPC) for Implementation of 130.1 MW Dagma HE Project.**
- The 130.1 MW Dagma HE Project, the largest hydropower project of Bihar is to be implemented by NHPC on ownership basis.
- 38. NTPC, India's largest integrated power generating company under Ministry of Power has floated a global Expression of Interest (EOI) to set up two pilot projects, Standalone Fuel-Cell based backup power system and a standalone fuel-cell based microgrid system with hydrogen production using electrolyser at NTPC premises.**
- Through the projects, NTPC is looking to further strengthen its footprint in green and clean fuel.
  - NTPC will collaborate for implementation and further commercialization of the projects.
  - This is in line with NTPC's initiatives towards adopting Hydrogen technologies.
- 39. RakshaMantri Shri Rajnath Singh has approved the budgetary support of Rs 498.8 crore to Innovations for Defence Excellence (iDEX) - Defence Innovation Organisation (DIO) for the next five years.**
- The budgetary support will provide a big boost to the 'Aatmanirbhar Bharat Abhiyan' of Prime Minister Shri NarendraModi as iDEX-DIO has the primary objective of self-reliance and indigenisation in defence & aerospace sector of the country.
  - The scheme, with budgetary support of Rs 498.8 crore for the next five years, is aimed at providing financial support to nearly 300 start-ups/MSMEs/individual innovators and 20 partner incubators under the DIO framework.
  - It will support increased awareness in the Indian innovation ecosystem about defence needs and, conversely, in the Indian Defence establishment about the potential of the Indian innovation eco-system to deliver innovative solutions to meet their needs.
- 40. PROJECT O2 for INDIA**
- **Under Project O2 for India**, a National Consortium of Oxygen is enabling the national level supply of critical raw materials such as zeolites, setting up of small oxygen plants, manufacturing compressors, final products, i.e., oxygen plants, concentrators, and ventilators.

- The consortium is not only looking forward to providing immediate to short-term relief but also working to strengthen the manufacturing ecosystem for long-term preparedness.

- 41. In line with Atmanirbhar Bharat vision of Prime Minister Shri Narendra Modi, Defence Secretary Dr Ajay Kumar has recently inducted Advanced Light Helicopters (ALH) Mk-III in Indian Coast Guard (ICG).**
- The state-of-the-art helicopters are indigenously designed and manufactured by Hindustan Aeronautics Limited (HAL), Bengaluru.
  - The ALH Mk-III marine version has been designed and developed with in-house customisation of 19 additional equipment by HAL to meet ICG requirements.
  - The HAL will supply 16 ALH Mk-III to the ICG by mid next year.
  - The helicopters are capable of undertaking embarked operations from ships which will enhance Coast Guard capabilities towards sea-air co-ordinated search, interdiction capabilities, coastal security, search and rescue operations, medical evacuation, humanitarian missions, pollution response missions, etc.
- 42. A week-long Indian mango promotion programme began in Bahrain today where 16 varieties of the fruit including three Geographical Indications (GI) certified Khirsapati&Lakshmanbhog (West Bengal), Zardalu (Bihar) are being displayed.**
- 43. Union Minister for Youth Affairs and Sports Shri Kiren Rijiju launched the Central Athlete Injury Management System (CAIMS), a first-of-its-kind initiative by the Ministry of Youth Affairs and Sports for streamlining the sports medicine and rehabilitation support offered to the athletes.**
- The core committee of CAIMS includes eminent top of the line experts such as Dr. SKS Marya, Dr. Dinshaw Pardiwala, Dr. BV Srinivas and Shrikant Iyengar.
  - CAIMS aims to provide the best of sports injury management support nearest to the athlete's geographical location.
  - CAIMS will help to standardize appropriate injury treatment protocol for athletes across the country.
  - It will start with support for athletes who are a part of the Target Olympic Podium Scheme (TOPS) development group expected to participate in 2024 and beyond.
- 44. Aerosol Particles :Scientists tracing the concentration, size and evolution of aerosol particles smaller than 3 nanometres at an urban location in India have found frequent formation of sub-3nm aerosol particles in the atmosphere.**
- This has critical importance as a major fraction of these newly formed particles can reach to sizes of cloud condensation nuclei where they have climatic impacts.
  - The formation of small molecular clusters of sub-3nm size is technically called aerosol nucleation, and subsequent growth of these newly formed clusters to the large sizes is called atmospheric new particle formation (NPF).
  - NPF occurs everywhere in the terrestrial troposphere, and therefore it is a large source of aerosol numbers to the atmosphere.
  - Though extensively studied globally using field observations, laboratory experiments and modelling approach, it is largely unexplored in India.
- 45. For the first time in the country, through the I-STEM portal academic users in India will now be able to access the COMSOL Multiphysics software suite at no cost.**
- The Indian Science Technology and Engineering facilities Map (I-STEM), the national web portal for sharing R&D facilities, and the COMSOL Group headquartered in Sweden, have entered a collaborative arrangement for this.
  - I-STEM ([www.istem.gov.in](http://www.istem.gov.in)) is an initiative of Office of the Principal Scientific Adviser to the Govt. of India under the PM-STIAC mission.
  - The goal is to strengthen the R&D ecosystem by connecting researchers with resources, in part by promoting technologies and scientific equipment development indigenously and providing necessary supplies and supports to researchers and enable them to access existing R&D facilities through the I-STEM web portal.
  - The COMSOL Multiphysics software suite, developed by the COMSOL Group, is used worldwide as an indispensable tool for a variety of computer simulations for R&D as well as for learning and instruction.
- 46. The QS World University Rankings 2022 have been released and 35 Indian institutes found a place among the total 1300 universities ranked from across the world. However, apart from the usual three, no other Indian varsity secured a spot among the top 200.**

- IIT Bombay, IIT Delhi and IISc Bengaluru for top-200 positions in QS World University Rankings 2022.
  - IISc Bengaluru ranked 1st in the World for research.
  - Quacquarelli Symonds, global higher education think-tank and compilers of the world's most-consulted university rankings portfolio, released the QS World University Rankings 2022.
47. **Shri Anup Chandra Pandey** has recently assumed charge as the new Election Commissioner (EC) of India. **Shri Pandey joins the Election Commission of India as second Election Commissioner in a three- member body headed by Chief Election Commissioner Shri Sushil Chandra and Election Commissioner Shri Rajiv Kumar.**
48. **The 31<sup>st</sup> edition of India-Thailand Coordinated Patrol (Indo-Thai CORPAT) between the Indian Navy and the Royal Thai Navy was recently conducted from 09 - 11 June 2021.**
49. **Convergence Energy Services Limited (CESL), a wholly owned subsidiary of Energy Efficiency Services Limited (EESL) under Ministry of Power has signed a Memorandum of Understanding (MoU) with the Administration of Union Territory (UT) of Ladakh, to make it a clean and green UT.**
- Beginning with a pilot in the Zaskar valley area, CESL will take up solar mini and micro grid solutions, energy efficient lighting, energy storage-based solutions, efficient cooking stoves and electric mobility solutions in the UT.
50. **Union Ministry of Health has written to the States/UTs today to include the Unique Disability Identification (UDID) Card as a Photo ID while registering on Co-WIN 2.0.**
- As per the Guidance note for Co-WIN 2.0 issued on 2nd March 2021, seven prescribed Photo IDs were specified and prescribed for verification of beneficiary prior to their vaccination.
51. **Mass Absorption Cross-section (MAC)** : Accurate estimation of black carbon (BC), the second most important global warming pollutant after CO-2, will now be possible using optical instruments in the Himalayan region using this parameter.
52. **RDSO (Research Design & Standards Organization)** of Indian Railways has become the FIRST Institution to be declared SDO under "One Nation One Standard" mission on BIS ( Bureau of Indian Standards) which is Institution under Department of Consumer Affairs.
53. **Vice Admiral Ravneet Singh, AVSM, NM** assumed charge as Deputy Chief of Naval Staff.
54. **CEO Water Mandate:** NTPC Ltd, India's largest power utility Under Ministry of Power has become a signatory to the prestigious UN Global Compact's CEO Water Mandate.
- The CEO Water Mandate is a UN Global Compact initiative to demonstrate commitment and efforts of companies to better their water and sanitation agendas as part of long term Sustainable Development Goals.
  - The CEO Water Mandate is designed to assist companies in the development, implementation, and disclosure of comprehensive water strategies and policies.
  - It also provides a platform for companies to partner with like-minded businesses, UN agencies, public authorities, civil society organizations, and other key stakeholders.
55. **National Medicinal Plant Board (NMPS) and the National Botanical Research Institute (CSIR-NBRI) signed an MoU on June 4 for extending joint collaborative efforts to boost the cultivation and production of medicinal plants and herbs in India .**
56. **SAGE (Seniorcare Aging Growth Engine) : Ministry of Social Justice and Empowerment has launched the SAGE (Seniorcare Aging Growth Engine) initiative and SAGE portal for elderly persons.**
- The SAGE portal will be a "one-stop access" of elderly care products and services by credible start-ups.
  - The SAGE portal will be opened for applications from 5th June, 2021 onwards.
  - The start-ups will be selected on the basis of innovative products and services, which they should be able to provide across sectors such as health, housing, care centers, apart from technological access linked to finances, food and wealth management, and legal guidance.

57. India's first indigenous tumour antigen SPAG9 was discovered by Dr Anil Suri in 1998 who is heading the Cancer Research Program at NII (National Institute of Immunology, New Delhi).

- The Cancer Research Program is funded by the Department of Biotechnology (DBT).

58. A Model Panchayat Citizens Charter/framework for delivery of services across the 29 sectors, aligning actions with localised Sustainable Development Goals (SDGs) has been prepared by the Ministry of Panchayati Raj in collaboration with the National Institute of Rural Development & Panchayati Raj (NIRDPR).

- It will ensure transparent and effective delivery of public services for sustainable development and enhanced citizen service experiences.
- The basic objective of the **Gram Panchayat Citizen Charter** is to empower the citizens in relation to public services and to improve the quality of services without any prejudice, and in accordance with the expectations of the citizens.





**APTI PLUS**  
Academy for Civil Services Pvt. Ltd.

# CRACK UPSC CSE AT EASE

**PAY FEES FOR 1 YEAR GET ASSISTANCE FOR 2 YEARS\***

## UNLIMITED BENEFITS OF

-  **VIDEO LECTURES**
-  **DOWNLOADABLE PDFS**
-  **MOCK TESTS FOR PRELIMS & MAINS**
-  **DAILY ANSWER WRITING**

\*T & C apply

# YOJANA

## Index

1. Are We on a Cliff?
2. Connections for Survival.
3. E-waste Management.
4. Policy and Practice.
5. Smart Agriculture.
6. Sustainable Health.
7. The Pandemic & Global Synergy.
8. The Pandemic through Gandhian Perspective.

APTI PLUS

## Are We on a Cliff?

### Introduction

- For thousands of years, humanity lived in a harmonious relationship with nature.
  - However, at present, both nature and world peace are under threat. We have to move towards building an ecological civilisation and descending from the present cliff of uncertainty towards peaceful living and inclusive development and respect for nature.

