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GROUP 2 MAINS 2023

NATIONAL CURRENT AFFAIRS –PART 2

JULY 2022 – DECEMBER 2022

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3	Five Years Of Goods And Services Tax (Gst)
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1. ELECTION OF THE PRESIDENT

Under Article 62(1) of the Constitution, an election to fill a vacancy caused by the expiration of the term of office of the President shall be completed before the expiration of the term (5 years).

Election Process

1. The President is elected by an electoral college consisting of MPs of both Houses of Parliament and MLAs of the states and Delhi and Puducherry.
2. Nominated members of Rajya Sabha, Lok Sabha and the Assemblies, and members of state Legislative Councils, are not part of the Electoral College.
3. The election is held as per the system of proportional representation by means of a single transferable vote.
4. The winning candidate has to secure the required quota of votes to be declared elected, i.e., 50% of valid votes polled +1.
5. Anti-defection law is not applicable in the presidential election; thus, electors are not bound to vote along party lines.
6. Under Article 324 of the constitution, the Election Commission of India has the authority to conduct the presidential elections.

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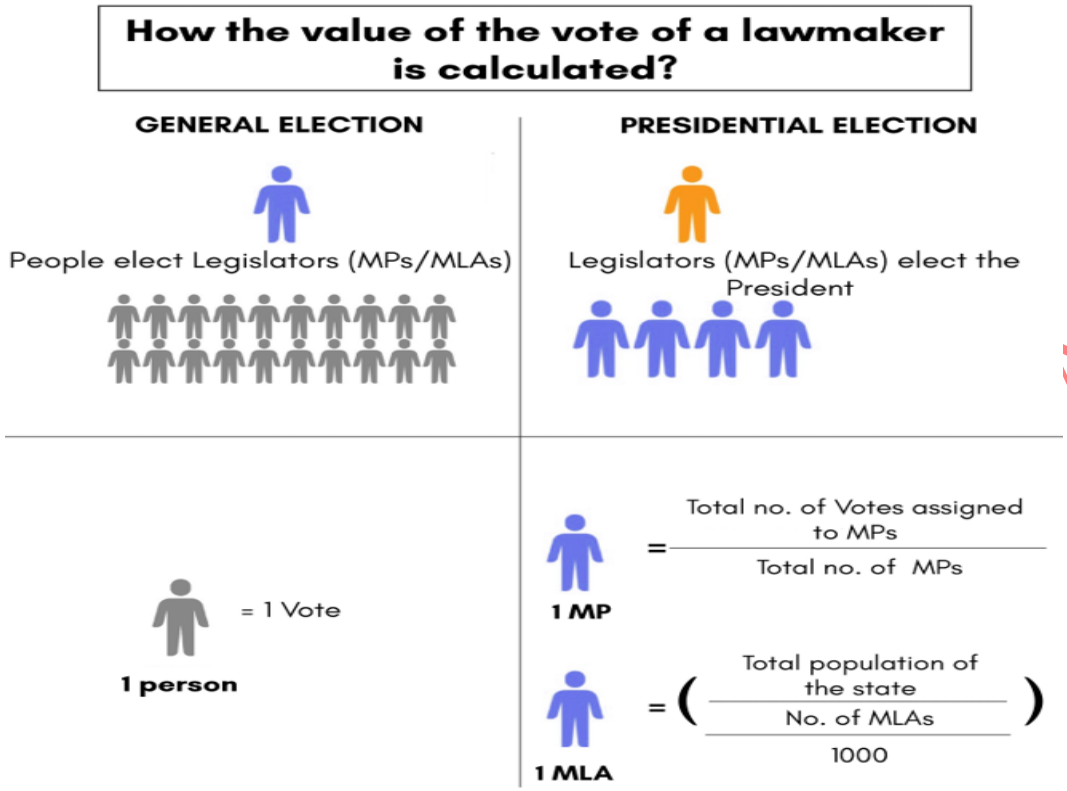

- The value of **the vote of each elector (MP/MLA) is predetermined**. For each MP, the value is fixed at 70.
- This time **the value of the vote of a Member of Parliament reduced to 700 from 708** due to the absence of a legislative assembly in Jammu and Kashmir.

2.DISTRICT LEGAL SERVICES AUTHORITIES (DLSAS)

1. PM recently addressed inaugural session of First All India District Legal Services Authorities (DLSAs) Meet.
2. DLSAs are established under Legal Services Authorities Act (LSA), 1987 to:
3. Provide free legal aid, organize Lok Adalats, Legal literacy camps etc,
4. Secure that opportunities for securing justice and fundamental rights are not denied to any citizens by reasons of poor economic conditions.

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5. There are a total of 676 DLSAs in the country. They are headed by District Judge who acts as Chairman of DLSA.
6. DLSAs also contribute towards reducing burden on courts by regulating Lok Adalats conducted by
7. National Legal Services Authority (NALSA).
8. Lok Adalat is an Alternative Disputes Resolution Mechanisms. It has been given statutory status under LSA.

About LSA, 1987

1. It was enacted to establish a nationwide uniform network for providing free and competent legal services to the weaker sections.
2. Article 39A provides for free legal aid to the poor and weaker sections of the society and ensures justice for all.
3. NALSA has been constituted under LSA to monitor and evaluate implementation of legal aid programmes and to lay down policies and principles for making legal services available under Act.

Free Legal Services/ Aid Authorities

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3. FIVE YEARS OF GOODS AND SERVICES TAX (GST)

01 July 2022, marked the fifth anniversary of the Goods and Services Tax (GST).

About Goods and Services Tax (GST)

1. GST is a comprehensive, multi-stage, destination based single domestic tax on the consumption of goods and services.
2. It was introduced through the Constitution (One Hundred and First Amendment) Act, 2016 for the 'One Nation, One Tax, One Market' regime.
3. Levied at every value addition point, it has subsumed several indirect Central and State/UT level taxes on goods and services (see image).
4. Some taxes are still out of its ambit such as- Excise Duty on Alcohol, Property Tax; Stamp Duty, Petroleum crude, Diesel, Petrol, Aviation Turbine Fuel, Natural Gas, Electricity Duty, Basic Custom Duty, etc.
5. Components of GST: Based on inter-state and intra-state, it has four components- Central GST (CGST), State GST (SGST), Union Territory GST (UTGST), and Integrated GST (IGST).
6. IGST is applicable on inter-state supply of goods and services while others are intra-state. It is governed by the Centre and divided between respective states.

GST Significance and Achievements

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A long-pending indirect tax reform, first discussed by the Kelkar Task Force report on indirect taxes in 2003, GST offers several advantages over the previous regime (see image).

Other Advantages:

1. Promotion of economic federalism through GST Council;
2. Ease of Doing Business through simplification of business processes and electronic tax fillings.
3. Real-time data reporting, allowing tax administrators to monitor tax compliances and potential revenue leakages.
4. Help exploring the unexplored areas of data analytics and audit through easy integration with other departments, regulators etc.

Achievements of GST:

a) Increase in tax base from 63.9 lakh taxpayers in 2017 to 1.38 crore in 2022.

b) Increased collection with GST as top contributor in central government revenues (₹5.9 lakh crore), followed by Excise Collection (₹3.90 lakh crore) and Customs duty (₹1.99 lakh crore).

c) Overall, increase in monthly average collections from ₹1.04 lakh crore in 2020-21 to ₹1.24 lakh crore in 2021-22.

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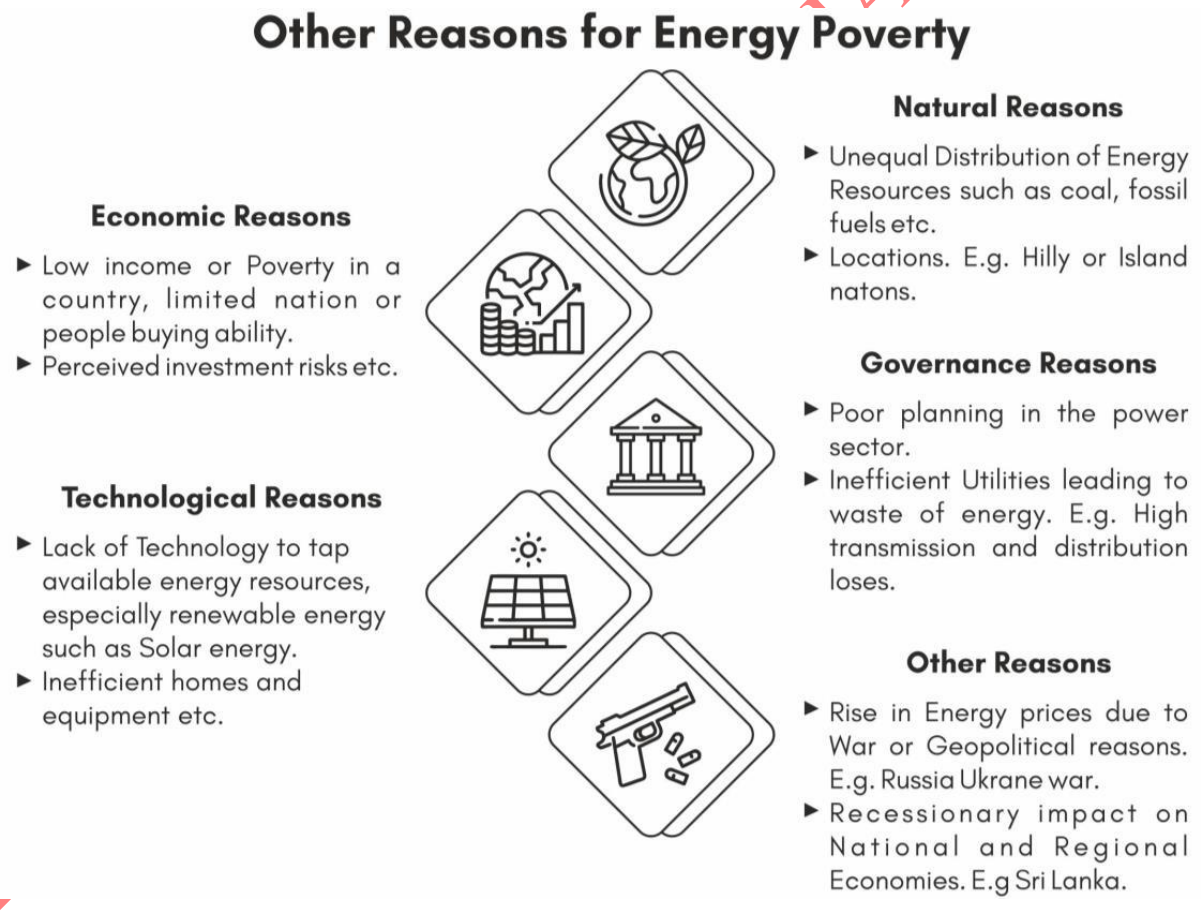
4. ENERGY POVERTY

1. At the G-7 Summit in Germany, the Indian Prime Minister highlighted the issue of energy poverty and the need for equal energy access for the impoverished global south and the rich global north.
2. Energy poverty, also referred as fuel poverty, is usually defined in two ways: Energy Accessibility, i.e., lack of access to electricity, and Energy Affordability, I.e., household dependence on inefficient and polluting energy sources such as burning of solid biomass.
3. Nearly three billion people are energy-poor people in Latin America, Asia, and Africa alone, and the risk of energy poverty in Europe and other parts have also increased due to rising energy prices.
4. The impacts of energy poverty include reduced standard of living and productivity, increased spending of money and time on energy resources, health impact, environmental

impact, political impact, and social unrest & impacts are universally felt across the globe, but the severity is more prominent in developing countries like India.

5. India has taken initiatives to make energy accessible and affordable, but it faces challenges such as the dominance of Atlantic countries in global energy governance, geostrategic issues, under-investments in fossil fuels, tightened environmental regulations, absence of distributive justice, and domestic challenges such as high import dependence, debt, slow pace of reforms, remote locations, and conflict between energy poverty and mitigating climate change.



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5. 11TH AGRICULTURE CENSUS (2021-2022)

1. Union Minister of Agriculture and Farmers Welfare recently launched 11th Agriculture Census (2021- 2022).
2. India's agricultural Census has been conducted since 1970-71 in collaboration with the States and Union Territories as part of a programme of World Census of Agriculture of FAO.
3. It is conducted every 5 years.
4. It is the main source of information on a variety of indicators, including the nature of operational land holdings, their size, distribution by class, land-use statistics, tenancy and Cropping patterns

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5. During the 11th census, for the first time, data collection will be conducted on smartphones and tablets.
6. This will help in faster and accurate enumeration.
7. Most states have digitized land records and surveys, which will further accelerate the collection of agricultural census data.
8. According to the 10th agricultural census (2015-16):

a) small and marginal farmers (less than two hectares of land) accounted for 86.2% of all farmers but owned just 47.3% of the crop area.
b) Land holdings continued to be inequitably distributed.

6. MILLETS

NITI Aayog and the World Food Programme (WFP), India, have launched the 'Mapping and Exchange of Good Practices' initiative for mainstreaming millets in Asia and Africa

About Millets

a) Millets are coarse grains and a repository of protein, fibre, vitamins and minerals.
b) Major producers include Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.
c) The Food and Agriculture Organisation (FAO) has endorsed India's call for declaring 2023 as the "International Year of Millets".