### Background

- The agricultural revolution which grew five thousand years ago provided food and stability to society.
- *The first industrial revolution* that took place 250 years ago was primarily with coal and steam;
  - *The second with electricity and oil*; the *third with computers* and its accessories; and now the *fourth is a fusion of technologies* in the physical, digital and technological worlds.
- During the 20<sup>th</sup> century, with the detonation of the atomic bomb, humanity entered a new era.
- The future of peace and harmony in the 21<sup>st</sup> century is likely to be directly linked to issues concerning five key realities of life today:
  1. Ecology, global warming, and climate change.
  2. Nuclear weapons, the emerging technology of warfare and the continuing arms race among nation-states.
  3. Geopolitics and nationalism.
  4. Religious extremism.
  5. Poverty and inequality.
- Today, both nature and world peace are under threat. All these developments coupled with geopolitics have put humanity on a cliff and we do not know how to retrieve the present dangerous situation away from its self-destructive ways.
  - This needs to be appreciated in a threefold perspective: (i) Nature; (ii) Science; and (iii) Wisdom.

### Nature

- The enormity of the challenge of conservation of ecology and halting climate change is formidable and calls for making changes in our behaviour and thinking. Five events of the recent times need to be particularly referred to:
  - a. **Bushfires in Brazil and Australia of 2019.**
  - b. **Extinction of species.**
  - c. **Outbreak of pandemic SARS (Severe Acute Respiratory Syndrome) in Hong Kong in 2002-03.**
  - d. **Coronavirus pandemic.**
  - e. **Forest fires in California alongside the Covid-19 pandemic in 2020.**

### Science

- In the last decades of the 20<sup>th</sup> century, the focus of society has shifted decisively towards science and its domineering daughter, technology, both in the western and developing countries.
- This emphasis, in terms of money, political support, and public approval, has led to an economy largely dominated by industry and services.
- This has led to the globalisation of products, cultural values, and information.
- It is integrating markets and trade. But what becomes of environment and nature in such a scenario, remains a matter of great concern.

### Wisdom

- Wisdom is a product of experiences and reflections not only of the present generation but of the civilizational processes of a nation and also of the world.
  - It enables people to face challenges in the context of balancing conflicting claims of development and making the proper use of scientific inventions while keeping the requirements of the Earth in view.
- On 12 December 2015, the Global Climate Accord was reached among 195 countries of the world in Paris.
  - The Paris Accord, as it came to be known, commits countries to actions and policies that would restrict the rise in global temperatures 'well below' 2 degrees Celsius (3.6 degrees Fahrenheit) by the year 2100.
  - They would even 'endeavour to limit' global warming to an even lesser, to 1.5 degrees Celsius.

## Way Forward

- The post-Covid world would be a different world. It has made evident that we are all interdependent and have to work for sharing economic benefits as well as fruits of science together, irrespective of religious, ethnic, economic, and cultural divides.
- There is an imperative requirement to contemplate and work towards building an ecological civilisation that would outline the ways of living in harmony with nature.
- The Covid-19 pandemic has not only highlighted the lack of basic healthcare for people but also the damage to the ecology.
- We have to move towards building an ecological civilisation and descending from the present cliff of uncertainty towards peaceful living and inclusive development and respect for nature.

## Connections for Survival

### Introduction

- We are undergoing an epidemiological transition. States/UTs with higher GDP – Gujarat, Maharashtra, Tamil Nadu and Chandigarh – have a higher prevalence of this disease than Bihar or Jharkhand.
- Rural areas have lower diabetes rates than urban. But most worryingly, the study finds that the poor in well-off urban states have higher incidence of diabetes than the rich in the same cities.
- We are going from lack of food or malnutrition to over-nutrition because of bad food. This is a transition that we must avoid.

### Background

- In June 2017, the British medical journal “The Lancet” published a review of the prevalence of diabetes in 15 states of India.
  - This study by a group of medical practitioners, was funded by the Indian Council of Medical Research (ICMR).
- Non-communicable diseases (NCDs) are connected to our lifestyles. WHO has identified four major risk factors for NCDs – alcohol, tobacco, poor diet intake and lack of physical activity.

### India's Problem & Approach

- India has a double burden of diseases.
  - We have the diseases of the poor – everything from malnutrition to cholera. But we also have the diseases of the rich – cancer and Worse, as the ICMR study shows, the poor, who can ill-afford the diseases of the rich, are now afflicted by them.
- This is where we need to make crucial linkages – between our health and the health of the environment.

### Children Centric Approach

- Polluted water, which is visible in the death of our Rivers, is one of the largest killers of babies in the country.
  - For this reason the UN's Sustainable Development Goals (SDGs) – 13 global goals that the world needs to achieve by 2030 – must put children at the very centre.

### Climate Change

- Similarly, it is time we link climate change – the greatest lifestyle related catastrophe and health – with NCDs.
  - Vector-borne diseases are growing because of the changes in weather. We know that heat and cold stress will grow making the poor more vulnerable.

## Way Forward

- We need to change our behaviour, not because it is in the planet's best interest. But in ours. The advantage is that if it is good for us, it is good for the planet. The ultimate win-win.

## E-waste Management

### Introduction

- Electronic waste (e-waste) i.e., waste arising from end-of-life electronic products, such as computers and mobile phones, is one of the fastest growing waste streams in the world.

- E-waste is generated when the first user of the product concludes on its useful life with no intention of reuse and disposes it off by donating or selling.
  - This e-waste can be managed either formally through collection or disposal in waste bins or informally through developed e-waste management infrastructure or even without it.
- E-waste management is a complicated process given the multitude of actors that are involved in the process.
- Even though the e-waste management policies are in place since 2011 in India, implementation has been sluggish.
- As of today, some 95% of e-waste is managed by the informal sector which operates under inferior working conditions and relies on crude techniques for dismantling and recycling.

## Background

- Indian electronics sector boomed in the last decade, picking up from US\$ 11.5 billion in 2004-05 to US\$ 32 billion in 2009-10 (Parliamentary Proceedings, 2010).
  - Increased production and penetration of imported electronics items led to an accelerated e-waste generation that necessitated regulatory control over the sector.
- Organisations (NGOs) and greater attention from multilateral institutions leading to introducing general waste management regulations in 2008 by Government calling for responsible e-waste management.
  - The Government also started focusing on formalizing the electronics recycling industry by issuing registrations and e-waste management guidelines, following suggestions by industry associations like Manufacturer's Association of Information Technology (MAIT).
- To Streamline e-waste management, Government notified Electronic Waste (Management and Handling) Rules 2011, introducing Extended Producer Responsibility (EPR), whereby producers were required to collect and recycle electronic items.
  - By shifting the burden of waste management on to manufacturers, the EPR framework, in theory, created incentives for more environment-friendly product designs.

## Issues

- First is the issue of **price competencies**: Unlike formal recyclers, informal recyclers have lesser operating costs, no overheads, or other administrative necessities. They hence can offer better price to the aggregators for material, especially high value electronics with precious metals content.
- Second, *the informal network is well-established and rests on social capital ties* that PROs have yet to establish and are hence insulated from reaching the viable number of aggregators.
- *Lack of sufficient metal processing infrastructure* which is why recyclers have to export materials to global smelters and hence never fully realise the true value of extraction, both in terms of processing cost and the price of the extracted metals' quality and quantity.
- **On the demand side**, the major constraint is the awareness level of the consumers both in terms of consumption pattern and disposal pattern.

## Present Situation

### E-waste value chain

- The major stakeholders in the value chain include importers, producers/ manufacturers, retailers (businesses/ government/ others), consumers (individual households, businesses, Government and others), traders, scrap dealers, dissemblers/ dismantlers and recyclers.
- The process involves four stages - generation, collection, segregation and treatment/disposal.

### Formal Collection

- The activities usually fall under the requirements of national e-waste legislation, in which e-waste is collected by designated organisations, producers, Government (such as municipal collection sites), retailer take-back, and producer take-back.
- This e-waste is then taken to a specialised treatment facility, which recovers the valuable materials and manages the toxic substances in an environmentally controlled manner.
  - Residuals are incinerated or safely land filled.

### Waste Bin Collections

- The disposer resorts to openly dump the product in a waste bin along with other household wastes.
- Since segregation of such waste is rudimentary, the e-waste ends up being incinerated or landfilled as other domestic waste.
- As a result, besides losing the resource value it harms the environment.

### Informal Collection

- Some countries may have an established network of individual waste dealers or companies who collect and trade the e-waste through various channels wherein possible metal recycling may occur at the destination.
- In others, the e-waste may be picked door-to-door and sold to an informal dealer who may repair, refurbish, or sell again to a backyard recycler.
  - This recycler dismantles the product through burning, leaching, and melting, thus converting it into secondary raw materials.

### Government Initiatives

1. e-waste rules being amended in 2016 to include collection targets and implementing a *deposit refund system (DRS) by the producers (Government of India, 2016)*.
  - In a DRS, an upfront deposit is charged to the consumer at the time of purchase of the product, and the deposit is refunded when the product is safely returned to the producer.
2. The 2018 amendment also made provision for the registration of *Producer Responsibility Organizations (PROs)*.
  - PROs in India offer comprehensive compliance services, from negotiating the most cost effective regional collection and recycling contracts with different recyclers to helping producers meet outreach and awareness raising requirements (CRB and the Green Electronics Council, 2018).

### Way Forward

- On the supply side, e-waste can be reduced when producers design electronic products that are safer, and more durable, repairable and recyclable.
- Manufacturers must reuse the recyclable materials and not mine rare elements unnecessarily to meet new production.
  - This will drive them to meet EPR targets of collection and run campaigns to educate consumers about in-house e-waste reuse and recycling options.
- The electronics sector will have to adapt operations to one, reduce virgin material usage and second, build technologies around greater extraction and recycling capabilities.
- Optimising the E-waste recycling chain requires strict monitoring, enforcement and tracking, realization of economies of scale and global cooperation.
- Thus, a stepwise approach is essential for optimizing the recycling chain during all stages of the process rather than only at the beginning or the end as the current policy advocates.
  - All the steps involved in the recycling process should be critically benchmarked against international best practices to derive maximum financial, environmental and resource efficiency.
- Immense potential is there in augmenting e-waste recycling in the country. There are some forward movements in this direction.
  - However, lots of ground need to be covered through awareness campaigns, skill development, building human capital, and introducing technology while adopting adequate safety measures in the country's informal sector.

## Policy and Practice

### Introduction

- Developing countries including India should accord topmost priority to 'Health for All' in letter and spirit because it ensures not only human resource development, but also the wellbeing of our future generations.
  - They have to increase their budget on health as proportion of gross domestic product, and as share of public expenditure to total expenditure per capita on health.
- India's expenditure on Public Health is abysmally low. India's per capita public expenditure on health in nominal terms is just Rs. 1,657 (2018-19)-much lower than that in Sri Lanka (Rs. 5,000) and Indonesia (Rs. 3,500).
  - Even the National Health Policy 2017 speaks of just targeting 2.5% of GDP to be spent on health. Consequently, Indian people usually do not have access to quality health services.
  - India also has very lower ratio of 1:1,404 (2021 February); in rural India the situation is worse 1:11,000 (2019).

### Background

- The UN envisaged a comprehensive and integrated primary health care for all in *Alma Ata Declaration in 1978* to promote equity and was driven by the community needs.

- The *constitution of World Health Organization (WHO)* mentions that health, well-being, standard of living, medical care, right to security in case of sickness as well as special care and assistance for mothers and children are quite significant and notable in the context of HFA.
- In addition, *Article 3 of UDHR (Universal Declaration of Human Rights 1948)*, clearly provides that everyone has 'the right to life, liberty and security of person'.
  - Obviously, right to life includes right to food and health (as interpreted by Supreme Court of India).
- *World Bank in its World Development Report (1993)* had ranked common health care interventions according to cost-effectiveness; its Minimum health package for low income countries considered to avert 1/3<sup>rd</sup> of estimated disease burden and 1/5<sup>th</sup> of that in middle income countries.
  - However, many common ailments (moderately severe injuries and chronic conditions like diabetes, cataract, hypertension, mental illness and cervical cancer) were excluded from public funding in low income countries.

### Present Issues

- a. There is a massive decline in public investment in health sector like other social sub-sectors (education, welfare of the deprived sections, etc.).
  - Due to the retreat of state in providing subsidised food, sanitation facilities, there is a rise in communicable and non-communicable diseases, leading to long duration of morbidity, and finally death.
- b. Huge shortage of doctors and supporting medical staff, leading to patients bound to go to private clinics.
- c. There is a shortage of medical equipment, drugs and pathological facilities in public health institutions. As a result, patients are compelled to buy medicines from the open market and to get pathological tests done at private labs at higher costs.
- d. Private doctors not only indulged in charging exorbitant fees but also prescribe unnecessarily more and costlier medicines as well as avoidable pathological tests.
- e. Due to the laxity of the State regulatory apparatuses, even government doctors and supporting staff started giving more time at their private clinics.

### India's Public Health Sector and Government Initiatives

- According to World Health Organization (2015), under-nutrition or malnutrition is the major cause of death in 45 per cent of all deaths among children below 5 years during 1990-2015, the proportion of underweight children in developing countries declined from 28 per cent to 16 per cent in 2015.
  - In India, about 47 per cent children are underweight.
- **In 2018 as per FAO report, about 82.2 crore people suffered from chronic malnutrition**, and 200 crore people had food insecurity in the world. Severe acute malnutrition increases with chronic poverty, lack of education of mothers, inadequate and low nutrient diet, and lack of clean water and sanitation.
  - Hence India ranked 102 among 117 countries in Global Hunger Index 2019 and then India scored 30.3 and was in 'serious hunger category'.
- By 2015, most of the developing countries including India, could not achieve rest of the MDGs. Hence United Nations declared 17 Sustainable Development Goals (SDGs).
  - However, most of the countries are not on the track and by 2030 only a few countries would be able to achieve SDG targets.
- Environment for Health: The policy identified 7 priority areas for improving the environment for health:
  - a. Swachh Bharat Abhiyan.
  - b. Balanced healthy diets and regular exercises.
  - c. Addressing tobacco, alcohol and substance abuse.
  - d. Yatri Suraksha-preventing deaths due to rail and road accidents.
  - e. Nirbhaya Nari-action against gender violence.
  - f. Reduced stress and improved safety at work place.
  - g. Reducing indoor and outdoor air pollution.
- Shifts in Public Health care Delivery:
  - a. **Primary care**-open selective care to assured comprehensive care with linkages to referral hospitals.
  - b. **Secondary and tertiary care**-from an input oriented to an output-based strategic purchasing.
  - c. **Public hospitals**- from user fees and cost recovery to assured free drugs, diagnostic and emergency services to all.
  - d. **Infrastructure and human resource development**-from normative approach to targeted approach to reach under-serviced areas.

- e. **Urban health-** from token interventions to on-scale assured interventions, to organise primary health care delivery and referral support for urban poor.
- f. **National Health Programmes-** integration with health systems for programme effectiveness and contributing to strengthening of health systems for efficiency.
- g. **AYUSH services-**from stand alone to three dimensional mainstreaming.

## Way Forward

- 'Health for All' also requires safe and clean environment, avoiding of chemical fertilisers and pesticides as well as good hygiene.
- Further water should be conserved as a common good, as it is a social, economic, and human right. About 80% of diseases are water-borne, hence safe drinking water should get top priority.
- Further for mental health, there is neither adequate consciousness among people nor adequate medical facilities in all parts of India.
  - As per National Mental Health Survey (2016) life time prevalence of mental illness in India is 13.7% with over 15 crore patients needing active intervention.

## Smart Agriculture

### Introduction

- Agri-tech is defined as technologies and tools that improve yield, efficiency and profitability by leveraging Internet of Things, big data, artificial intelligence, machine learning, drones, and sensors in agricultural processes to track, monitor, automate and analyse.
  - Using predictive technologies to detect erratic weather, sensors to map the specific type of climate and soil in an area, and machine learning algorithms that determine the appropriate crops based on this data, can substantially improve the quality and quantity of yield.
- Agriculture and allied sectors are the primary source of livelihood for nearly 55 per cent of India's population (Census 2011) but accounted only for approximately 17.8 per cent of the country's Gross Value Added (GVA) in 2019-20.

### Issues

- The yields on cereal crops are about 50 per cent lower in India, than in countries such as the United States or China. With agricultural output being utilised as important input for various industries, including retail and e-commerce, the importance of agriculture and improving yields becomes all the more pressing.
- The average size of farm holdings in the country is just over 1 hectare, with small and marginal farmers holding nearly 86 per cent of the total. Small holders find it particularly difficult to invest in expensive technologies and other inputs that would improve efficiency.
- The existence of a large number of intermediaries across the value chain, challenges in access to credit and technology, limited sales channels, and lack of digital infrastructure have inhibited agricultural potential.

### Agri-tech and Government Initiatives

- The agri-tech space in the country involves various actors, including think-tanks, research laboratories, government, incubators, and startups.
- The Central as well as various state governments have undertaken numerous initiatives to enable and support the integration of smart technologies in agriculture.

**ANSWER  
WRITING  
PROGRAMME  
FOR MAINS 2021**

 **₹800**

**20  
QUESTIONS**



| Initiatives taken by Government of India   | Initiatives taken by State Governments   |
|--|--|
| <p><b>Soil Health Cards (2015-2017):</b> crop specific recommendations for fertilizers and nutrients, every two years.</p>   | <p><b>Karnataka :</b><br/>a. Agri-tech fund of USD 2.5 Mn using AI.<br/>b. Partnership with IBM to price forecasting using AI and ML</p> <p><b>Haryana:</b> Integrated Farmer Producer Organization's (FPO) pack houses to the e-NAM platform.</p> <p><b>Madhya Pradesh:</b> Set up the UN-ICRISAT agency to assist with climate smart agriculture solutions.</p> <p><b>Uttar Pradesh:</b> Bill and Melinda gates Foundation and TATA Trusts collaborated with the State government to set up an Indian Agriculture Incubation Network at IIT Kanpur.</p> <p><b>Telangana:</b> Open Data Portal, containing 199 datasets including agriculture, irrigation, and animal husbandry and livestock.</p> <p><b>Punjab:</b> Collaboration with Israeli farming solutions organization, ARNA, which provided affordable technical skill training to farmers to boost crop yield, income, and diversify crops. The company also provided a state digital agriculture platform with a database of all farmers to track their agriculture activities.</p> <p><b>Rajasthan:</b> Hosted Agri-meets, and a Challenge for Change platform for Agri-tech entrepreneurs.</p> |
| <p><b>Soil Health Card Mobile App (2017):</b> captures GIS coordinates while registering sample details to indicate location of sample.</p>  |  |
| <p><b>National Agriculture Market - e-NAM (2016):</b> electronic trading portal connecting APMC mandis. Incorporates 1,000 markets with over 90 commodities.</p>   |  |
| <p><b>Direct Benefit Transfer:</b> Around 14 schemes in agriculture and 2 in animal husbandry have been rolled out using DBT, which involved use of Aadhar-based biometric authentication and e-POS machines to directly reach the farmers' bank accounts.</p> |  |

## Conclusion

- The process of unleashing the true potential of agritech in the country would involve developing a synergistic relationship between the various stakeholders in the process, including the farmers themselves, enhancing investment and R&D to constantly improve and update solutions, and further improving the regulatory environment to ease accessibility of startups and other companies to create a robust ecosystem.

## Sustainable Health

### Introduction

- Health is a primary right and a human rights issue.** Education, poverty and gender have an impact on our health outcomes.
  - Accessibility to health care, clean air and fresh produce and a multitude of other factors affect our health too.
- Health is not just about the absence of disease, but rather the presence of youthful enthusiasm and an ability to learn at every stage in life.
  - It encourages one to be on – and stay on – a path of happiness and fulfilment.
  - The Upanishads describe sukha, or happiness, as a state where all our senses – sight, smell, touch, sound and taste – are all aligned with one another.
  - Dukha, on the other hand, is a state where the senses are not aligned and is, naturally, the lack of happiness.
- In Ayurvedic terms, 'health' can be translated as swasthya, a state where the swa (the self), is stha (centred).
  - In other words, health is synonymous with the state of being centred, with all senses aligned – or as Mahatma Gandhi described it, a confluence of thought, speech and action, and no conflict between them.

### Health Issues

- The world today is fatter than what it was just 10 years ago and yet the dangers of hunger loom over us just as much as they did years ago. Globally, we are facing what is called as, the double burden of malnourishment. On the one hand is a population that eats so much that they could die because of the excesses and on the other hand is a population that doesn't have access to 3 square meals a day.

## Solutions and Way Forward

- Uniformity in eating across the globe post the industrialization period that is the leading cause of obesity and now, as scientists are beginning to realize, even of the climate change.
  - **Local food is climate resilient.** It blends into the local food systems and grows in a manner that allows for other crops and the surrounding eco-system of fruits, flowers, insects, bees, etc., to flourish.
  - It makes economic sense too, as it allows small farmers to grow local food without heavy investments (and unpredictable returns) into biotechnology, modified seeds and even labour. All in all, it helps keep the people, their land and their forest in a good shape.
- Although the human body is not designed to respond well to short term measures, our brain on the other hand, finds it very difficult to comprehend long term and is more interested in immediate rewards.
  - Quick results, usually used as proxy for quick weight loss, can and mostly do lead to slow deterioration in the body, sometimes irreversible.
- Essentially it's about going back to the culture of eating local, seasonal and traditional.

## The Pandemic & Global Synergy

### Introduction

- Covid-19 pandemic is a seismic event that continues to grip the world. Despite being a biological domain-related concern in its purest nature and a pandemic characterised by global health emergency, the scope of the event was remarkably discernible in other aspects of human life ranging from socio-cultural, economic, and political level.
- The notion of correlation between various countries characterised by the temporal and spatial interconnections which played such an important role in the proliferation of the disease justifies the idea of the concept of "Global Village" as being acute.

### Diplomacy

- Diplomacy is all about astute conduct of international relations with other countries based on certain parameters of connectedness and cooperation.
  - India's first supply of vaccine dosage went to Bhutan and Maldives, these two countries being India's closest ally in the South Asian region.
  - Bhutan is the only nation within the SAARC to be not co-opted by the Chinese BRI tentacles.

### Global Community and India

- The global community has extended a helping hand in supporting efforts of Government of India in this collective fight against the global Covid-19 pandemic.
  - Medical equipment, medicines, oxygen concentrators, ventilators etc., are being provided by many countries.
- A streamlined and systematic mechanism for allocation of the support supplies received by India has been put into place, for effective distribution of the medical and other relief and support material.
  - The Indian Customs is sensitive to the need for availability of Covid-related imports including Oxygen & Oxygen related equipment etc., and are working 24X7 to fast track and clear the goods on arrival and lead to expeditious clearance within hours.
- The Ministry of External Affairs is the nodal agency for channelling offers of help from foreign countries and coordinates with Missions abroad.
- When it comes to allocation of vaccine consignment, the launch of India's vaccine outreach initiative known as "Vaccine Maitri" (i.e. Vaccine Friendship) demonstrates India's concern to bring down the curve of the pandemic as a powerful booster to economic recovery prospect.
  - The significance of India's vaccine diplomacy can be understood if we take into account the nature of action of the developed countries which shows their propensity to reserve doses much beyond the need of their population.
  - The situation of the developing countries, on the contrary, is messy because majority of people in the developing and poor countries could remain unprotected if they cannot afford to pay for the vaccine.