7. BHARATMALA PARIYOJANA PROGRAMME (BMP)

ICRA:

a) India's ambitious road connectivity project under BMP is expected to be completed in FY2028 with a delay of nearly 6

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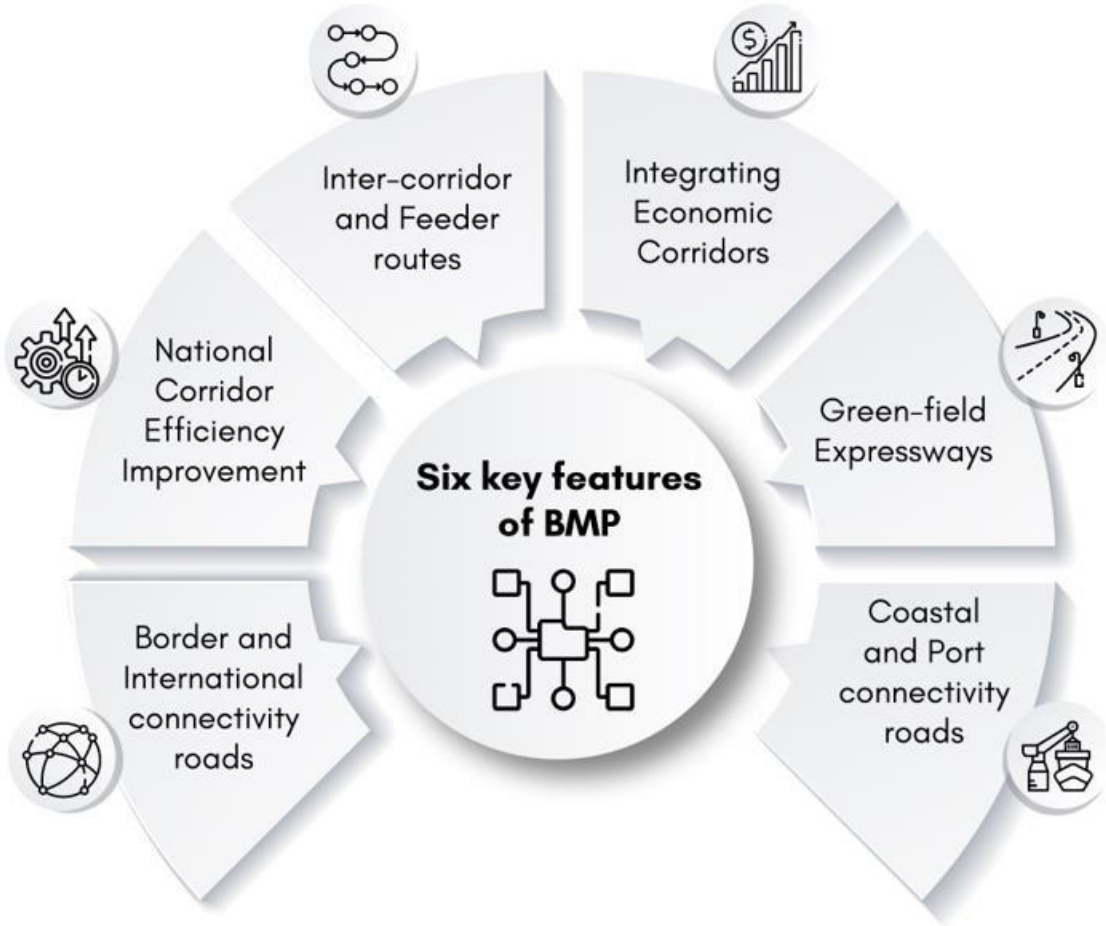
years. Initially, it was envisaged to be complete by FY2022, but only 23% of the project was complete, as on March 2022.

b) Major reasons for delay highlighted are delays in land acquisition and cost overruns, as well as an increase in the incidence of Covid-19 pandemic.



8. IMPACT OF CLIMATE CHANGE ON CHILDREN

1. The United Nations Children's Fund (UNICEF), the International Organization for Migration (IOM), Georgetown University, and the United Nations University have launched 'Guiding Principles for Children on the Move in the Context of Climate Change'.

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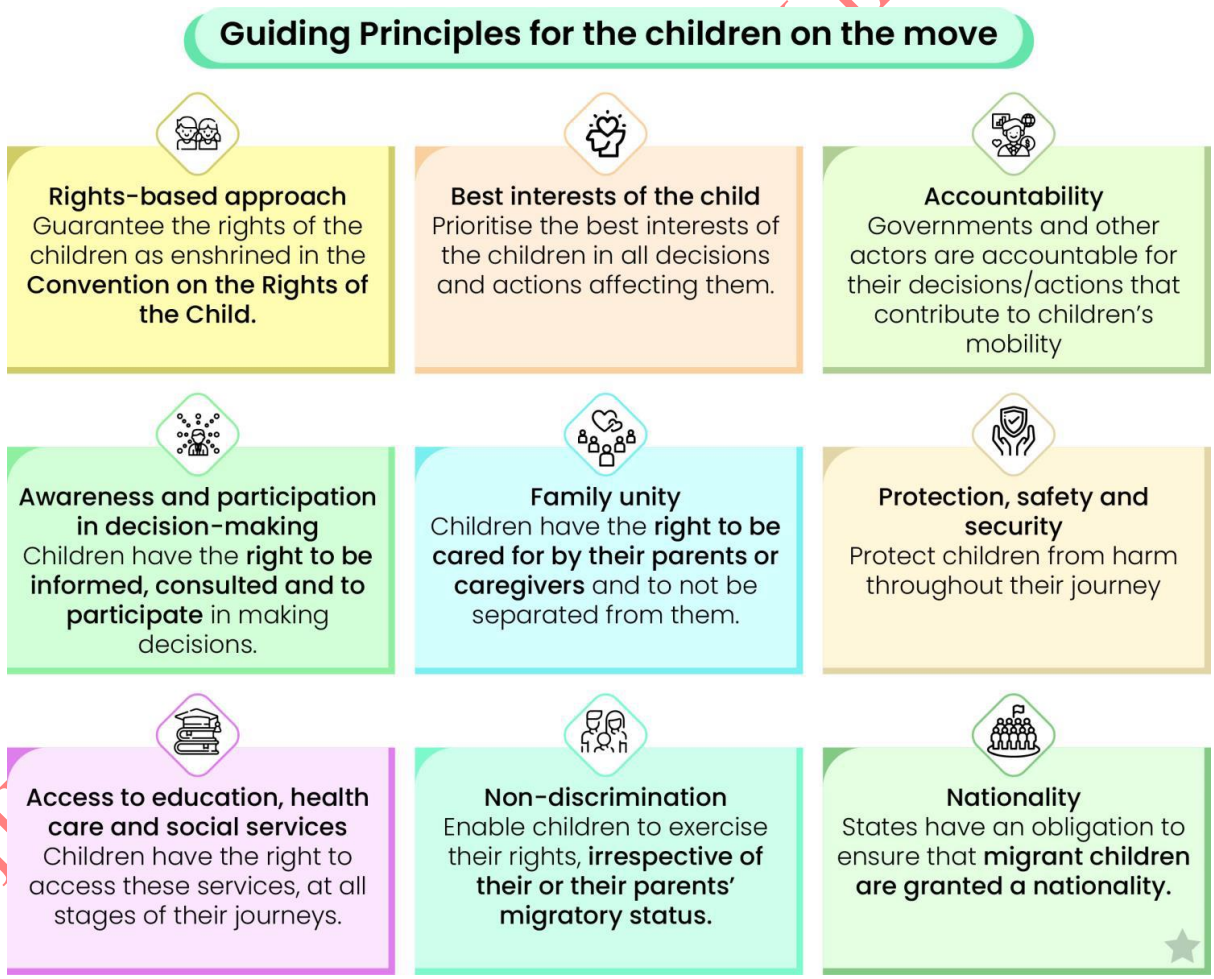
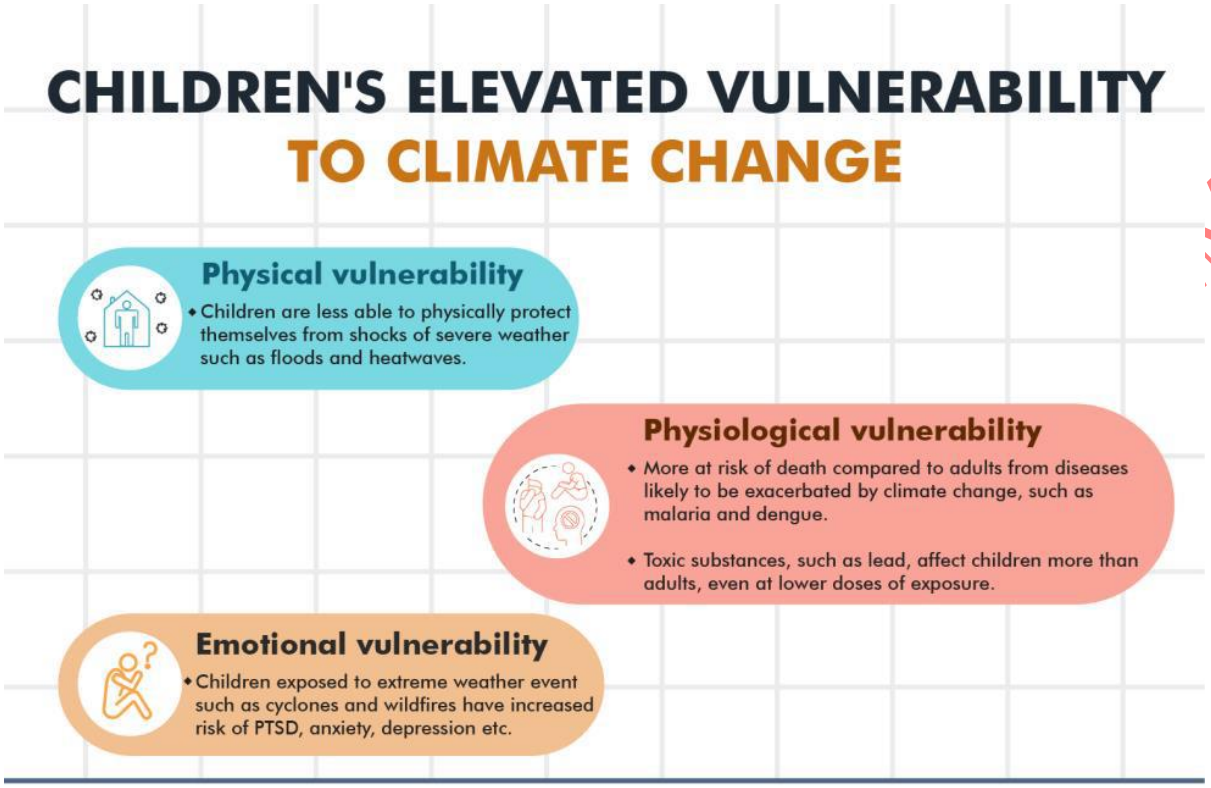
2. The new guidelines provide the first-ever global policy framework that will help protect, include, and empower children on the move in the context of climate change.
3. It provides a set of 9 principles that address the unique and layered vulnerabilities of children on the move both internally and across borders as a result of the adverse impacts of climate change.
4. The principles are derived from the Convention on the Rights of the Child, and do not create new international legal obligations.





9. 5 WETLANDS GET 'INTERNATIONAL IMPORTANCE' TAG & NEW RAMSAR SITES

These wet-lands include:

Wetlands	**State**
Karikili Bird Sanctuary	Tamil Nadu
Pallikaranai Marsh Reserve Forest	Tamil Nadu
Pichavaram Mangrove	Tamil Nadu
Pala wetland	Mizoram
Sakhya Sagar wetland	Madhya Pradesh

1. A wetland is defined as any land area that is saturated or flooded with water, either seasonally or permanently such

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as lakes, aquifers and marshes, mangroves, peatlands, estuaries, coral reefs, etc.

2. Criteria for a Ramsar site: A wetland must meet at least 1 of 9 criteria as defined by the Ramsar Convention such as supporting vulnerable, endangered, or critically endangered species or threatened ecological communities or, if it regularly supports 20,000 or more waterbirds among others.
3. Ramsar Convention adopted in 1971, is an intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.

NEW RAMSAR SITES

Recently, India has designated 26 new wetlands of international importance under the Ramsar Convention.

With this designation, now India has a total of 75 Ramsar sites

About Wetlands

1. A wetland is defined as any land area that is saturated or flooded with water, either seasonally or permanently.
2. As per Ramsar convention, wetlands include areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.
3. In comparison to manmade wetlands area in India, natural wetlands area is approximately two times.