### Conclusion

- The idea of compassion and generosity are a distinct hallmark of Indian wisdom which is engraved both within the domestic public space as well as its institutions.

- India should follow a preferential and prudential line of judgement when it comes to vaccine distribution. Being generous should be backed by judicious calculation.
- Complexity in Global Diplomacy needs to be streamlined because there should not be any scope for political anxieties to develop as it did during the second-decade of the twenty first century.
  - Rather, it provides a scope for democratic ethos celebration as the only way to counter a global challenge is through a concerted global response.

## The Pandemic through Gandhian Perspective

### Introduction

- Covid-19 has pushed the world into a pervasive crisis encompassing every aspect of human life. With the passage of time the trade-off between saving lives and saving livelihoods has grown starker.
  - This onslaught of circumstances calls for an alternative way of managing human affairs and revisiting Gandhi.
- Arguably, the most fearsome feature of this pandemic is its uncertainty.

### Gandhian Principles

- Gandhian economics, grounded on the premises of non-violence, truth, and non-covetousness, is instantly antithetical to the mainstream economics.
  - The textbook economics, aka positive economics, starts with the premise that wants in general are insatiable, and that the resources are limited.
- Gandhian system also starts with the idea of containment of wants, because after all there is enough on this earth for everybody's needs but not enough for one man's greed.
  - Greed breeds violence and gives rise to the need to exploit others, which is against the first primal principle of Gandhian system: non-violence.
  - Squeezing wages and exploiting workers is also equivalent to violence.
  - Unequal land holding is manifestation of greed, which was sought to be corrected through Bhoodan movement by Gandhiji's illustrious disciple, Vinoba Bhave.
    - *Empowering villages through a benevolent Jajmani system* was his idea of nurturing the roots of India that lived mostly in villages.
  - Well-being of rural India was of utmost importance to him and people who migrated after that had been achieved, would be exercising their choice.
    - **Gandhiji's ideas about choice of technology** have been much debated, but the key idea of optimally using the local resources and skill are the basic tenets of any text book trade theory.
  - Machines are useful. But they should not impact the dignity of labour.
    - **Gandhiji's concept of dignity of labour** has several dimensions.
  - Firstly, it means that no labour is menial. In fact, he strongly recommended a few hours of manual labour every day. That would ensure physical and mental fitness besides sensitising the employers of manual workers appropriately.
  - Dignity of labour also means more importance to the man behind the machine. It means the need to treat that man with decency. Decency would include healthy and clean working conditions and reasonable wages.
    - He was not against industries. Industries would be necessary for progress, and they would have to make profit in order to survive, but again the profits belong to the society, that provided every possible resource to an industrialist, who is therefore a mere trustee of this wealth.

### COVID-19 Pandemic and Gandhian Principles

#### a. Changing Consumption Pattern :

- The pattern of consumption has changed significantly especially during the lockdown periods. Studies have noted a substantial reduction in 'discretionary' (read as conspicuous) consumption.
  - Consumers are less blinded by the 'brand-value' and are increasingly alert about distinguishing between essential and non-essential consumption.
  - This is a form of 'containment of wants'.
- b. Nudging households to choose healthy lifestyle to bolster immunity in the face of Covid-19 is another blessing in disguise. Preferences are shifting to natural and herbal remedies and learning about their goodness and lasting effects.
- c. On the one hand there are studies of higher incidence of substance abuse, alcoholism anxiety and depression

and on the other innovative and creative ways are being devised to make home-stay more bearable.

- These include online learning programs from those aiming at honing untapped skills.

**d. Changing Patterns of Production**

- An UNCTAD economist, P. Fortunato, in his study on “How Covid-19 is Changing Global Value Chains” observes a trend towards relocation of the GVC (Global Value Chain) in favour of a greater use of local skills and materials.
- Further, experts highlight compulsions to turn to green technology.

**e. Empathy towards the Deprived :** The State Governments did arrange Shramik trains to ensure safe return, but the role of individuals, NGOs and religious institutions that extended a helping hand so spontaneously cannot be overemphasised.

**f. Reducing Rural-Urban Imbalance:** Greater dependence of our population on agriculture indicates non availability of non-agricultural jobs. Providing more jobs in the non-agricultural sector, and more so in manufacturing is a need of the hour.

**g. Treatment to the Reverse Migrants:** States which have had a pressure for accommodating reverse migrants now have an opportunity to deploy their expertise at home.

- These States can use this experienced labour force to work on improving infrastructure, building industrial estates, for setting up new MSMEs, etc.

**h. Urban Development:** Covid-19 has emphasised the need for cleanliness and hygiene like never before. Ignoring hygiene or treating it as welfare or a charitable act is not going to help because these are necessary for everyone’s survival now.

**i. Decent Wages and the Covid Allowance:** States from where the migrant workers have moved out have had to raise wages due to severe shortage of labour.

**j. Environmental Concerns:** Lockdown reportedly reduced the air and water pollution substantially.

- For instance, there might be greater possibilities of shifting to more eco-friendly urban transport system and manufacturing systems to enable reduction in the carbon emissions along with creation of more employment opportunities.

**Conclusion**

- Any attempt to engage in greater sustainability is Gandhian in spirit, because it can be achieved only by rising above the baser instincts of greed, violence and petty self-importance.
- In a truly Gandhian perspective, the 17 Sustainable Development Goals can be seen as an integrated vision stemming from a peaceful and harmonious coexistence of human beings with each other, with nature, and other beings supported by nature, which Gandhiji might have longed for.
  - The pandemic has opened up opportunities to tweak our ways of living on this planet in a wiser and more compassionate way.
  - The choices we make now can have long-term effects on our well-being.



# KURUKSHETRA

## Index

1. Drivers of Inclusive Rural Growth.
2. Sustainable Mining.
3. Integrated Rural Development and Sustainable Development Goals.
4. Fostering Growth in Rural India.
5. Women, Youth and Rural Transformation.
6. Inclusive, Equitable and Quality Education.
7. Rural Entrepreneurship.
8. Expanding Economic activities.
9. Yoga for Health and Well Being.

APTI PLUS

## Drivers of Inclusive Rural Growth

### Introduction

- Currently, India is the fifth largest economy of the world having net worth of 2.94 trillion dollar, but the Government has set a goal to become a five trillion dollar economy by 2025.
- To achieve this, India has set a target of one trillion dollar from agriculture, three trillion dollar from services and one trillion dollar from manufacturing sector.
- The rural economy of India generates about half of the national income and more than two-third of the employment is generated in the rural areas.
  - The agriculture and allied sectors alone contributed 17.8 percent to the total gross value added of the country during 2020-21.

### Background

- Agriculture and allied sectors are the mainstay of rural economy as they drive demand for other sectors including retail, FMCG, and e-commerce, which are dependent on agriculture sector for inputs.
  - Agriculture directly steers consumption and demand in seed, fertilisers and chemicals, agricultural machinery and implements, energy and transport sectors.
- The Government has launched various forward looking policies and initiatives that aim at doubling the income of farmers by 2022 and also increase the non-farm income in rural areas.
  - It is anticipated that the sector will grow to Rs. 88.2 lakh crore by 2023 at a CAGR of 12.2 percent. Expected growth in agriculture sector shall stimulate demand for processing services, packaging, transportation and for finance, retail and other services.

### Government Initiative

- In recent years, Government of India has initiated a number of reform measures related to agriculture market that cumulatively aim at providing best prices to farmers for their produce.
- Government sponsored electronic National
  - a. **Agriculture Market (eNAM) has removed barriers of licensing, movement and storage by providing online trading facilities To farmers for a great number of farm commodities.**
    - The online and transparent bidding system is encouraging farmers to increasingly trade on eNAM.
    - Recently, eNAM has introduced a warehouse based trading module that allows trading based on *electronic-Negotiable Warehouse Receipts*.
  - b. **Government has further announced to integrate 1,000 more mandis in the current Union Budget (2021-22).**
    - Formation and promotion of 10,000 new FPOs has been announced with a budgetary provision of Rs. 6865 crore.
    - In broader sense, FPOs will improve rural economy and create job opportunities for rural youths in villages itself.
  - c. **Recently introduced new farm laws (2020) are intended to help small and marginal farmers (86 percent of total farmers) who don't have means to bargain for their produce to get a better price.**
    - The specific law on agri-market allows farmers to sell their produce outside APMC 'mandis' to buyers of their choice.
    - Any interested buyer can purchase farmers' produce even at their farmgates at mutually agreed price.
    - Farmers will be able to get better prices through competition and cost-cutting on transportation.
  - d. **The new law on contract farming gives freedom to individual farmers to enter into a contract with agri-business companies or retailer-chains on pre-agreed prices of their produce.**
    - Such contracts will help small and marginal farmers as the new law transfers the risk of market unpredictability from the farmer to the sponsor.
  - e. Some of the key initiatives to boost rural economy areas follows:
    - **Agriculture Export Policy** aims to double exports by 2022 and reach Rs. 7.4 lakh crore in next few years.
    - **National Policy on Electronics** promotes incentives that encourage rural development and increase rural employment;
    - **Kisan Credit Card scheme** has eased institutional credit facilities to farmers, fishermen and livestock owners directly enhanced cash-flow in rural markets.
    - Rs. 40,000 crore stimulus package to MGNREGS for enhancing work opportunities in rural areas;
    - **DDU-GKY** is skilling and transforming rural youth into economically relevant force;
    - **Garib Kalyan Rojgar Abhiyan** launched in 116 districts of six states at a cost of Rs. 50,000 crore to tackle the reverse migration of workers to their villages.

- Strengthening all-weather road connectivity to un-connected villages under PM Gram Sadak Yojana.
- f. **'PM Kisan SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) Yojana' was launched (2017) with an initial allocation of Rs. 6,000 crore for three years.**
  - Through this scheme, Government aims to create modern infrastructure with efficient supply chain management from farm gate to retail outlet, and link farmers to consumers in the domestic and overseas markets.
- g. **A novel 'One District One Product' scheme is designed to promote value chain and infrastructure development for the specialised indigenous product (food or otherwise) of a district so that it gets state/national exposure.**
  - The ODOP product could be a perishable agri-produce, cereal based product, or a food product widely produced in a district and their allied sectors.
- h. **Recently, as a step towards ease of doing business, Government revised financial norms for classification of MSME units.**
  - As per new definition, units having investment of less than Rs. 1 crore and turnover less than 5 crore are called micro enterprise; small enterprises have investment of less than Rs. 10 crore and turnover less than Rs. 50 crore; and units having investment of less than Rs. 50 crore and turnover less than Rs. 250 crore are defined as medium enterprises.
  - Government has also introduced a simple, online registration scheme for MSMEs, which is based on self-certification.
  - **To increase credit flow, an emergency credit line is introduced wherein special loans are sanctioned to MSMEs by banks/financial institutions without additional guarantees.**
  - During ongoing pandemic, to further boost rural economy through MSMEs, Prime Minister launched a special CHAMPIONS portal (1 June,2020) for making the smaller units big by helping and hand-holding them.
- i. **Ministry of MSME is also implementing a 'Scheme of Fund for Regeneration of Traditional Industries' (SFURTI) to promote cluster of small scale industries especially in rural areas.**
  - SFURTI is striving to organise the traditional industries and artisans in villages into clusters to make them competitive and financially sustainable.
- j. **Major FMCG companies in private sector are eyeing rural markets with launch of new product series especially suited to the likes of rural consumers.**

## Way Forward

- India's rural region are increasingly becoming key economic drivers for the national economy.
- However, a vast potential of opportunities that lies in the rural markets have not been completely explored.
- There is much scope and hope that the rural economy of India will drive Indian economy towards a five trillion dollar plus economy by the year 2025.