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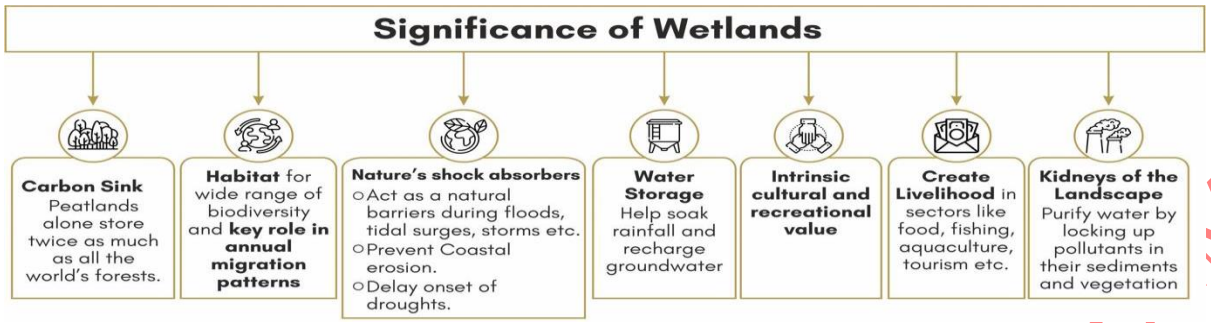

Threats to Wetlands in India

1. Pollution
2. Proliferation of invasive species.
3. Unsustainable harvesting of wetland resources
4. Unregulated development of tourism infrastructure and Climate change.

10. INDIA'S LARGEST FLOATING SOLAR POWER PROJECT

1. 100 MW Floating Solar Power Project has been operationalized at NTPC Ramagundam, Telangana, which is said to be India's largest floating solar power project.
2. The project is endowed with advanced technology as well as environment friendly features.

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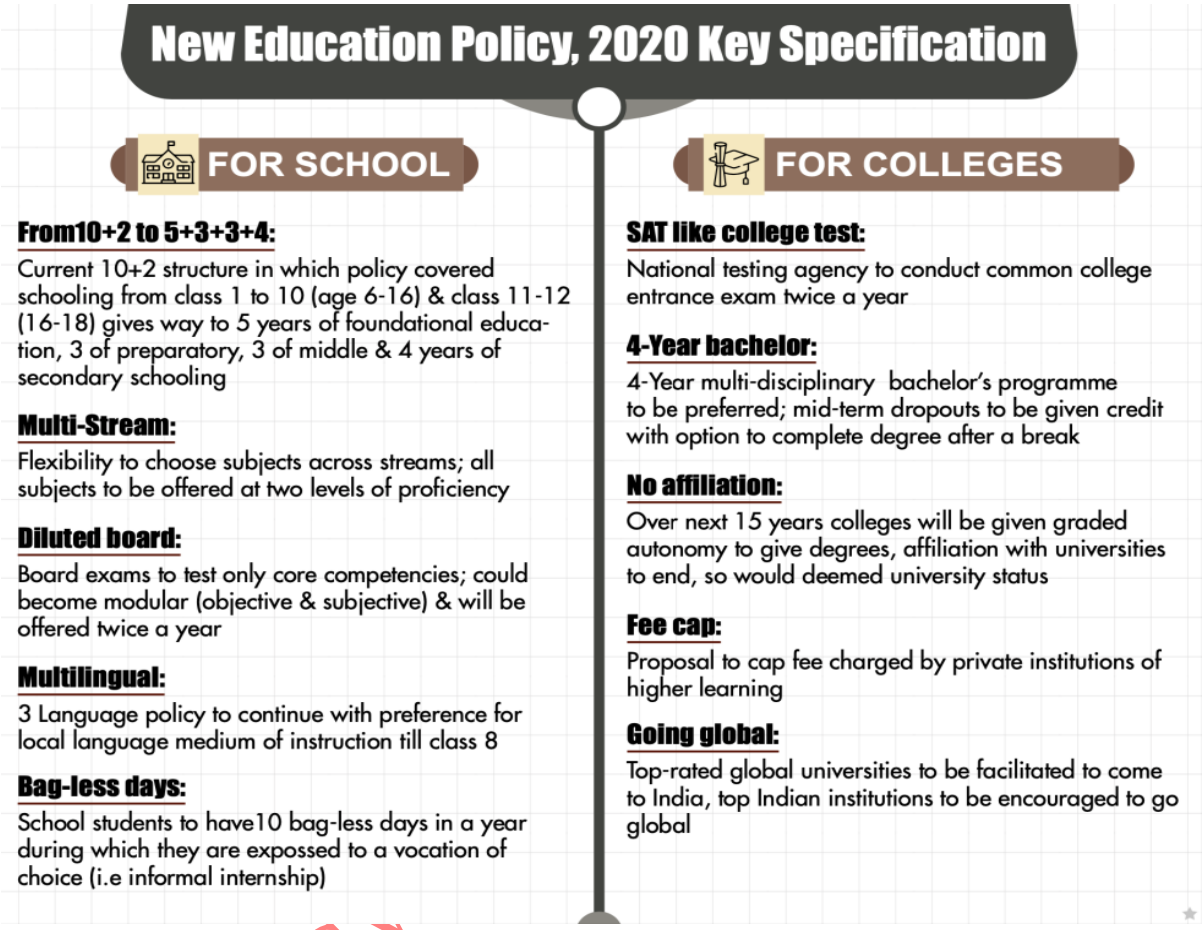
11. NATIONAL EDUCATION POLICY (NEP), 2020 & Challenges in successful implementation of NEP



Challenges in successful implementation of NEP

1. **Diversity of India's education sector**
2. **Financial resources**
3. **Legacy issues**
4. **Federalism**

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5. **Learning loss**
6. **Multilingualism**

12. GLOBAL GENDER GAP (GGG) REPORT, 2022

1. Released by World Economic Forum.
2. GGG index was instituted in 2006 and it aims to support the identification of the most effective policies to close gender gaps.
3. The Global Gender Gap Index benchmarks gender parity across four key dimensions or sub-indices — economic participation and opportunity, educational attainment, health and survival, and political empowerment.

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The gender score | India ranked 135 in gender parity out of 146 countries, according to the Global Gender Gap Report 2022 released by the World Economic Forum. A look at India's ranking in the four sub-indexes based on which the overall ranking was determined

India	Rank 2022*
Global gender gap index	**135**
Economic participation and opportunity	143
Educational attainment	107
Health and survival	146
Political empowerment	48

**out of 146 countries*

1,200 × 918

India's Report Card

Index/sub-index	2022 (146 countries)		2021 (156 countries)	
	Rank	Score	Rank	Score
Global Gender Gap Index	135	0.629	140	0.625
Political empowerment	48	0.267	51	0.276
Economic participation & opportunity	143	0.350	151	0.326
Educational attainment	107	0.961	114	0.962
Health and survival	146	0.937	155	0.937

Source: World Economic Forum

13. 14TH VICE-PRESIDENT (VP) OF INDIA

1. Jagdeep Dhankhar has been elected as the 14th VP of India.
2. VP is the second-highest constitutional post, provided under Article 63 of the constitution.

14.WORK FROM HOME (WFH)

NORMS

1. The Department of Commerce has notified new rule 43A for WFH in the SEZ Rules, 2006 which provides WFH for a certain category of employees including employees of

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IT/ITeS SEZ units, temporarily incapacitated, who are working offsite.

2. Under the new norms a company whose 50% or less employees opt for WFH can flexibly use this facility without submitting the attendance records with the SEZ development commissioner.

15.ENERGY CONSERVATION (AMENDMENT) BILL, 2022

The Energy Conservation (Amendment) Bill, 2022 was recently passed by the Lok Sabha.

i. The bill seeks to amend the Energy Conservation (EC) Act, 2001.

ii. 2001 Act was enacted to provide for Designated Consumers, Standard and Labelling of Appliances, Energy Conservation Building Codes, Creation of Institutional Set up (Bureau of Energy Efficiency) and Establishment of Energy Conservation Fund.

1. Further, 2001 Act was amended in 2010 through the Energy Conservation (Amendment) Act
2. 2022 Bill seeks to reduce fossil fuel-based energy consumption and resultant carbon emissions to the atmosphere.
3. **Key provisions of the new bill**

i. Mandating use of non-fossil sources of energy: like including Green Hydrogen, Green Ammonia, Biomass and Ethanol for energy and feedstock.

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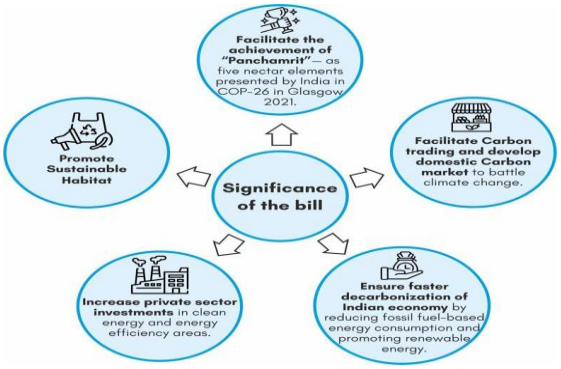
ii. It has been made mandatory for industries the transport sector (including railways) and commercial buildings.

iii. Establishing Carbon Markets



16.ETHANOL BLENDING

Prime Minister recently said that having achieved 10% Ethanol blending with petrol (E10) before schedule India has advanced the target of 20% blending by five years, to be accomplished by 2025.

Ethanol Blending programme (EBP) in India

1. Ethanol (ethyl alcohol) is a biofuel. It is formed by the fermentation of sugar sourced from sugarcane or other organic matter like food grains.
2. India started ethanol blending programme in 2003 with an aim to blend 5% ethanol in petrol in nine States and four UTs.
3. The 'National Policy on Biofuels', 2018 envisaged an indicative target of 20% ethanol blending in petrol (E20) by 2030. It has now been preponed to 2025.

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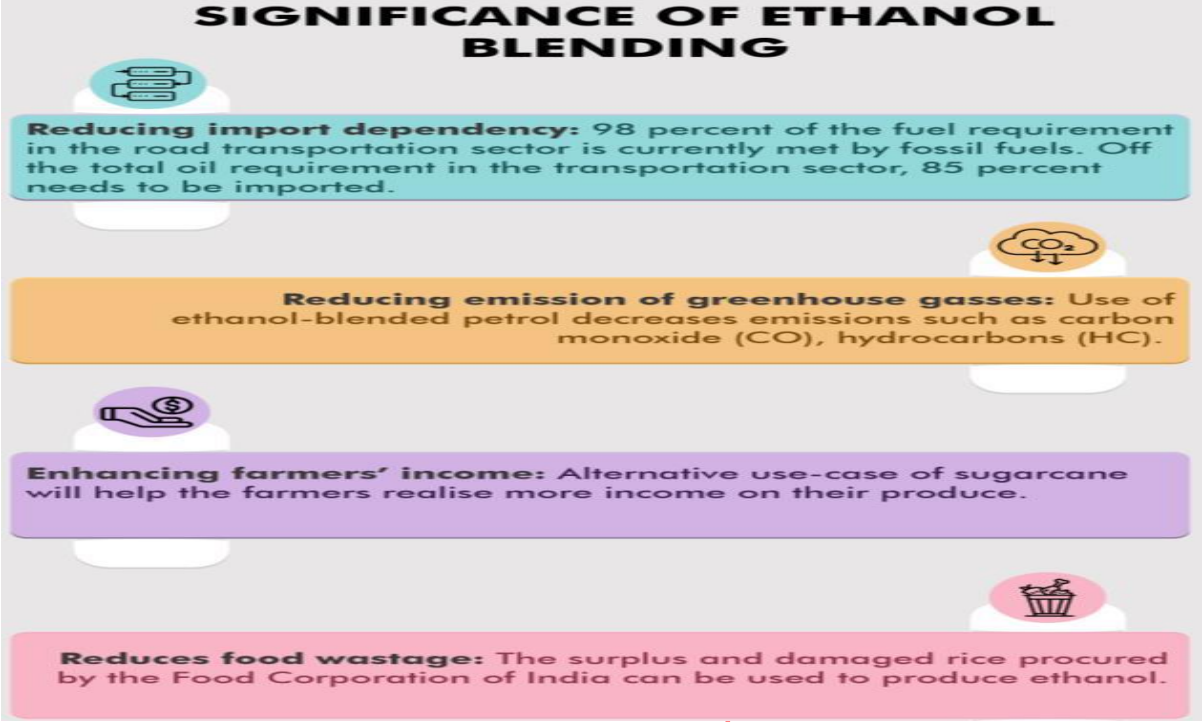

Challenges in ethanol blending

1. Food and water security:.
2. Compatible vehicles:
3. Delayed environmental clearance:
4. Issues in meeting carbon emission target:

Other issues:

1. Weather related issues:
2. Transport of ethanol
3. Need for extra storage tanks

Way ahead

1. Alternative to sugarcane:
2. Reducing the logistic cost:

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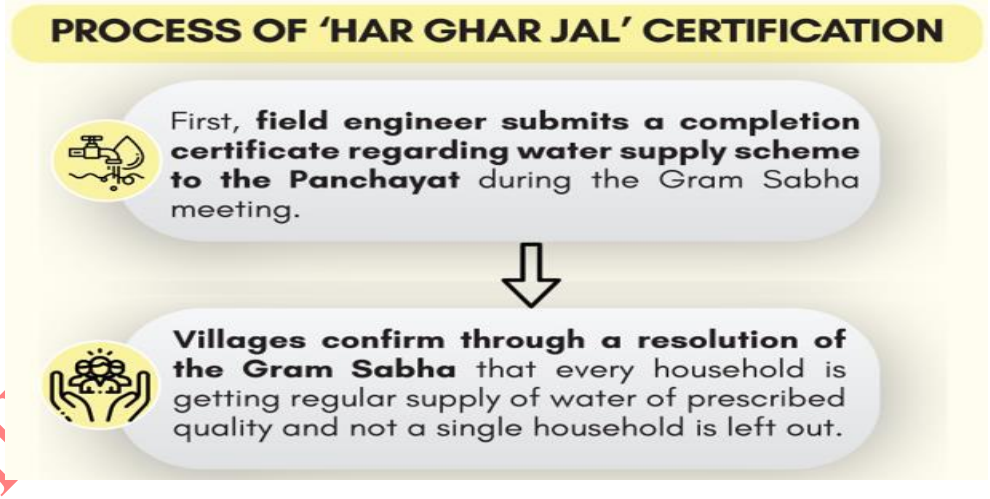
3. Infrastructure development:
4. Single Window Clearance:
5. Price incentive
6. Awareness generation

17.HAR GHAR JAL

1. Goa and Dadra & Nagar Haveli and Daman & Diu became the first 'Har Ghar Jal' certified State and UT in the country respectively.
2. 'Har Ghar Jal' is a flagship programme of the Union Government, implemented by Jal Jeevan Mission (JJM) under the Ministry of Jal Shakti, in partnership with States/ UTs to ensure tap water connection in every rural household by 2024.
3. More than 52% rural households in India are now connected with tap water which was only 17% at the time of programme's launch in 2019.