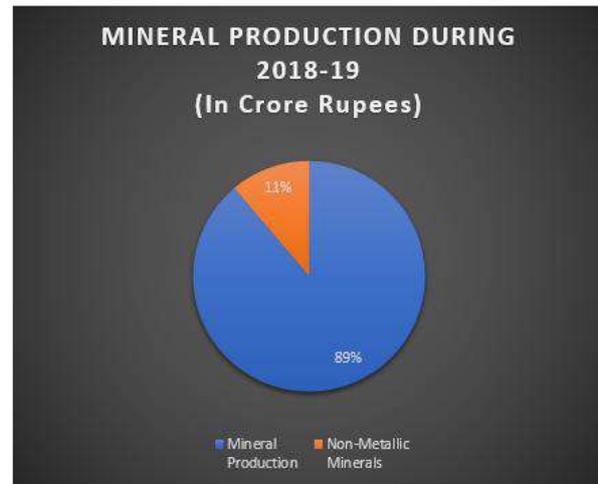
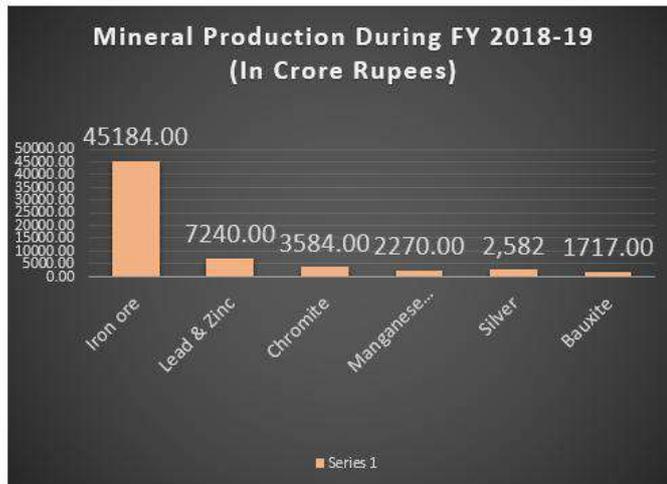
### Fast Moving Consumer Goods (FMCGs)

- **Fast Moving Consumer Goods (FMCGs) sector is the fourth largest sector in India employing over three million people.**
  - This sector primarily consists of three segments – household and personal care (50%), food and beverage (31%) and healthcare (19%).
  - Growing awareness, easier access, changing lifestyles and enhancing income have been the key growth drivers for FMCG sector. Due to various socio-economic factors, the urban segment had been the largest contributor to the overall revenue generated by the FMCG sector.
  - However, in the last few years, the FMCG market has grown at a faster pace in rural India compared to its urban counterpart.
- **Major FMCG companies in private sector are eyeing rural markets with launch of new product series especially suited to the likes of rural consumers.**
  - Higher production of agricultural commodities, reverse migration during pandemic and increasing employment rate is other major drivers fuelling growth in rural market.
- **Consumer durables** is another major sector influencing rural markets and rural economy. This sector is broadly divided into two major categories – Brown Goods (TV, PC, laptops, digital cameras, etc.) and White Goods (AC, washing machines, microwaves, etc.).
  - Spectacular growth in consumer durable market is registered across the country including rural areas.

## Sustainable Mining

### Introduction

- India is extremely rich in mineral resources including coal (4th largest reserves in the world), iron ore, Manganese ore (7<sup>th</sup> largest reserve in the world), Mica (5<sup>th</sup> largest reserve in the world), Bauxite, besides large reserves of Chromite, Limestone, Thorium, Diamonds and Natural gas.
- However, Indian mineral sector is very small and the country is a very small player when it comes to mineral exports.
  - Even in minerals such as Coal and Iron ore, where India has huge proven reserves, we are a net importer of thermal coal and our iron ore exports are insignificant in comparison to countries like Australia and Brazil.
- This is ironical because India has the potential to be a big player in global mineral trade, owing to its huge Obvious Geological Potential in several minerals.



### Background

- During the year 2018-19, the value of exports (including re-exports) of ores and minerals stood at Rs. 2,19,168 crore and accounted for about 9.50 percent of the total value of all merchandise exported from India.
  - Diamond (total) continued to be the largest constituent item with a share of 80.22 percent in the total value of mineral exports in 2018-19.
- During 2018-19, the total value of imports of ores and minerals as Rs. 12,99,186 crore accounting for 36.14 percent of the total value of all merchandise imported into India.
  - Petroleum (crude) continued to be the largest constituent item with a share of 61.44 percent in the total value of minerals imported in 2018- 19.
- Coal production (provisional) at 728.72 million tonnes in 2018-19 was higher by 7.9 percent from that of 675.40 million tonnes in 2017-18.

### Sustainable Mining

- The biggest impediment in opening up Greenfield mines remains forest diversion and Environmental Clearance.
- Environment protection and mining should not be seen as each other's opponents. Instead, a balanced approach needs to be followed wherein sustainable mining can be practiced.

### Suggestions in favour of ensuring Sustainable Mining

- The lessee should undertake proper mine closure within a specified time frame after the expiry of lease.
  - This would also open up large areas in closed mines where Compensatory Afforestation can be taken up.
- Manual mining should be banned and only mechanised mines should be allowed to operate.
  - For this the size of the auctioned blocks offered for lease should be large, so as to justify investment in mechanization.
- Zero waste mining should be the norm and not an exception.
- There should be a limitation on number of persons/workers and their families getting settled in the lease area, so as to reduce degradation of nearby forests due to population pressure.

## Challenges

- New blocks either not put on auction by States or held on by CPSEs/SPSEs who have either failed to secure MLs or start production/evacuation, owing to multiple reasons.
- Non-issue of FC or EC or both on account of several iron ore mines being located in forest areas.
- Several mines not having started production and dispatch despite getting ML.
- Captive iron ore mines not mining optimally as they did not have the permission to sell surplus iron ore in the market.

## Steps taken by Government

- In order to enhance the production of iron ore in the country, following steps have already been taken by the Ministry of Mines by way of amendments to the MMDR Act and Rules :
  - Insertion of Section 8B, which has allowed for seamless vesting of statutory clearances from earlier lessees to the new ones.
  - To allow captive miners to sell up to 50 percent of their production after meeting the requirements of the end-use plant and on paying additional royalty to the state government.
  - Fixing a time frame for Government companies to obtain a ML from the date of reservation and for commencing production & dispatch from the date of obtaining a ML.
  - Empower the central government to conduct auctions or re-auction processes for the grant of a mining lease if a state government fails to complete the auction process in a specified period, decided after consultations between the Centre and state.
  - Allow private entities engaged by the Government to undertake mineral exploration without the need for RP-PL, in addition to public sector entities.

## National Mineral Policy, 2019

- NMP 2019 was approved by the Union Cabinet in 2019. The aim of NMP, 2019 is to have a more effective, meaningful and implementable policy that brings in further transparency, better regulation and enforcement, balanced social and economic growth as well as sustainable mining practices.
  - NMP, 2019 clearly states that “minerals continue to be an important source of foreign exchange earnings.
  - For exports, the policy shall keep in view the dynamics of mineral inventories as well as the short, medium and long term needs of the country.
  - On the other hand, the import of minerals shall be coordinated as far as possible with the indigenous development of mineral based industries.

## Impact

- Open up blocked mines for mining.
- Use captive mines optimally by giving lessees the option of selling surplus mineral in open market.
- Decreasing the time required for auctioning mines, either by State or Central Government.
- Involving private agencies in exploration.

## Conclusion

- The impact of this fast pacing of mining would have a direct impact on the income as well as employment generation in rural areas, as all the mines, without exception, are located in rural areas.
- The country's mining sector which currently provides direct employment to over 30 lakh people can easily become an employment provider to over 60 lakh people directly and 5 Cr people indirectly.
- Environmental sustainability of this enhanced pace of mining can be easily ensured by following the international best practices as have been enumerated above.

## Integrated Rural Development and Sustainable Development Goals

### Introduction

- The 2030 agenda for 'Sustainable Development Goals (SDGs)' by United Nations was implemented with effect from January 1, 2016 in ensuring peace, prosperity and opportunity for all and for well-being of the masses and to end all kinds of deprivation and socio-economic evils including poverty and inequality.
- The agenda enlisted 17 SDGs with 169 Targets, which are the milestones of holistic socio-economic transformation, having priority focus on well being of people and planet earth at large.
- As a global mandate, the SDGs cover three key dimensions of sustainable development viz.

- a. Economic growth.
- b. Social inclusion.
- c. Environmental protection: which are closely interconnected and inevitable, as a part of wellbeing of the individuals, communities, nations and world development.
- The primary focus of SDGs has been on proactive participation of all the stakeholders like National and State Governments of UN member nations, policymakers, local governance bodies, industries, local communities and people across all layers of society.

## SDGs and Rural Development in India

**Table 1: SDGs and Rural Development Linkages**  
(# Degree of Linkage: Scale 3 =Highest, 2 = Moderate and 1 = Lowest)

| SDG#   | Thrust /Focus Area of SDG               | Description of the SDGs  | Linked with Rural Development # |
|--------|---|--|---------------------------------|
| SDG 1  | No poverty                              | End poverty in all its forms everywhere  | Yes (3)                         |
| SDG 2  | Zero hunger                             | End hunger, achieve food security and improved nutrition and promote sustainable agriculture   | Yes (3)                         |
| SDG 3  | Good health and well-being              | Ensure healthy lives and promote well-being for all at all ages.   | Yes (3)                         |
| SDG 4  | Quality education                       | Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all   | Yes (3)                         |
| SDG 5  | Gender equality                         | Achieve gender equality and empower all women and girls  | Yes (3)                         |
| SDG 6  | Clean water and sanitation              | Ensure availability and sustainable management of water and sanitation for all   | Yes (3)                         |
| SDG 7  | Affordable and clean energy             | Ensure access to affordable, reliable, sustainable and modern energy for all   | Yes (2)                         |
| SDG 8  | Decent work and economic growth         | Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all   | Yes (2)                         |
| SDG 9  | Industry, innovation and infrastructure | Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation  | Yes (1)                         |
| SDG 10 | Reduced Inequalities                    | Reduce inequality within and among countries   | Yes (3)                         |
| SDG 11 | Sustainable cities and communities      | Make cities and human settlements inclusive, safe, resilient and sustainable   | Yes (1)                         |
| SDG 12 | Responsible consumption and production  | Ensure sustainable consumption and production patterns   | Yes (2)                         |
| SDG 13 | Climate action                          | Take urgent action to combat climate change and its impacts  | Yes (2)                         |
| SDG 14 | Life below water                        | Conserve and sustainably use the oceans, seas and marine resources for sustainable development   | Yes (1)                         |
| SDG 15 | Life on land                            | Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss | Yes (3)                         |
| SDG 16 | Peace, justice and strong institutions  | Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels            | Yes (1)                         |
| SDG 17 | Partnership for the goals               | Strengthen the means of implementation and revitalise the global partnership for sustainable development   | Not directly linked to SDGs     |

Note: Of the 17 SDGs, 8 SDGs have highest degree of linkage(3) with Rural Development.

Source: SDG Reports; Matrix Reconstructed by Authors

## Effects of COVID-19 and Environment Mapping with SDGs

- Due to COVID-19, there has been widespread poverty, inequality and joblessness in most parts of the world. Mass unemployment, stories of jobs cut from various companies are pretty alarming.
- COVID-19 pandemic has certainly devastated the life of a large section of the working population.
- The world economy has withered by 4.4 percent, which has stalled the socio-economic development processes and act as the biggest challenge in attaining SDGs by 2030.