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18.OZONE LAYER

1. The US' National Oceanic and Atmospheric Administration (NOAA) found that the overall concentration of ozone-depleting substances (ODS) in the mid-latitude stratosphere in 2022 are back to those observed in 1980 before ozone depletion was significant.
2. Ozone concentration is commonly measured through Dobson Unit.

About Ozone Depleting Substances (ODS)

1. These are long-lived man-made chemicals which destroy the protective ozone layer.
2. The Montreal Protocol on Substances that Deplete the Ozone Layer (1987) regulates the production and consumption of ODS such as chlorofluorocarbons (CFCs), halons, methyl bromide (CH3Br), bromochloromethane (CH2BrCl) etc.
3. Uses of ODS: Refrigerators, air conditioners, fire extinguishers, foams etc.

19.PAALAN 1000

1. Government launches Paalan 1000 campaign and parenting app to focus on child health.
2. The 'Paalan 1000 - Journey of the First 1000 Days', focuses on the cognitive developments of children in the first 2 years of its life.

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20.UGC E-SAMADHAN PORTAL

1. University Grants Commission (UGC) will soon launch UGC e-samadhan, a single window for submitting grievances by merging the different portals and helplines that exist currently.
2. Aim is to fast-track resolution of complaints and monitor institutes that are slow in responding to them.

21.ADICHANALLUR

Recently, Archaeological Survey of India (ASI) has unearthed a gold diadem from a huge burial urn while excavating the museum site at Adichanallur, Tamil Nadu.

Importance of Adichanallur Site

1. Adichanallur is located on the lower valley of the Tamirabarani river in present-day Thoothukudi district in southern Tamil Nadu.
2. Korkai, ancient seaport mentioned in Sangam literature, is about 25 km from Adichanallur.
3. It is a megalithic site in Tamilnadu, the first site to be excavated in India by German explorer Andew Jagor in 1876 and later by Alexander Rea, a former superintendent of the ASI, in 1902-03.

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22.URBAN EMPLOYMENT GUARANTEE SCHEME (UEGS)

1. Rajasthan launched Indira Gandhi Urban Employment Guarantee Scheme.
2. This scheme would provide work for 100 days to the poor and needy families living in the cities.
3. Members aged between 18 and 60 years in the job card holder families will be eligible.

Importance of Urban Job Guarantees

1. Marginalisation of urban poor in policy making
2. Resolve low employment in urban areas
3. Tackle Persistent high inflation
4. Improve nature of jobs in urban areas
5. Secured jobs to women

Issues in implementation of Urban Employment Guarantee Schemes

1. Creating of skilled workforce:
2. Deciding beneficiaries
3. Selection of urban areas
4. Poor capacity or ULBs
5. Sustainability of urban areas
6. Growing Environmental Concerns

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23.INS VIKRANT

Prime Minister commissions India's first Indigenous Aircraft Carrier INS (Indian Naval Ship) Vikrant in Kochi.

About INS Vikrant

INS Vikrant was India's first aircraft carrier, bought from UK and commissioned in 1961.

1. It played an important role in several military operations - including 1971 war with Pakistan - before being decommissioned in 1997.
2. 'Vi' word denotes something that is distinctive or extraordinary, and 'krant' means to move or advance in a direction.

Vikrant is the largest warship ever been built in the maritime history of India.

1. It is also the first indigenously designed and built aircraft carrier for Indian Navy.
2. It is designed by Indian Navy's in-house Warship Design Bureau (WDB)
3. The only operational aircraft carrier with Indian Navy at present is INS Vikramaditya, which had served in erstwhile Soviet and, thereafter, Russian navy as Admiral Gorshkov before being inducted by India in 2013.

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24.AIR POLLUTION POLICY

The Centre has set a **new target of a 40% reduction in particulate matter concentration** in cities covered under the **National Clean Air Programme** (NCAP) by 2026, updating the earlier goal of 20 to 30% reduction by 2024.

About NCAP

1. It was launched in 2019 for reducing for comprehensive mitigation actions for prevention, control and abatement of air pollution.
2. It initially envisaged to achieve **targets of 20 to 30 % reduction in Particulate Matter (PM10 and PM2.5) concentration by 2024** across the country taking 2017 as the base year.
3. Under NCAP, **city-specific action plans have been prepared**
4. It is **implemented in 132 cities** in the country
5. **Other efforts in India to tackle air pollution**
    1. **Vehicular Emission**
    2. **Industrial Emission**
    3. **Air Pollution due to Dust and Burning of Waste**
    4. **Monitoring of Ambient Air Quality**
    5. **Monitoring the Implementation of NCAP**

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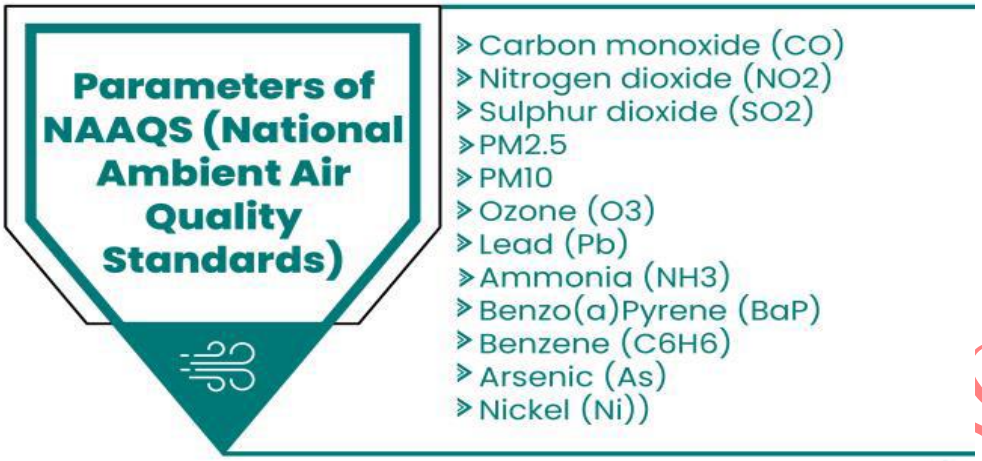

Swachh Vayu Sarvekshan

1. Ministry of Environment, Forest and Climate Change will launch **Swachh Vayu Sarvekshan** under National Clean Air Programme (NCAP).
2. It will rank 131 cities in the country for implementing City Action Plans prepared NCAP for **reducing air pollution upto 40% by 2025-26**.
3. Based on the self-assessment and third party assessment, **3 best performing cities in each group will be given cash award**.

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25.BLUE TRANSFORMATION

The Food and Agriculture Organization (FAO) released a document titled 'Blue Transformation - Roadmap 2022–2030'.

What is Blue Transformation?

1. Blue Transformation is a targeted effort by which agencies, countries and dependent communities, use existing and emerging knowledge, tools and practices **to secure and sustainably maximize the contribution of aquatic (both marine and inland) food systems (AFS) to food security, nutrition and affordable healthy diets for all**.

Outcomes envisioned in Blue Transformation Roadmap

1. **Reduce global fish loss and waste** by half by 2030.
2. 100% of fisheries **under effective management**.
3. All **illegal, unreported and unregulated activities to be phased out**.
4. At least **35% growth in global sustainable fish production** by 2030.
5. **Achieve full and productive employment** and decent work in the aquaculture sector **for all women and men by 2030.**
6. Significantly **increase global per capita fish consumption**, especially across global South.
7. Current and potential exporters in developing countries to **comply fully with import market requirements.**
8. **All forms of discrimination and abuse against women** throughout the value chain to be **phased out.**

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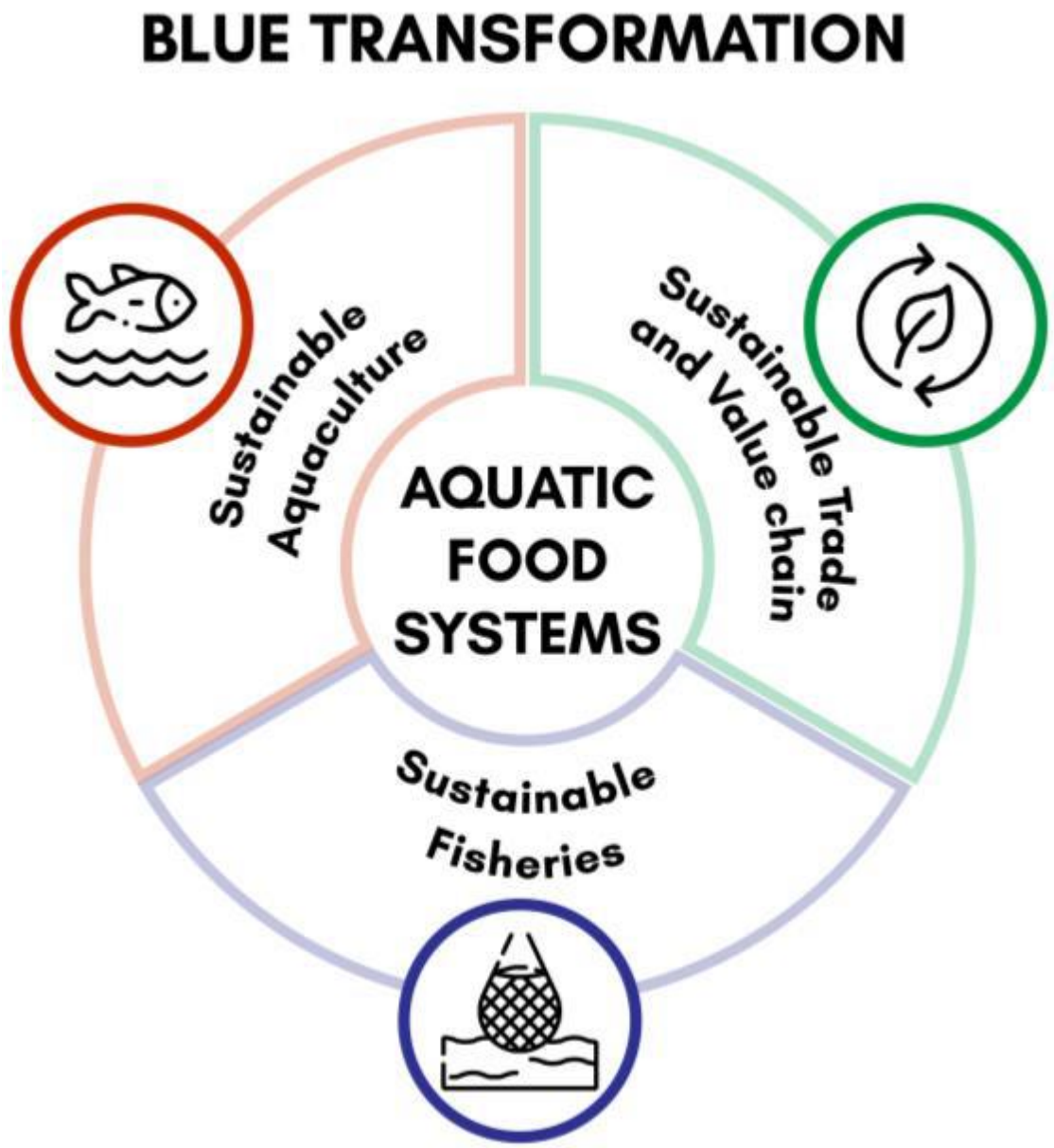

Steps taken in India towards Blue transformation

1. Pradhan Mantri Matsya Sampada Yojana (PMMSY)
2. River Ranching Programme
3. Blue Revolution
4. Fisheries and Aquaculture Infrastructure Development Fund (FIDF)
5. Inclusion of fishers and fish farmers under Kisan Credit Card (KCC) Scheme.