## Road Ahead

- A structured and well-crafted rural development strategy will certainly help in attaining the sustainable development goals.
- The initiatives like Make in India, Skill India, Digital India, Start-up India and Stand-up India, etc., have been successfully launched and effectively operationalised since 2015-16 in India, which has enabled India to expedite the socio-economic development.
- Vital roles are being played by media (print/electronic/digital), NGOs, civil society, CSR initiatives in creating the awareness, enrolment, effective participation in embracing the SDGs and their implementation, as proactive partners.
- This will in turn set the path for attaining the SDGs, as rural India is the significant contributor for the most of the criteria of SDGs and overall development in Indian context.

## Fostering Growth in Rural India

### Introduction

- Improving and expanding India's infrastructure is essential in bridging gaps between urban and rural India.
  - It allows better access to education, healthcare and economic success.

### Steps taken

#### 1. The Pradhan Mantri Gram Sadak Yojana (PMGSY)

- It seeks to provide all-weather access to eligible unconnected habitations, is a physical embodiment of this bridge.
- It enhanced rural connectivity increases agricultural incomes through better access to markets and ensures sustained access to productive employment opportunities and social services.
- It is fundamental to building robust and independent village economies—a Village Swaraj—as Gandhi described them over a century ago.

#### 2. The Saansad Adarsh Gram Yojana (SAGY)

- In nurturing national pride, patriotism, community spirit, self-confidence and infrastructure development, the Saansad Adarsh Gram Yojana (SAGY), too embodies the government's commitment to the Mahatma's vision.
- It extends the basic amenities and opportunities to rural India and seeks to create model villages (Adarsh Gram) across the country.

#### 3. Pradhan Mantri Awaas Yojana-Gramin (PMAY-G)

- Under this public housing system scheme the government aims to provide 'housing to all' by 2022.
- It provides a pucca house with basic amenities to all eligible houseless persons and those households living in kutcha and dilapidated house.
- The scheme provides unit assistance of **Rs.1.20 lakh in the plains** (increased from Rs. 70,000) and between **Rs. 75,000 to Rs. 1.30 lakh in hilly states**, difficult areas and Integrated Action Plan (IAP) districts.
- The housing scheme is an element of the concerted effort at poverty alleviation in rural India that can pave the roadmap to greater economic productivity, better education and more suitable employment opportunities.

### For Digitisation

#### 1. Pradhan Mantri Jan Dhan Yojana (PMJDY)

- Digital India gives strength to the Pradhan Mantri Jan Dhan Yojana (PMJDY), the National Mission for Financial Inclusion.
- It envisages universal access to banking facilities with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension.
- It has also been an integral platform for disbursing the benefits of social security schemes like Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Atal Pension Yojana (APY) and Pradhan Mantri Mudra Yojana (PMMY).

#### 2. The Svamita Scheme

- This central government scheme aims to provide an integrated property validation solution for rural India wherein village household owners can be granted the 'record of rights' that will enable them to use their property as a financial asset for undertaking loans and other financial benefits from banks.
- 
-

## Strengthening of Panchayati Raj System

### 1. The Rashtriya Gram Swaraj Abhiyan (RGSA)

- It aims to strengthen Panchayati Raj or achieving Sustainable Development Goals (SDGs) with main thrust on convergence with **Mission Antyodaya** and emphasis on strengthening PRIs in the 117 Aspirational districts.
- This is testimony to the recognition of Self-governance as an inalienable component to ensuring sustained growth in rural India.

### 2. Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) scheme

- The most recent example of the efficacy of this system has been the utilisation of the **Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) scheme** to extend government benefits to rural households during the COVID-19 pandemic that helped them avert harsh consequences of country wide lockdowns.

### 3. Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)

- The objective of the DDU- GKY scheme is to bring income diversity to rural families and cater to youth aspirations from these households.

## Conclusion

- The expansive central government schemes all targeted towards extending the benefits of India's changing landscape to rural areas promise to usher sustained growth across India's rural areas.
- The numerous schemes are the vessel through which the potential and aspirations of rural India get the stage they have for so long awaited.

## Women, Youth and Rural Transformation

### Introduction

- Gender is the inevitable push factor for growth and development of a nation like India. In India, women and youth constitute a major share of population.
- Promoting and ensuring gender equality, and empowering rural women through decent work and productive employment, not only contributes to inclusive and sustainable economic growth, but also enhances the effectiveness of poverty reduction and food security initiatives, as well as climate change mitigation and adaptation efforts.

### Role of Women

- Women play the important roles in the rural economy as farmers, wage earners and entrepreneurs.
- They take responsibility for the well-being of the members of their families, including food provision and care for children and the elderly.
- Rural women's unpaid work, particularly in poor households, often includes collecting wood and water.
- Women from indigenous and grassroots communities are often also custodians of traditional knowledge, which is the key for their communities' livelihoods, resilience and culture.

### Role of Women in Rural Growth

- Women are key agents for rural growth and development in India. They play a catalytic role towards achievement of transformational economic, environmental and social changes required for sustainable development.
1. **Agriculture:** In rural areas, ILO has estimated that almost 93percent of work force of young men and women engaged in informal sector like agriculture.
    - The rural women are extensively involved in agricultural activities. However, the nature and extent of their involvement differ with the variation of agriculture production system.
  2. **Animal Husbandry:** In animal husbandry, women have played a multiple role. With regional difference, women take care of animal, grazing, fodder collection, cleaning of animal sheds to processing milk and livestock products.
  3. **Allied Sectors: Sericulture, handloom and textile industries** in rural economy especially in north eastern region, has huge potentiality for women employment generation. Some rural communities have basic skills and the local market for such products.

4. **Small Scale Industries** :Women in rural economy are directly or indirectly involved in processing of *Non-Timber Forest Product (NTFP)* particularly in the small-scale enterprises.

### Role of Youth

1. **Agriculture** : Agriculture is stated to be the main occupation in the rural areas and this occupation requires extensive research, production, utilisation of science and technology, cropping, irrigation and many more functions.
  - Youth, who are well educated and possess efficient knowledge of how to implement agricultural activities, assist in the development of agricultural activities.
2. **Small Scale Industries**: In rural areas, besides agriculture, setting up of small-scale industries require workers.
  - There has been key investment of youth in the development of skills of the workers who are not educated, so that they can acquire jobs in these small scale industries and make a living.
3. **Skill Development**: Skill development is in various areas such as operation of machines, manufacturing of goods, sports, music, and usage of technology, computers and so forth.
4. **Education**: Educational institutions are essential amongst the rural areas; as education enables an individual to seek a living for himself. After getting proper education, an individual has the capacity to contribute for the welfare of his family which ultimately leads to better growth and development of the nation.
5. **Employment Opportunities**: The youth is contributing towards generation of employment opportunities for the rural masses; whether they work in the agricultural sector, industrial sector, production, manufacturing, own small tea stalls, sell snacks/daily use items and other products and so forth.

### Challenges of Women and Youth

- Most rural women and youth are either under-employed (waged and self-employed) or 'not in the labour force'. The issue, therefore, is not so much about unemployment, but serious under-employment in low productivity, predominantly household-based activities.
  - Almost one-quarter of young people live in households where income per head is less than one dollar a day

### Challenges being faced by rural women

- Unequal access to productive resources;
- Limited access to services of education, extension, credit and social care work in households and communities.
- Limited participation, voice and influence in rural organisations.

### Challenges being faced by rural youth

- Limited access to productive and gainful employment in the agricultural sector;
- Limited access to skills development and education;
- Excluded from institutions that provide access to financial services, such as credit, savings and insurance and lack of curricula tailored to the labour market's needs.

### Improving Women and Youth Livelihoods in Rural Areas

- The main problems of rural areas are lack of opportunities of employment for women and youth.
- The employment policies should focus on
  - (i) increasing the demand for labour in relation to supply; and
  - (ii) increasing the 'integrability' of disadvantaged women and youth so that they can take advantage of labour market and other economic opportunities when they arise.
- The provision of good quality of post-school skill training (both pre-employment and job related) remains very limited in most rural areas.

### Conclusion

- In rural areas, the various capital formation activities like agriculture, small-scale industries, skill development, education and other job opportunities need efficient and fullest participation of women and youth.
  - These areas are in an under-developed state; thus, participation of women and youth make them sustainable and bring more prosperity and growth to the rural areas.
  - Hence, the women and youth contribute in bringing about improvements in the infrastructural facilities and promote empowerment opportunities.

- In this way, if rural India will shine the whole country will have immense contributions nationally, regionally and also globally in this century.

## Inclusive, Equitable and Quality Education

### Introduction

- Access to quality education that has equity and inclusion at its core becomes crucial in Indian context considering the unique nature of its society divided by caste, religion, and language.
  - However, the caste system has created layers in the society where one is considered superior to other on the basis of his/her birth in a dominant caste.
  - This has resulted in a significant percentage of population falling into **Socio-Economic Disadvantageous Group (SEDGs)**.
- Therefore, the aim of the education system must be to provide to all students, irrespective of their place of residence, a quality education system, with particular focus on historically marginalised, disadvantaged, and underrepresented groups.
- The Sustainable Development Goal 4 (SDG 4) also seeks to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by 2030”.

### Background

- After independence, education was identified as a vital tool for an equitable and just society.
  - Post-independence, our education system has evolved and expanded phenomenally.
- Currently, the school education system in India is the largest in world with around 15 lakh school, 94 lakh teachers and 25 crores students.

### Government Initiatives

- To take into the problems of university education, the **University Education Commission** was appointed by the Government of India in **1948 under the chairmanship of Dr. S. Radhakrishnan**.
- Secondary Education Commission was appointed in 1952 under the chairmanship of Dr. A. Lakshmanaswamy Mudaliar.
  - The commission identified secondary stage of education as the important link of our education system because it prepares individual for vocation as well as higher education.
- Kothari Education Commission was formed on 14 July 1964 under the chairmanship of Dr. Daulat Singh Kothari.
- Based on the report and recommendations of the Education Commission (1964–1966), the government announced the First National Policy on Education in 1968, which called for a “radical restructuring” and equality of educational opportunities so that national integration and more cultural and economic development can be achieved.
  - It promoted adoption of broadly uniform educational structure in all parts of the country, i.e. **10+2+3 pattern**.
- The Second National Policy on Education (NPE) was adopted by Parliament in May 1986.
  - This new policy called for “special emphasis on the removal of disparities and to equalise educational opportunity.
  - The NPE (1986) recommended for an overhaul of the system of planning and the management of education.
- **The National Education Policy, 2020** is the third in the series of National Education Policies (1968 and 1986 modified in 1992) in India and is the first education policy of the 21st century.
  - The NEP 2020 envisions an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower.
- **The Rashtriya Madhyamik Shiksha Abhiyan (RMSA) scheme:** It initiated in 2009, demonstrated the government’s ambition for a secondary education system that can support India’s growth and development.
- The RTE Act
  - In the year 2002 with 86th Amendment in the Constitution of India wherein article 21 A was inserted to ensure that every child has a right to fulltime elementary education of satisfactory and equitable quality in a formal school which satisfies certain norms and standards.

- This subsequently resulted in passage of the Right of Children to Free and Compulsory Education (RTE) Act, 2009 which gave a legal mandate to provide free and of the 135 countries who have made education a fundamental right for every child.