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Matsya Setu Apps

National Policy on Marine Fisheries, 2017 that provides the guidance to explore and sustainably use oceanic fishery resources in the Exclusive Economic Zone of India.

26.ONE WATER APPROACH

One Water approach, also referred to as Integrated water resources management (IWRM), is an **integrated planning and implementation approach to managing finite water resources** for long-term resilience and reliability.

1. It **recognizes all urban water supplies as connected resources** – surface water, groundwater, stormwater, and wastewater.
2. **Water is recycled and reused several times** in IWRM.
3. **It brings all diverse stakeholders together** to advance common-ground solutions **to combat water and urban ecology challenges.**
4. It is **multi-faceted approach** meaning that our **water-related investments** should **provide economic, environmental, and societal returns**.

27.SWACHH SUJAL PRADESH

1. **Andaman and Nicobar (A&N) Islands** have become **India's first Swachh Sujal Pradesh.**
2. Swachh Sujal Pradesh **certification (by Ministry of Jal Shakti) has three important components as:**
    a) **Safe and secure drinking water supply** andmanagement.

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b) **ODF (open defecation free) Plus:** ODF Sustainability and Solid and Liquid Wastem Management (SLWM), and

c) **Cross-cutting interventions** like convergence, IEC (Information, Education Communication), action planning, etc.

3. **All villages on A&N Islands** have received **Har Ghar Jal certification.**

28.JALDOOT APP

1. **Developed by:** Ministry of Rural Development.
2. The app will help **in identifying the ground water level in selected villages**.
3. This app will enable **Gram Rojgar Sahayak (GRS) to measure the water level of selected wells twice a year (pre-monsoon and post-monsoon).**
4. **Data collected could be utilised as part of the Gram Panchayat Development Plan (GPDP)** and Mahatma Gandhi NREGA planning exercises.

29.DARK SKY RESERVE

1. **Dark Sky Reserve is a place that has policies to ensure that a tract of land or region has minimal artificial light interference.**
2. **Department of Science & Technology has announced** setting up of **India's first dark sky reserve at Hanle** in Ladakh as a part of **Changthang Wildlife Sanctuary**.
3. It is **located in Ladakh's cold desert region** – away from any form of human disturbance.

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4. **Cloudless skies and low atmospheric water vapour** make it one of the best sites in world for astronomical observations.
5. It will be **one of the world's highest-located sites** for optical, infra-red, and gamma-ray telescopes.
6. It will **promote astronomy-tourism**, giving a boost to local tourism and economy through science.
7. **International Dark Sky Association**, a U.S.-based non-profit, **designates places** as International Dark Sky Places, parks, sanctuaries and reserves, **depending on criteria they meet.**

30.MONTREAL PROTOCOL

1. International Day for the Preservation of the Ozone Layer was celebrated on 16 September.

2. **Theme**: global cooperation protecting life on earth, **recognising impact of Montreal Protocol on climate change** and need to forge global cooperation to address climate challenges.

Ozone and Ozone-depleting substance (ODS)

1. **Ozone layer,** a fragile shield of gas, **protects the Earth from harmful portion of rays of sun,** thus helping preserve life on earth.
2. **Man-made chemicals** that have provided most of the chlorine and bromine for ozone depletion **are methyl bromide, methyl chloroform, carbon tetrachloride** and families of chemicals known as **halons, CFCs and hydrochlorofluorocarbons (HCFCs).**

Montreal Protocol

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1. **In 1985**, world's governments **adopted Vienna Convention for the Protection of the Ozone Layer**.
2. **Under the Convention's Montreal Protocol** (1987), governments, scientists and industry worked together **to cut out 99 per cent of all ozone-depleting substances (ODS).**
3. It is the **only UN treaty** ever that has been **ratified by all 198 UN Member States.**
4. **India became a Party to Montreal Protocol in 1992** and has successfully met phase out targets of all ODS as per Montreal Protocol Schedule.
5. **Montreal Protocol** led to **replacement of chlorofluorocarbons (CFCs) with Hydrofluorocarbons (HFCs)** which do **not destroy the Ozone layer but are extremely potent in causing global warming**.

31.KRITAGYA 3.0

a) It is a **national level hackathon to promote speed breeding for crop improvement** to ensure overall sustainability and resilience in crop production in India.

i. It will **encourage greater adoption of technology enabled solutions** in the country.

ii. It is **organised by Indian Council of Agricultural Research (ICAR)** with its National Agricultural Higher Education Project (NAHEP) and Crop Science Division.

32. ARTIFICIAL INTELLIGENCE IN EDUCATION (AIED)

UNESCO launched '**State of the Education Report for India, 2022: Artificial Intelligence in Education'.**

About the report

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1. 2022 report aims to guide stakeholders for **leveraging AI in Education** (AIED) systems and outlines **major opportunities and challenges for AI in the education system** in India.
2. This report is the **4th edition of the annual State of Education Report (SOER)** of UNESCO.

Key highlights of the report

1. **India's current status in AI**
2. **India's Potential in AI**
3. **AI & Women**
4. Report also focuses on **comprehensive and personalized intelligent tutoring systems (ITS)** and today's education system flaw in that **one-size-fits-all approach.**

Significance of AI in the education sector

Inclusion and ubiquitous access

Personalized & better learning outcomes

Bridging regional divide

Better professional environment for teachers

Informed educational policy making

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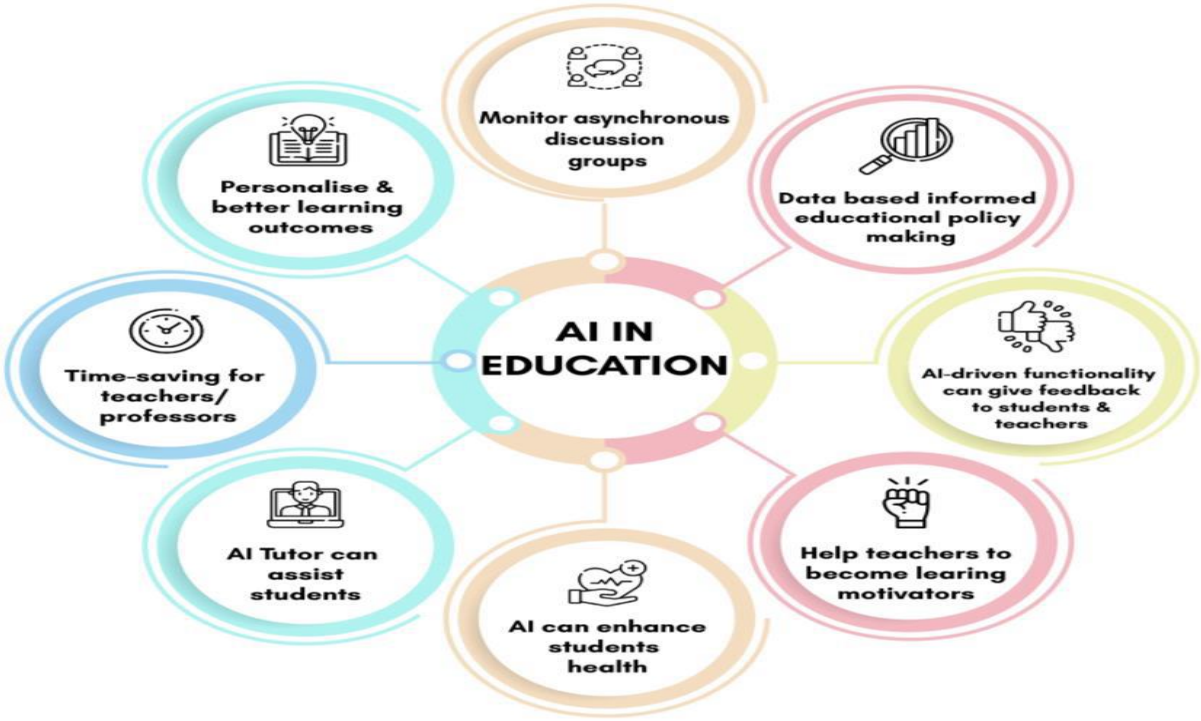

33.E-BAAL NIDAN PORTAL

1. National Commission for Protection of Child Rights (NCPCR) has **revamped the online portal E-Baal Nidan**.

2. E-Baal Nidan is a **Complaint Management System of NCPCR.** Through this, **any individual or organization can file complaint relating to the violation of child rights** through internet facilities.

3. Some of the revamped features include:

a) **Bifurcation of complaints** based on subject matters like POCSO, Labour, Education etc.

b) **Tracking of complaints at every stage** in a more mechanised and time bound manner.

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c) Option of **transferring complaints from NCPCR to the concerned State Commission.**

34.CENTRAL BANK DIGITAL CURRENCY

RBI has recently launched a pilot project on Central Bank Digital Currency (CBDC) and also issued a Concept Note on CBDC.

1. The purpose of the concept note is to create awareness about CBDCs
2. It explains the objectives, choices, benefits and risks of issuing a CBDC in India, referred to as e₹ (digital Rupee).
3. It called for the amendment of the Reserve Bank of India (RBI) Act, 1934 to include Digital Rupee in the definition of the term "bank note".

Two forms of CBDCs may be introduced:

1. **CBDC-Retail:** potentially available for use by all private sector, non-financial consumers and businesses.
2. **CBDC-Wholesale:** designed for restricted access by financial institutions. e-rupee can be structured as 'token based' or 'account-based'.

What CBDC is not?

3. **CBDC is not Mobile Money:** CBDC is different from the all other existing digital payment systems like UPI and other payment wallets, card payments and electronic fund transfers.

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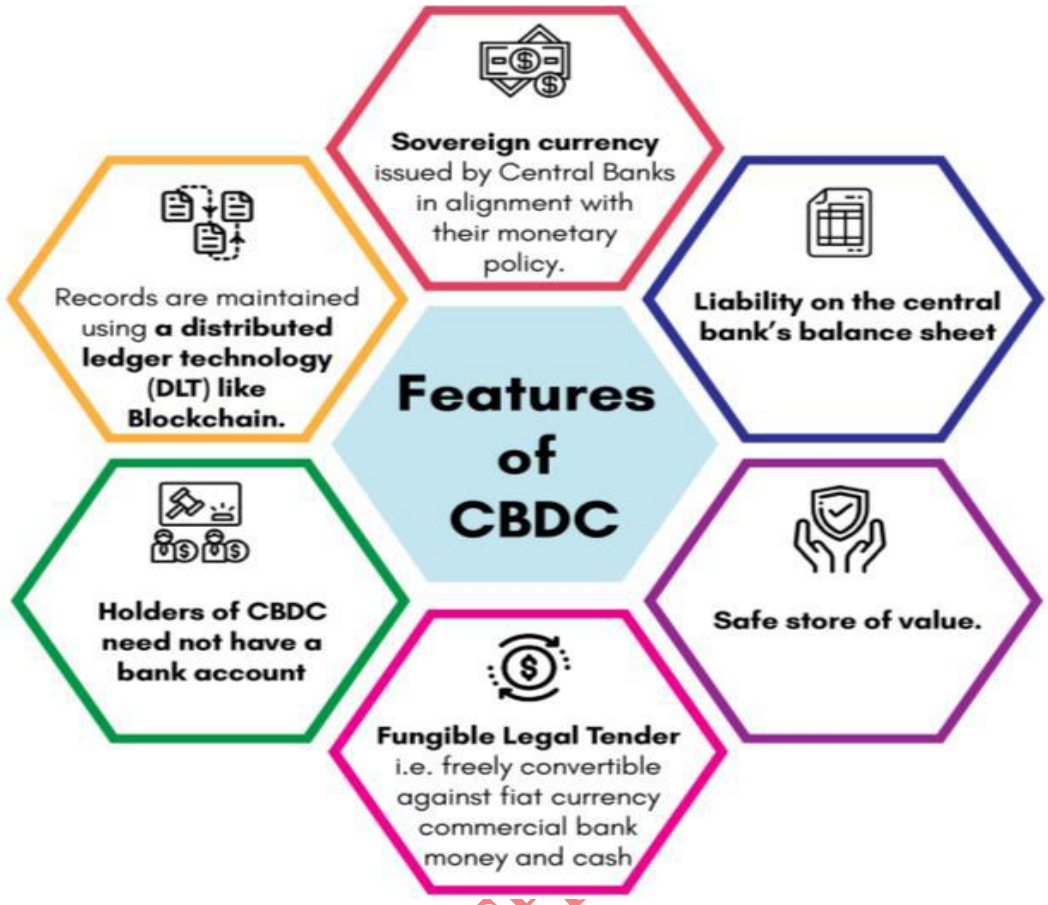

35.ONE NATION ONE FERTILISER (ONOF)

Ministry of Chemicals and Fertilizers launched Pradhan Mantri Bhartiya Jan Urvarak Pariyojana - One Nation One Fertiliser scheme.