## Recent Initiatives

- Although, there have been many steps taken to improve the education system in the past, however, there are some crucial areas where the initiatives have been taken in the recent years or are required to be taken in future.
  - **Emphasis on Early Years** : Over 85percent of a child's cumulative brain development occurs prior to the age of 6, indicating the critical importance of appropriate care and stimulation of the brain in the early years in order to ensure healthy brain development and growth.
    - Therefore, strong investment in **Early childhood care and education (ECCE)** has the potential to give all young children such access, enabling them to participate and flourish in the educational system throughout their lives.
  - **National Mission on Foundational Literacy and Numeracy**: To ensure universal acquisition of foundational skill by all children by grade III, it is being set up by the **Ministry of Education (MoE)** on priority as a part of announcement under **AatmaNirbhar Bharat and recommendations of NEP 2020**.
  - **Focus on Learning Outcome** : Although RTE Act in Section 29 (2) talks about the all round development of child, learning through activities, discoveries and exploration and Continuous and Comprehensive Evaluation (CCE) of child's ability to understand the knowledge and its application; still in practical rote learning was promoted.
  - **Reforms in Teacher Education** : The **National Council for Teacher Education (NCTE)** set- up in **1995 after passing the NCTE Act 1993** some how could not achieve its objective of stimulating planned and coordinated development of the teacher education system throughout the country, the regulation and proper maintenance of norms and standards in the teacher education system and formatters connected there with.
  - **Building Capacities of Teachers** : To ensure **continuous professional development (CPD)** of teachers which has also been recommended by **NEP 2020**, a National initiative to improve learning outcomes at the Elementary level through an **Integrated Teacher Training Programme called NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement)** has been launched on 21st August, 2019.
    - **NISHTHA Online** for elementary teachers was launched on 6th October, 2020 on **DIKSHA Platform of NCERT**.
  - **Equity and Inclusion at all Levels** : Many specific interventions have been designed for this purpose such as under **Samagra Shiksha**, an integrated centrally sponsored scheme for school education, provision for text books, uniforms, self defense training for girls, KGBV residential school for girls, assistive devices for Children with special needs (CWSN) etc. are integrated to promote equity and inclusion at all levels.

## Conclusion

- Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation" as rightfully mentioned in NEP 2020.

## Rural Entrepreneurship

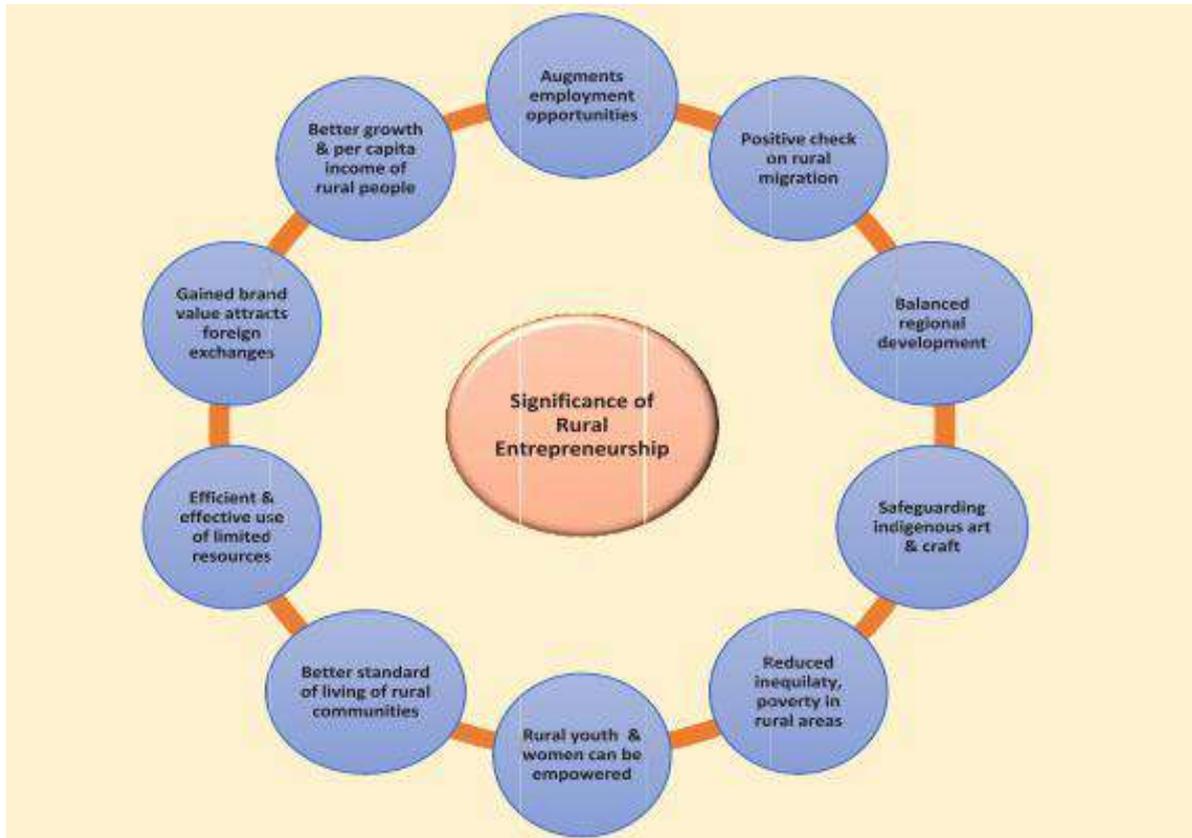
### Introduction

- Rural entrepreneurship can be defined as the activity taken up by the individuals in the countryside that supports either manufacturing products or provides services or adoption of new technologies for an economic benefit.
- It brings value addition to rural resources engaging largely human resources of rural area. Rural Entrepreneurship is synonymous of rural industrialisation.
- The development and growth of it help in generating self-employment, spreading industrial and economic activities and utilising local labour as well as locally available raw materials.

### Background

- The word entrepreneurship describes the activity undertaken by an entrepreneur which usually involves moderate risk with an aim to make profit from the activity.
  - The term entrepreneur " has French origin.

- In rural India, with cyclic and disguised unemployment, it suffers with chronic underemployment. Due to distressed migration of rural people to mega cities, the villages remain deserted and village resources are remaining unexplored.
  - Besides, lack of infrastructure, market and financial access further aggravate rural livelihoods.



### Progress of Entrepreneurship in India

- Micro, Small and Medium Enterprise (MSME) sector contributes nearly 29 percent of the country's GDP, 45 percent of the manufacturing output and 48 percent of the exports (2018-19) providing the largest share of employment (11.10 crore) after agriculture.
  - It plays a crucial role in providing large employment opportunities at comparatively lower capital cost than large industries.
  - It also helps in industrialisation of rural and backward areas; thereby, reducing regional imbalances, assuring more equitable distribution of national income and wealth.
- The entrepreneurial ventures in India are broadly classified into micro, small and medium categories based on their investment and annual turnover. The classification based on SME Act, 2006 is revised as follows (MSME Notification, The Gazette of India, June 1, 2020) and effective from July 1, 2020:
  - a. A micro enterprise, where the investment in machinery/plant/equipment does not exceed one crore rupees and a turnover is upto five crores.
  - b. A small enterprise, where investment in machinery/plant/equipment does not exceed ten crore rupees and a turnover is upto fifty crores.
  - c. A medium enterprise, where investment in machinery/plant/equipment does not exceed fifty crore rupees and a turnover is upto two hundred and fifty crores.
- Activity wise, MSMEs that are majorly involved in providing employment opportunities (M/o MSME Annual Report, 2020-21) are from trade sector (35 percent) followed by other services (33 percent) and manufacturing enterprises (32 percent) in rural area.
- And the percentage share of MSMEs in rural (51 percent) is higher than the urban MSMEs (49 percent) but it is reverse when percentage share of employment is considered.
- Rural Entrepreneurship can create new economic opportunities for rural women and contribute to overall growth and development of the economy.

- Women entrepreneurs can contribute to the economic wellbeing of their family, reduction in poverty, and their Empowerment, achieving upward social and economic mobility as focused in fifth Sustainable Development Goal (SDG) of United Nations (UN).

## Challenges and Opportunities of Rural Entrepreneurship

- A number of challenges stand in the path of rural entrepreneurs viz., financial challenges, social challenges, lack/low level of education, lack of experience and expertise, limited purchasing power, threats from urban entrepreneurs, opaque market entries, technological challenges, existence of middlemen, lack of logistic and infrastructure support, involvement of risk element, shortage of raw materials, lack of security, etc.
- However, besides challenges, there do exist some of the opportunities for the rural entrepreneurs:
  - Low establishment costs involved.
  - Availability of raw materials.
  - Competitive advantages exists.
  - Low cost of production compared to the urban enterprises.
  - Optimum utilization of products.
  - Government policies and subsidies are slowly diverted into this.
  - Support and inspiration to native people through employment generated.
  - Reduced promotional costs.
  - Existing customer base for the produce.
  - Ethical and goodwill building is smooth for rural enterprise in comparison to a foreign enterprise in rural setting

## Government Initiatives

### 1. Scheme for credit & financial assistance to the rural enterprises:

- a. Prime Minister's Employment Generation Programme (PMEGP).
- b. Credit Linked Capital Subsidy Scheme (CLCSS).
- c. Credit Guarantee Trust Fund for MSEs (CGTMSEs).
- d. Interest Subvention Scheme for Incremental Credit to MSEs.

### 2. Schemes for Skill Development and Training:

- a) A scheme for Promotion of Innovation, Rural Industry & Entrepreneurship (ASPIRE).
- b) Entrepreneurship and Skill Development Programmes (ESDP).
- c) Gramodyog Vikas Yojana (GVY).

### 3. Schemes for Infrastructure Development:

- a. Scheme of Fund for Regeneration of Traditional Industries (SFURTI).
- b. Scheme for Micro and Small Enterprises Cluster Development Programme (MSE-CDP)

### 4. Scheme for Marketing Assistance: Scheme for providing financial assistance to Khadi Institutions under MPDA

### 5. Scheme for Technology Upgradation and Competitiveness: a. Financial Support to MSMEs in ZED certification

## Way Forward

- Rural entrepreneurship links the process of socio-economic realignments in rural areas. It is important to note that rural entrepreneurship must not be drawn in isolation rather it must be drawn keeping in view the entire rural community in a long-term basis.
- In short, the nucleus of growth of entrepreneurship in rural areas will answer a number of ill faiths and taboos on the path of rural growth by eradicating rural poverty, increasing employment opportunities, raising the per capita income level and improving rural livelihoods.
- Transformational economic, environmental and social changes through rural entrepreneurship would bring inclusive rural growth and sustainable rural development.

## Expanding Economic activities

### Introduction

- Rural economy continues to play a pivotal role as the prime mover towards the country's Gross Domestic Product (GDP).
- With the bulk of the population living in rural belts, parameters including the growth, income, and consumption trends of these residents hold the key to boost demand, revive the economy, and sustain economic growth.

- According to the Economic Survey 2020-2021, the share of agriculture in gross domestic product (GDP) has reached almost 20 percent for the first time in the last 17 years, making it a bright spot in GDP performance.

## Background

- The second wave of the pandemic sweeping across the country has hit the rural areas. However, the forecast of a normal monsoon is expected to sustain rural demand and overall output in 2021-22.
- The RBI has noted that the record food grain production and buffer stocks in 2020-21 has provided food security and support to other sectors of the economy in the form of rural demand, employment and agricultural inputs and supplies, including for exports.
- Government has set the foodgrain production target at 307.3 million tonnes for the 2021-22 crop year, up by 1.3 percent from last year's estimated foodgrain production of 303.3 million tonnes.