About the scheme

1. This scheme aims at marketing fertilisers in the country under 'Bharat' brand name.
2. Under the scheme, all subsidized soil nutrients - urea, di-ammonium phosphate (DAP), Muriate of Potash (MOP), and NPK - will be marketed under the single brand Bharat.

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3. The uniform design of bags across the country will now mention them as 'Bharat urea', 'Bharat DAP', 'Bharat MOP', 'Bharat NPK' and so on.

4. This is applicable to all fertilizer companies, State Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs).

5. Scheme outlines the specifications of the new packaging for companies

6. The new "Bharat" brand name and PMBJP logo will cover two-thirds of the front of the fertiliser packet.

7. The manufacturing brands can only display their name, logo, and other information on the remaining one-third space.

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Issues in Fertilizer sector in India

1. High Fiscal Burden
2. Large unpaid subsidy backlogs
3. Import Dependency of Fertiliser sector
4. Ecological impact of excessive fertiliser usage
5. Over regulations
6. Limitation for private sectors

36.INDIA'S GREEN GDP

1. As per a recent RBI paper, Green GDP is growing faster (6.27% and 6.61% in the 2000s and 2010s) than traditional GDP (6.34% and 6.71%, respectively), as India took measures to cut carbon emissions, improve resource use efficiency and boost clean energy capacity.

2. Green GDP considers estimates for environmental degradation, depletion of natural resources, and savings of resources and environment into the national income accounts.
3. It involves subtraction of carbon emission cost, opportunity cost of waste generated, and adjusted savings of natural resource depletion from GDP.
4. United Nations first proposed idea of green GDP in 1993.

Advantages of measuring Green GDP

i. Put emphasis on maintaining a balance between country's growth aspirations and environmental protection.

ii. Helps to take holistic view, as traditional GDP calculation ignores cost of degradation of environment.

iii. Helps in policy engineering to ensure sustainable development.

37.MISSION LIFE (LIFESTYLE FOR ENVIRONMENT)

The Prime Minister (PM) launched Mission LiFE (Lifestyle for Environment) at the Statue of Unity at Kevadia, Gujarat to protect the environment.

About Mission LiFE:

1. Objectives and Implementation Mission LiFE is an India-led global mass movement which aims to nudge individual and collective action to protect and preserve the environment.
2. Its concept was introduced by the PM at the United Nations Framework Convention on Climate Change (UNFCCC) COP-26 (Conference of the Parties) in Glasgow.

Objective:

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1. Mobilise at least 1 billion Indians and other global citizens to take individual and collective action for protecting and preserving the environment in the period 2022 to 2027.
2. Within India, at least 80% of all villages and urban local bodies are aimed to become environment-friendly by 2028.
3. Mission Duration: It will run as a 5-year programme, visualizing three core shifts in our collective approach towards sustainability (see image).
4. In 2022-23, the mission will focus on Phase I

Implementation:

1. NITI Aayog will curate and incubate Mission LiFE in the first year.
2. Subsequently, it will be implemented by the Ministry of Environment, Forest and Climate Change (MoEFCC) in a non-linear and non-sequential manner.

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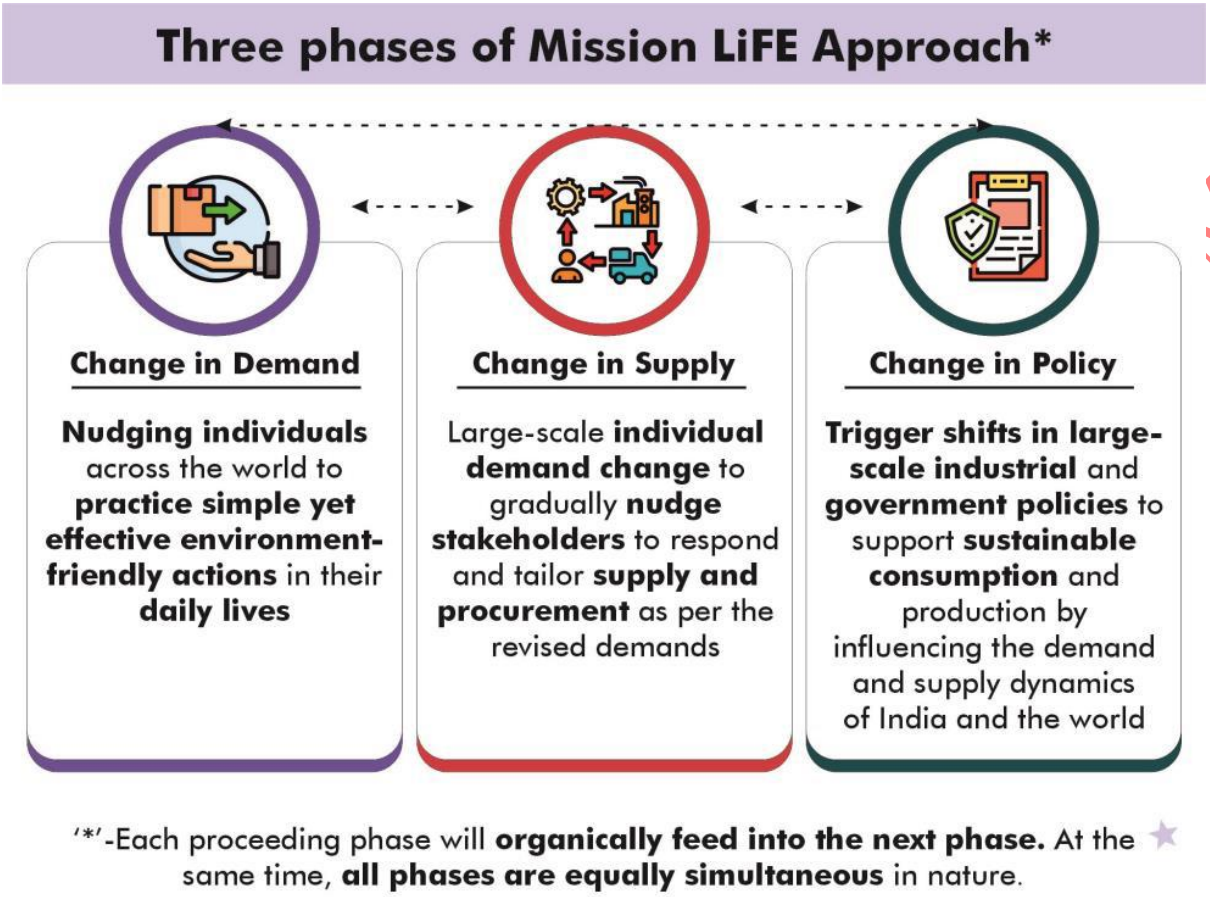

38.URBAN FLOODING

Amid flooding in major metropolitans of India, the Centre highlighted the success of two cities- Davanagere (Karnataka) and Agartala (Tripura) - as cities which have curbed urban flooding.

Urban Flooding

1. Urban Flooding is defined as an excessive runoff in developed urban areas, where the stormwater doesn't have anywhere to go due to poor capacity of the drainage system, causing inundations.
2. It is a combination of three aspects- Heavy Rain, developed surfaces and insufficient capacity of drains.

3. It is significantly different from rural flooding as the developed catchments of urban areas increase the flood peaks from 1.8 to 8 times and flood volumes by up to 6 times.
4. This is because of the greater presence of various causes of urban floods which can be divided into 3 parts-

Meteorological Factors:

i. Unprecedented Rainfall
ii. Coastal Erosion
iii. Global Warming

Hydrological Factors:

Human (Anthropogenic) Factors:

i. Poor Urban Planning and Implementation
ii. Encroachments over natural drains and river floodplains
iii. Administrative issues
iv. Urban Heat Island effect
v. Urban Heat Island effect

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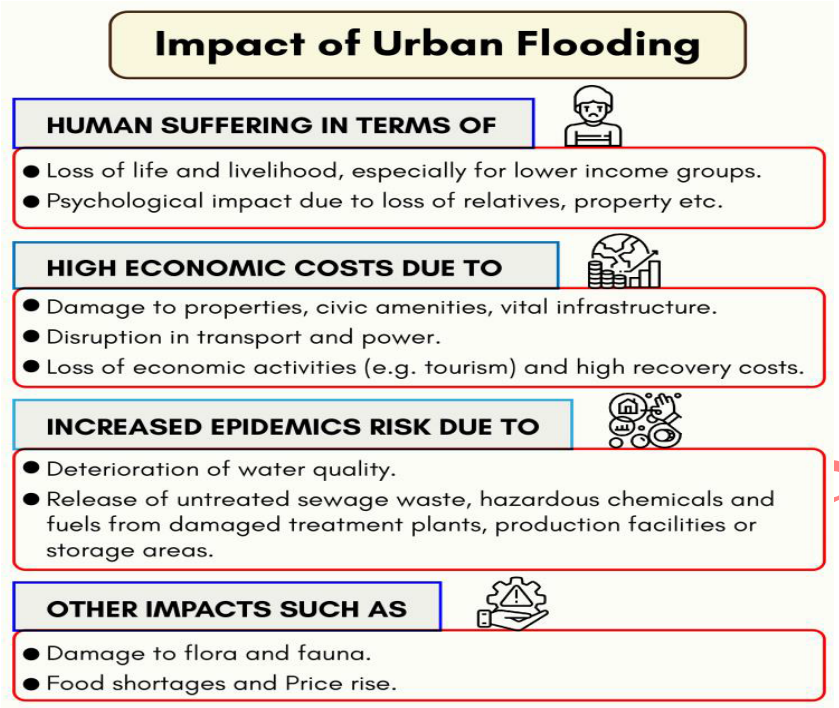
vi. Illegal Mining of River Sand and Quartzite



39.GREEN CRACKERS

1. Green crackers cause 30 per cent less air pollution as compared to traditional ones.

2. They reduce emissions substantially and absorb dust and don't contain hazardous elements like barium nitrate.

3. There are three categories of green crackers:

i. **SWAS** - Safe Water Releaser.

ii. **STAR** – Safe Thermite Cracker**.**

iii. **SAFAL** – Safe Minimal Aluminium

4. These can **be produced by licensed manufacturers**, approved by **CSIR**.

5. Additionally, **Petroleum and Explosives Safety Organisation** is **tasked with certifying** that crackers are made without

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arsenic, mercury, and barium, and are not loud beyond a certain threshold.

40.BLUE FLAG BEACHES

1. The globally recognized International eco-label "Blue Flag", has been accorded to two new beaches – Minicoy Thundi Beach and Kadmat Beach- both in Lakshadweep.
2. This takes the number of beaches certified under the Blue Flag certification to 12.

About Blue Flag tag or Blue Flag certification:

1. Certification is awarded by the Denmark-based non-profit Foundation for Environmental Education or FEE.

2. Award is based on compliance to **four main categories**:

i. Environmental Education and Information;

ii. Water Quality;

iii. Environmental Management;

iv. Safety and Services.

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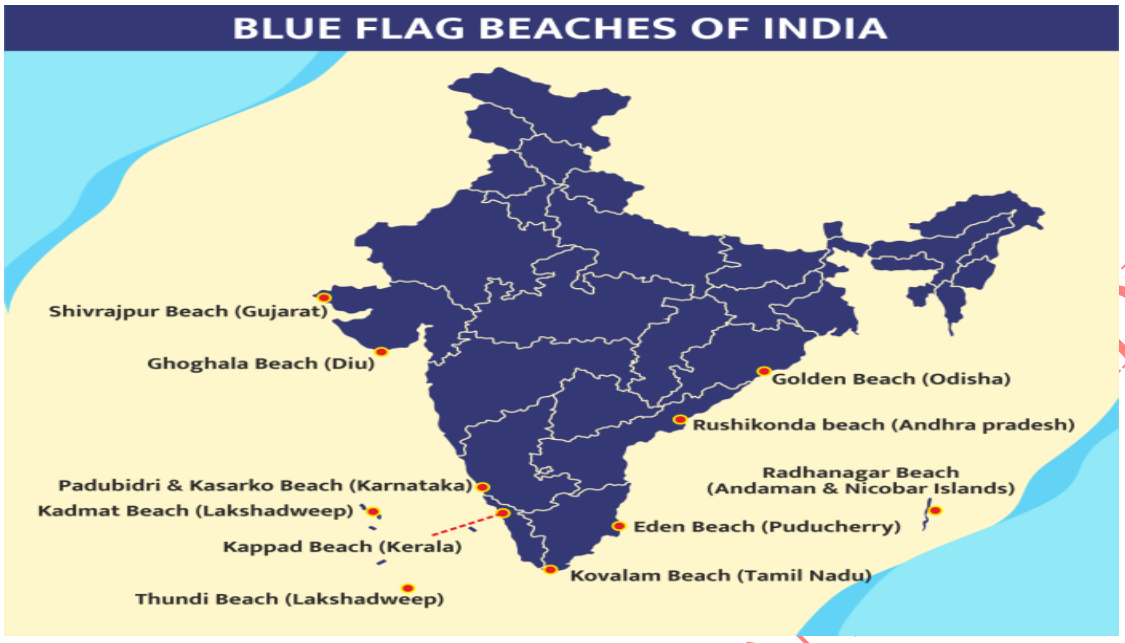

41.SOCIAL MEDIA AND CIVIL SERVANTS

How have Civil Servants been using Social Media?