## Expansion of Economic Activities

- In rural areas throughout the world, agriculture represents the predominant land use and a major component of the viability of rural areas.
  - Farming and related activities contribute significantly to the employment and business opportunities, infrastructure and quality of the environment in the rural landscape.
- In developing countries, rural development policies should look at the contribution of farming, both in terms of improving on-farm activities and supporting ancillary services, to secure sustainable development.
  - The main potential contributions of farming to rural development are in terms of supporting employment, ancillary businesses, and environmental services.
  - In peripheral regions, farming may be necessary to support the economic and social infrastructure.
- As of now, India is gearing up to touch the target of doubling farm income by 2022. The growing use of genetically modified crops is likely to boost yield for the farmers.
- Some initiatives include the adoption of food safety and quality assurance mechanisms such as Total Quality Management (TQM) including ISO 9000, ISO 22000, Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) by the food processing industry will help increase the critical mass of agriculture production.

## Challenges

- In view of continuing restrictions on movements of people and vehicular traffic, concerns have been raised regarding negative implications of COVID-19 pandemic on the farm economy.
- The migration of workers from few parts to their native places has also triggered panic buttons, as they are crucial for both harvesting operations and post-harvest handling of produce in storage and marketing centers.
- Smooth functioning of the supply chain, with adequate safety measures for the people involved is the most critical challenge for government machinery during the lockdown period.

## Government Initiatives

- Rural Infrastructure Fund has been increased to Rs. 40,000 crore; the amount for Micro Irrigation Fund created with NABARD doubled to Rs. 10,000 crore for 2021-2022.
- Operation Green Scheme has been widened to 22 perishable products; and 1,000 more mandis are being linked with e-NAM.
  - Under the Operation Greens scheme, 50 percent subsidy is being provided on transportation of all fruits and vegetables through Kisan Rail, as it has become a powerful medium of cold storage network in the country.
- Micro, Small & Medium Enterprises (MSMEs) will be very critical in developing rural industrialisation as their share in national gross value added is about 32 percent and they provide employment to about 111 million workers.
- The concept of provision of Urban Amenities in Rural Areas (PURA) calls for urban infrastructure and services to be developed in rural hubs to create economic opportunities outside of urban areas. These include better road networks, education, health, drinking water, power, sanitation and social safety net.
- Government has launched initiatives such as Make in India, Start-Up India, MUDRA Bank, Skill India, etc. There is a need to identify areas for developing rural hubs based on resources, markets and infrastructure where cooperation of state governments in implementation would be vital.

## Way Forward

- To obviate the immediate concerns of scarcity of farm labor, policies must facilitate easy availability of machinery through state entities, Farmer Producer Organisations (FPOs) or custom hiring centers (CHCs) with suitable incentives.
- It is also suggested to explore leveraging rural employment guarantee schemes such as NREGS funds to pay part of the farm labour (with farmers paying the balance wage amount) to lessen the monetary burden on the farmer while ensuring wage employment to the landless labourers and workers.
- Most importantly, these reforms need significant political will. Structural reforms such as land leasing, contract farming and private agricultural markets, etc. have long been advocated to bring enhanced investments into the agriculture sector and to push its growth.
  - However, there has not been uniform implementation of these legislations by the states and so the full potential of the sector is still unrealised.

## Yoga for Health and Well Being

### Introduction

- Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body; thought and action; restraint and fulfilment; man and nature; a holistic approach to health and wellbeing.
- It is an art and science of healthy living. The word 'Yoga' is derived from the Sanskrit root 'Yuj', meaning 'to join' or 'to yoke' or 'to unite'.
- As per Yogic scriptures the practice of Yoga leads to the union of individual consciousness with that of the Universal Consciousness, indicating a perfect harmony between the mind and body, man and nature.

### Salient Features of Yoga

1. Yoga is Essentially Spiritual.
2. It is a Darshana (Philosophy)
3. It is a Subtle Science.
4. It is an Art of Healthy Living.
5. It brings Harmony.
6. Yogic practices are mind centric

### The Fundamentals of Yoga

- Yoga works on the level of one's body, mind, emotion, intelligence and energy.
- This has given rise to following broad classifications of Yoga: Jnāna Yoga where we utilise the intelligence (Buddhi); Bhakti Yoga where we utilise the emotions (Bhava); Karma Yoga where we utilise the body (Shareera); Dhyāna Yoga where we utilise mind (Manas); and Kriya Yoga where we utilise the energy (Prana).
- Each system of Yoga we practice falls within the gamut of one or more of these categories.

### Yogic Practices for Health and Well-being

- The widely practiced Yoga sadhanas are: Yama, Niyama, Āsana, Prānāyāma, Pratyāhāra, Dhāraṇa, Dhyāna, Samādhi, Bandhās and Mudras, Shatkarmas, Yuktāhāra, Mantra-japa, Yukta-karma etc.
- Yama's are restraints and Niyama's are observances.
- These are considered to be pre-requisites for further Yoga practice.
- **Āsanās**, capable of bringing about stability and comfort to the body and mind, "kuryattadasanamsthairyam", involve, adopting various psychophysical body patterns and giving one an ability to maintain a body position (a stable awareness of one's structural existence) for a considerable length of time.
- **Prānāyāma** consists of developing awareness of one's breathing followed by wilful regulation of respiration as the functional or vital basis of one's existence.
  - It helps in developing awareness of one's mind and helps to establish control over the mind.
- **Bandhas and Mudras** are practices associated with Prānāyāma. They are viewed as the higher Yogic practices that mainly adopt certain physical gestures along with control over respiration.

## Principles of Yoga Therapy and Methods

- Yoga as a therapy (Chikitsa) is being practiced now as an alternative health care practice in many parts of the world. Yoga places great importance on a proper and healthy lifestyle whose main components are:
  1. **Ahara** – Yoga emphasises on the need for a healthy, nourishing diet that has an adequate intake of fresh water along with a well balanced intake of fresh food, green salads, sprouts, unrefined cereals and fresh fruits.
    - It is important to be aware of the need for a Satvic diet, prepared and served with love and affection.
  2. **Vihara** – Proper recreational activities to relax body and mind are essential for good health.
    - This includes proper relaxation, maintaining quietude of action-speech-thoughts and group activities wherein one loses the sense of individuality.
    - Karma Yoga is an excellent method for losing the sense of individuality and gaining a sense of universality.
  3. **Acharya**–Yoga stresses the importance of healthy activities such as exercise and recommends Asana, Pranayama and Kriyas on a regular basis. Cardio-respiratory health is one of the main by-products of such healthy activities.
  4. **Vichara**– Right thoughts and right attitude towards life is vital for well being. A balanced state of mind is obtained by following the moral restraints and ethical observances (Yama and Niyama).

## The Yoga therapy is based on the following doctrines and concepts:-

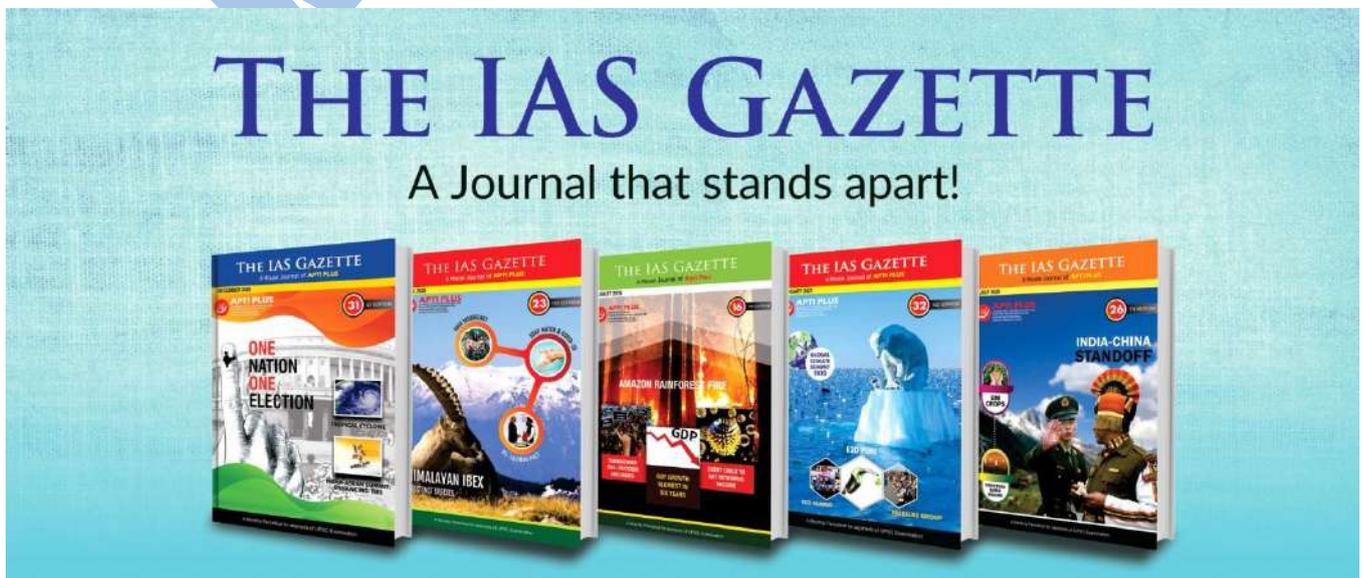
- a. Doctrine of “Chitta-vrittinirodha”, “Kriyayoga” and “Astanga” as found in Patanjali’s Yoga Sutras.
- b. Doctrine of “Panchakosha” (five sheaths/bodies) as found in Upanishads.
- c. Doctrine of various kinds of “Shuddhi” found in Patanjali Yoga Sutra and Hathayoga.
- d. Doctrine of opening blocked channels of vayus and prana (nadishuddhi), opening of lotuses and chakras, pranayamas, mudras and dristis as found in Hathayoga and Kundalini Yoga.
- e. Working with the mind on the lines of Patanjali Yoga Sutra, Mantra Yoga and Hathayoga.
- f. Working on the lines of “Karma-Jnana-Bhakti” from Bhagawadgita.
- g. Certain aspects of Tantra Yoga also get integrated in various Yoga practices.

## International Day of Yoga

- The United Nation’s Resolution adopted by the General Assembly on 11 December, 2014 forms the basis of the observation of International Day of Yoga (IDY), and it emphasises the potential of Yoga to secure health and wellbeing for all.

## Conclusion

- Yoga is the most perfect health and wellness module as it is comprehensive and holistic in its nature.
- Yogic principles of wellness help to strengthen and develop positive health enabling us to withstand stress better.
- This Yogic “health insurance” has achieved by normalising the perception of stress, optimising the reaction to it and by releasing the pent-up stress effectively through the practice of various Yogic practices.



# MIND MAPS

## Government's Initiatives regarding Rural Development

### Farmer-Centric



### Infrastructure



Skill Building and Education

Deen Dayal Upadhyaya  
Grameen Kaushalya Yojana  
(DDU-GKY)

The National Education Policy,  
2020

NISHTHA (National Initiative  
for School Heads' and  
Teachers' Holistic  
Advancement)

A scheme for Promotion of  
Innovation, Rural Industry &  
Entrepreneurship (ASPIRE)

Entrepreneurship and Skill  
Development Programmes  
(ESDP)

Score high in UPSC Mains with

**सक्षम 2022**

Programme includes:

- Answer Writing Skill development Initiative
- National Level Test Series Programme
- Personalized Mentorship by expert Faculty Members
- Subject-wise knowledge enrichment sessions

Batch starts from: 15<sup>th</sup> July 2021

For Registration visit: [www.aptiplus.in](http://www.aptiplus.in) or

**Call: 81007 65577**