Very broadly, social media can be defined as any web or mobile based platform that enables an individual or agency to communicate interactively and enables exchange of user generated content. E.g., Meta, Twitter, Instagram etc.

Civil Servants have generally been using it in the following ways:

1. Connecting with citizens
2. Sharing information and improving awareness
3. Understanding public viewpoint
4. Personal usage:

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Merits of using social media by civil servants	**Demerits of using social media by civil servants**
Accessible to the Common People: Public service delivery Better policy making: Create a Positive outlook: Awareness:	Principle of Neutrality and Anonymity: Inconsistent with the parliamentary form of government: It can blur the distinction between an individual's professional and private identity: Undue self-promotion:

42.ECONOMICALLY WEAKER SECTIONS (EWS) QUOTA

The Supreme Court Constitutional Bench upheld validity of 103rd Constitutional Amendment which introduced 10% quota for EWS in education and public employment.

EWS quota

1. EWS reservation was granted based on recommendations of Sinho commission (submitted report in 2010).
2. 103rd Amendment Act 2019 inserted Articles 15(6) and 16(6) in Constitution to provide reservation to EWS among non-OBC and non-SC/ST sections of the population.
3. Act amended Article 15 to additionally permit government to provide for advancement of EWS.

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4. The Act also amended Article 16 to permit the government to reserve up to 10% of all posts for the "economically weaker sections" of citizens.
5. EWS reservation is in addition to existing reservation.

43.INITIATIVES LAUNCHED UNDER ECOURT PROJECT

Newly launched projects include:

1. Virtual Justice Clock
2. JustIS Mobile App 2.0
3. Digital court
4. S3WaaS Websites
5. E-Courts Mission Mode Project (2007)
6. E-Committee
7. Other initiatives: National Judicial Data Grid NJDG, Virtual Courts, live-streaming of proceedings etc.

44.ROHINI 200 ROCKET (RH 200)

1. RH-200 sounding rocket of ISRO recorded 200th consecutive successful flight.
2. Sounding rockets are used by the scientific community for carrying out experiments on meteorology, astronomy and similar branches of space physics.
3. First sounding rocket to be launched from India was American Nike-Apache in 1963.
4. ISRO launched its own version, Rohini RH-75, in 1967.
5. RH 200 is a solid motor-powered expendable rocket capable of climbing up to a height of 70 km bearing payloads designed to study the upper atmosphere.

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45.INDIA AND COP27

India has submitted its Long- Term Low Emission Development Strategy (LTLEDS) to the United Nations Framework Convention on Climate Change (UNFCCC) recently.

India's Long-Term Low Emission Development Strategy (LT-LEDS)

1. India's LT-LEDS lays out the steps to achieve net zero by 2070 and rests on 7 key transitions to low-carbon development pathways.
2. Parties to the UNFCCC agreed to formulate and communicate long-term low greenhouse gas emission development strategies (LT-LEDS) under Article 4.19 of the Paris Agreement.
3. LT-LEDS are formulated mindful of Article 2 taking into account common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.
4. During COP 26 at Glasgow, Parties that have not yet done so had been urged to communicate their LT-LEDS by COP 27.
5. India's LT-LEDS is also informed by the vision of LiFE, Lifestyle for the Environment, that calls for a world-wide paradigm shift from mindless and destructive consumption to mindful and deliberate utilization.

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India's Long-Term Low Emission Development Strategy (LT-LEDS)

Concerns raised by India in COP 27

1. Gap in operationalizing the principles of equity and climate justice
2. Mindless consumption and utilization of carbon budget
3. Developmental needs of developing countries should be given due consideration
4. Introduction of carbon border measures
5. Extending the scope of mitigation to agriculture under Koronivia Joint Work on Agriculture (KJWA
6. Selective singling out of sources of
7. Unclear definition of climate finance:

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Shortage of climate finance

Long-Term Low Emission Development Strategy (LT-LEDS)

Elements	Current policies and targets
Low carbon development of electricity systems consistent with development	■ **NDC Target: 50% of non-fossil capacity by 2030.** ■ **Renewable Purchase Obligations** for distribution companies, open access consumers and captive power plants. ■ **Green energy corridors** to strengthen transmission networks in 8 Renewable Energy (RE) rich States. ■ **A three-fold rise in nuclear installed capacity by 2032.**
Integrated, efficient, inclusive low-carbon transport system	■ **20% ethanol blending in petrol by 2025.** ■ **Indian Railways to become net-zero by 2030.** ■ Leapfrogging to directly reach Bharat Stage VI emissions. ■ A National Master Plan for Multi-modal Connectivity - PM Gati Shakti.
Adaptation in urban design, energy and material-efficiency in buildings, and sustainable urbanisation	■ **National Urban Policy Framework (NUPF).** ■ National Building Code, Energy Conservation Building Code, Eco-Niwas Samhita (an energy conservation building code for residential buildings). ■ India Cooling Action Plan ■ **National Mission on Sustainable Habitat.** ■ Extended Producer Responsibility 2021, and Plastic Waste Management (Amendment) Rules 2021.
Economy-wide decoupling of growth from emissions and development of an efficient, innovative low-emission industrial system	■ **National Missions for Enhanced Energy Efficiency** and Sustainable Habitat, **Standards and Labelling Scheme,** and the **Energy Efficiency Financing Platform.** ■ Fuel switching through promotion of natural gas and the **National Policy on Bio-Fuels.** ■ Material efficiency through policies on resource efficiency, plastic and e-waste, and steel recycling. ■ **Green hydrogen technology** and infrastructure promotion.
CO2 removal and related engineering solutions	■ R&D and building human and infrastructure capacity to evolve technologies and methodologies like **Carbon Capture Utilisation and Storage (CCUS).**
Enhancing Forest and vegetation cover consistent with socio-economic and ecological considerations	■ **NDC target:** Create an **additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent by 2030.** ■ Other voluntary contributions: • **To restore 26 million ha degraded land by 2030.** • **12 National Biodiversity Targets, in line with 20 global Aichi biodiversity goals.** ■ Major policies and institutions: National Mission for a Green India, **National Afforestation Programme, Nagar Van Yojana, National REDD+ (Reducing Emissions from Deforestation and forest Degradation) Strategy 2018** etc. ■ Major **greening efforts of the National Highways Authority of India (NHAI) and Indian Railways.**
Economic and financial aspects of low-carbon development	■ **Business Responsibility and Sustainability Report (BRSR) by SEBI** for mandatory sustainability reporting. ■ Inclusion of Renewable energy projects under Priority Sector Lending (PSL). ■ **Sustainable Finance Group established by RBI** to lead regulatory initiatives in the area of investments linked to climate risk and sustainable finance.

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46.E-WASTE (MANAGEMENT) RULES 2022

The Ministry of Environment, Forest and Climate Change (MoEF&CC) has notified E-waste (management) Rules 2022, in the exercise of the powers conferred by the Environment (Protection) Act, 1986.

Key Provisions mentioned in E-waste (management) Rules 2022

Definition:

'E-waste' means electrical and electronic equipment, whole or in part discarded as waste, as well as rejects from manufacturing, refurbishment and repair processes.

Application:

These rules shall apply to every manufacturer, producer, refurbisher, dismantler, and recycler involved processing of e-waste with certain exceptions (refer infographic).

Registration:

The manufacturer, producer, refurbisher, or recycler of the e-products need to compulsorily register with Central Pollution Control Board (CPCB).

Extended Producer Responsibility Certificates:

1. Rules aim to incentivize registered electronic waste recyclers by introducing Extended Producer Responsibility (EPR) certificates (which were not part of 2016 Rules).
2. EPR means responsibility of any producer of electrical or electronic equipment for meeting recycling targets to ensure environmentally sound management of e-waste.

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Monitoring: CPCB shall conduct random sampling of electrical and electronic equipment placed on the market to monitor and verify the compliance of reduction of hazardous substances provisions.

Environmental Compensation: CPCB shall also lay down guidelines for the imposition and collection of environmental compensation on the producer in case of non-fulfilment of obligations.

Responsibilities:

Manufacturers	• Make the **end product recyclable.** • **Component** made by different manufacturers should be **compatible with each other.**
Producers	• **Obtaining and implementing extended producer responsibility targets** (**at least 60% of their electronic waste** is collected and **recycled by 2023** with increasing them to 70 and 80 percent in 2024 and 2025, respectively). • **Creating awareness.**
Recycler	• Ensuring that the recycling **processes and facilities are in accordance with the regulatory standards.** • **Maintain a record** of e-waste collected.
State government	• They have to **earmark space for e-waste dismantling and recycling** in the existing and upcoming industrial parks, estates, and industrial clusters. • **Undertaking industrial skill development** and establishing

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	measures for protecting the health and safety of workers engaged in the dismantling and recycling facilities for e-waste.

47.INTERNATIONAL YEAR OF MILLETS (IYM) 2023

The Food and Agriculture Organization (FAO) of the United Nations, organized an opening ceremony for the International Year of Millets – 2023 (IYM2023) in Rome, Italy.

About millets

1. Millets are a diverse family of small-grained cereals (Poaceae family), indigenous to various parts of India.
2. They are popularly known as Nutri-cereals as they provide most of the nutrients required for normal functioning of the human body.
3. They contain 7-12% protein, 2-5% fat, 65-75% carbohydrates and 15-20% dietary fibre.
4. Before the Green Revolution, millets were one of the largest grown staples in India, cultivated on 37 million hectares of land.
5. Now, down to 14 million hectares, millets have been reduced to a marginal fodder crop to feed livestock.
6. With an annual production of approximately 16 million tonnes. India produces 20% of the globe's production that is led by Africa and the Americas.
7. India exports millets products worth of USD 34.32 million during 2021-22.

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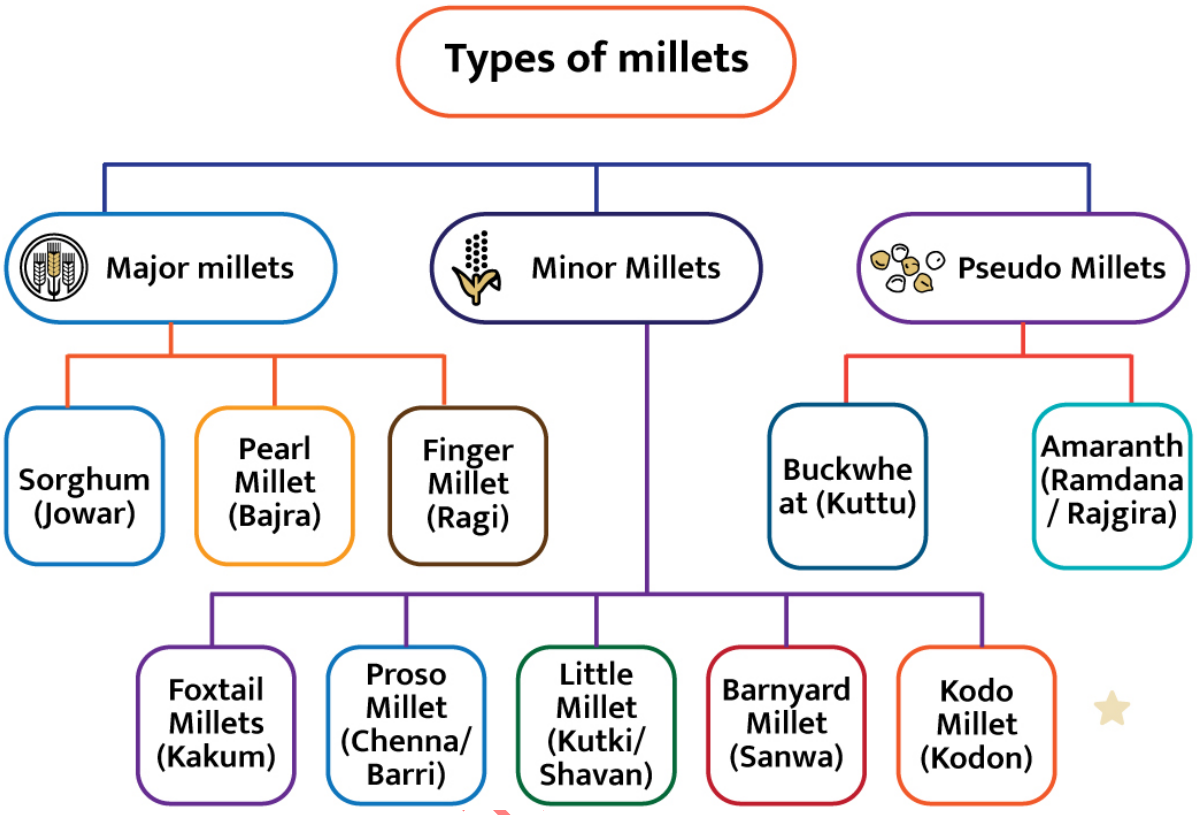
8. The top five millet-producing states in India are Madhya Pradesh, Gujarat, Karnataka, Rajasthan, and Maharashtra.



Initiatives taken to promote adoption of millet

1. National year of millets was observed in 2018 and since then millets were given the name nutri-cereals due to their nutritional value and the anti-diabetic properties
2. Increase in Minimum Support Price (MSP) to support millet cultivators.
3. Supply of seeds and inputs to farmers through farmer producer organizations (FPO'S).
4. The 2022-23 Union Budget provided support for post-harvest value addition, enhancing domestic consumption and branding of millets, etc.

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5. Saksham Anganwadi and Poshan 2.0 mandates supply of millets at least once a week in midday meal scheme.

i. **National Food Security Mission provides incentives to millet cultivators for:**

   a) Quality seed production/distribution

   b) Field-level demonstrations and trainings

   c) Primary processing clusters

   d) Research support

ii. **Indian missions abroad** tasked with branding and publicising Indian millets.

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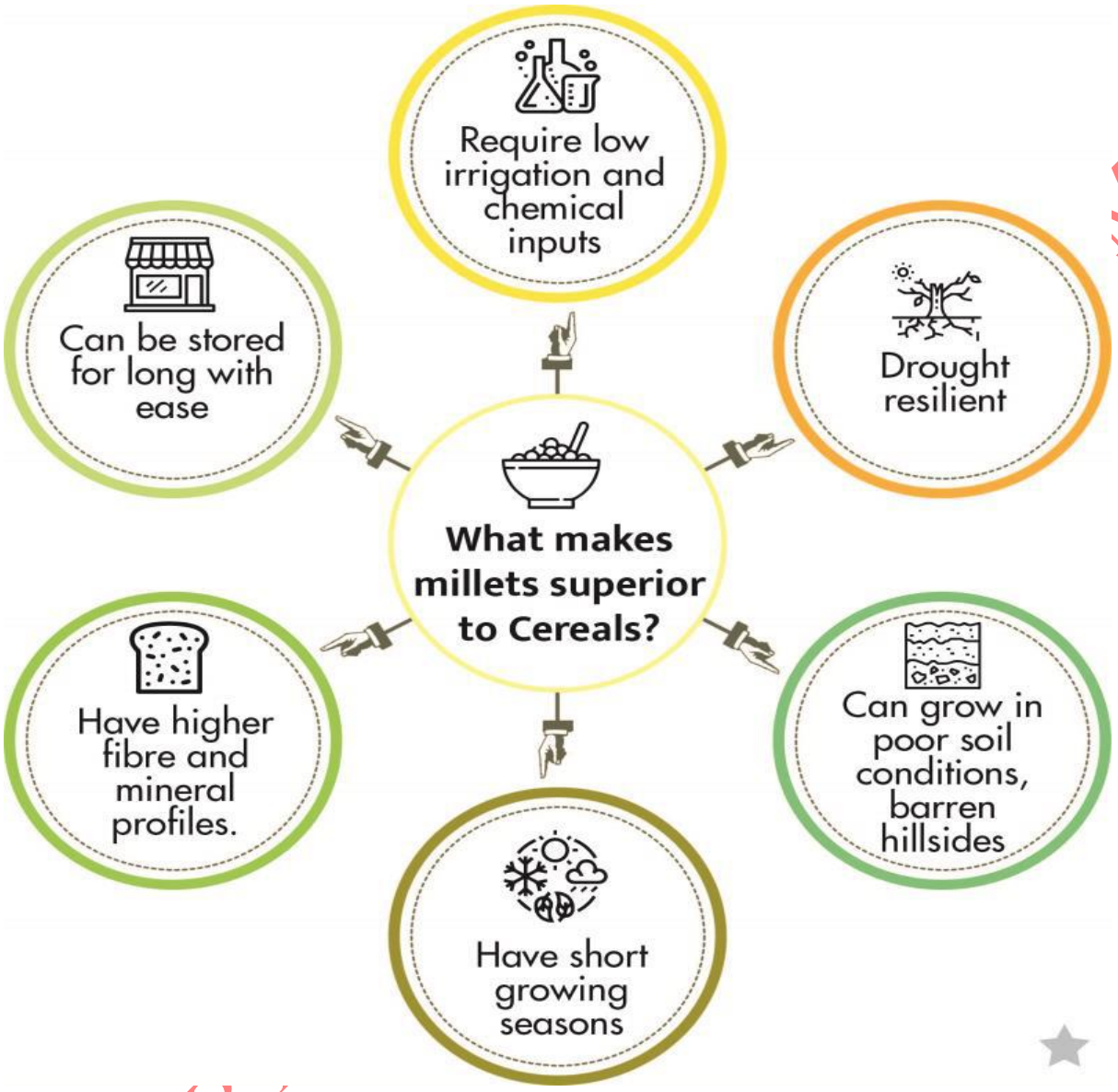

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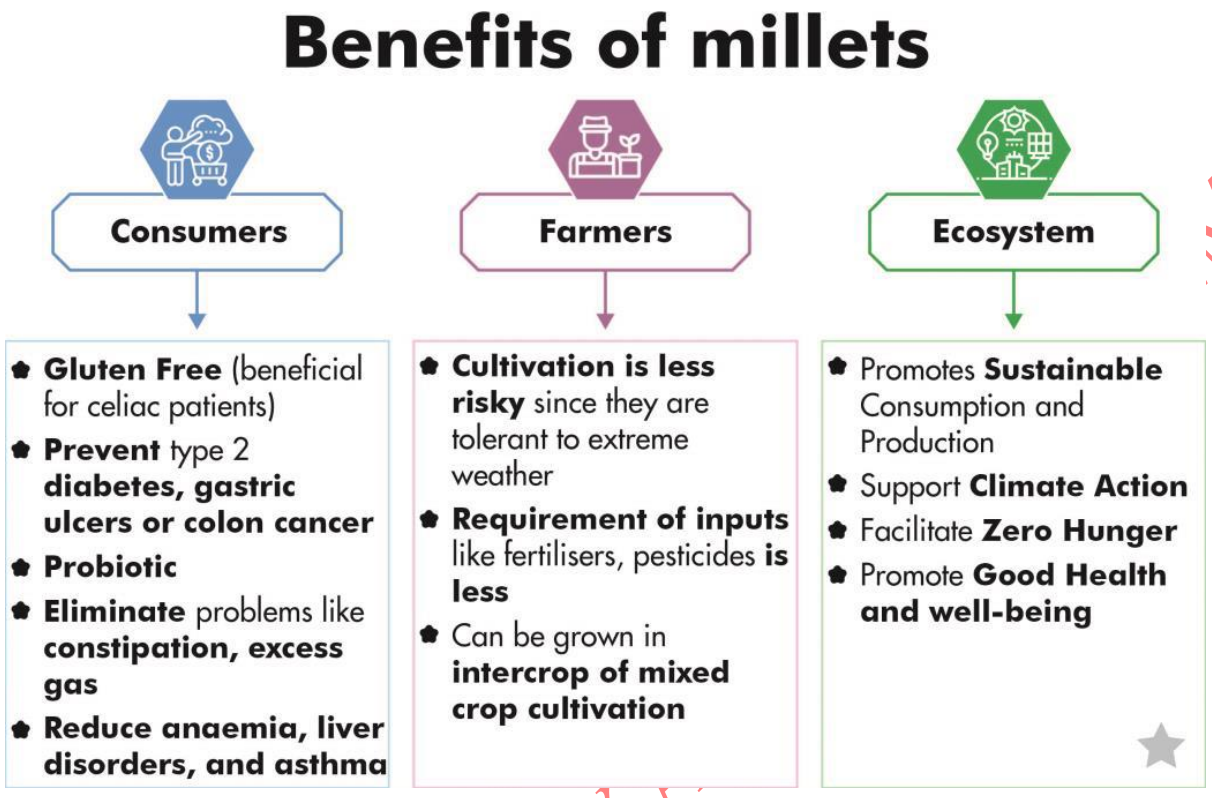


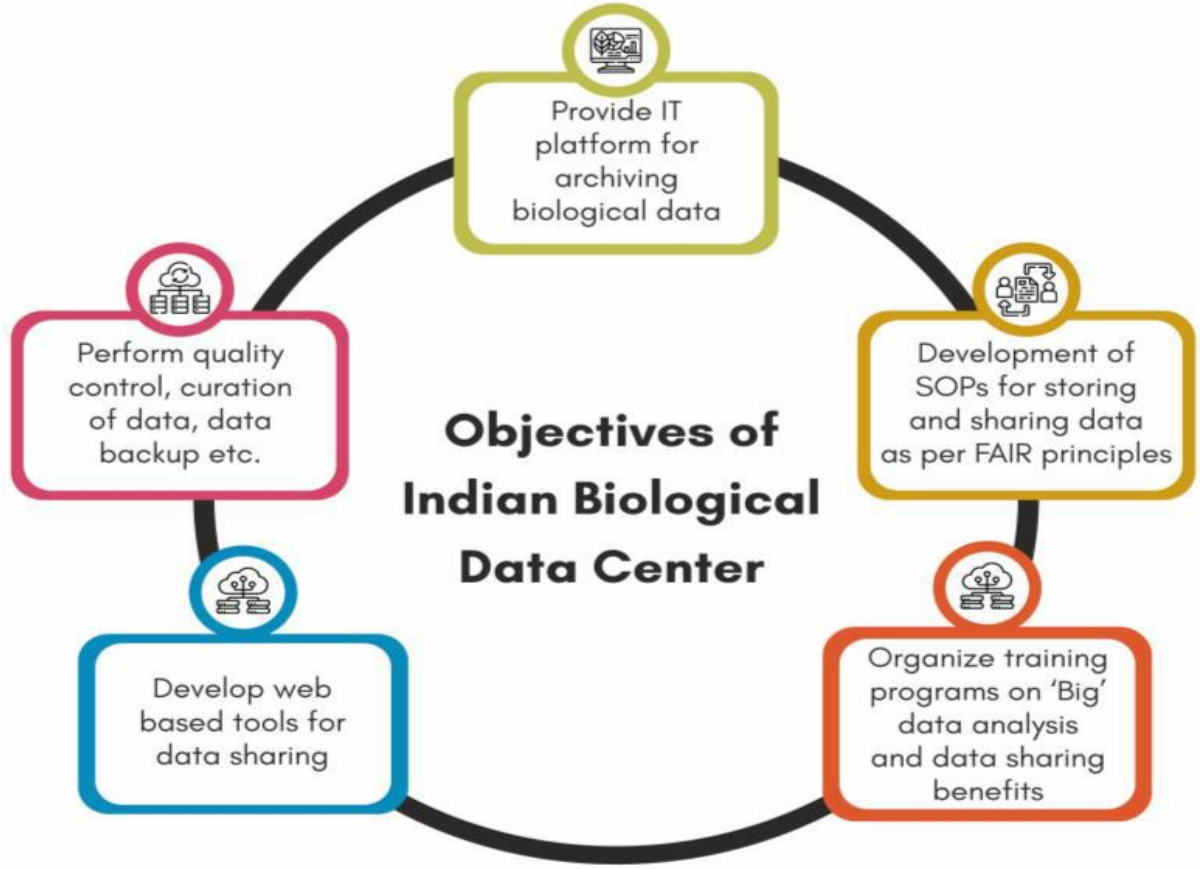
48.INDIAN BIOLOGICAL DATA CENTER

Indian Biological Data Center (IBDC) was inaugurated at Faridabad, Haryana.

IBDC

1. IBDC is the first national repository for life science data in India.
2. It is envisaged to emerge as a major data repository for all life science data emerging from India.
3. Also, as per the Biotech-PRIDE guidelines, released last year, IBDC is mandated to archive all life science data generated from publiclyfunded research in India.
4. It is being established at Regional Centre of Biotechnology (RCB), Faridabad in collaboration with National Informatics Centre (NIC).

5. The digitised data will be stored on a fourpetabyte supercomputer called 'Brahm'.



Significance of IBDC

1. Aid modern research

2.**Securing data**

3.**Ensuring data availability for all**

4.**Indian data for Indian solutions**

5.**Studying zoonotic diseases**

6.**Research for vaccines**

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49.PRIVATE SECTOR PARTICIPATION IN SPACE SECTOR

Vikram-S, India's first privately built rocket was launched recently from Sriharikota, Andhra Pradesh.

More about the launch

1. Named 'Mission Prarambh', it is India's first private space mission.
2. The rocket has been developed by Hyderabad-based Skyroot Aerospace, a company that was started in 2018.
3. It was launched with support from ISRO and IN-SPACe (Indian National Space Promotion and Authorisation Centre).
4. It is called Vikram-S, named after Vikram Sarabhai, the founder of India's space programme.
5. The rocket reached an altitude of 89.5 km. The target for the rocket was to reach space, which begins at an altitude of around 80 km, and to attempt touching the Karman Line located at around the 100-km altitude mark.
6. The Kármán line is a boundary that borders Earth's atmosphere and the beginning of space.

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50. G20 BALI DECLARATION

1. The 17th G20 summit concluded recently with the adoption of Bali declaration.
2. The motto for this G-20 summit was **Recover Together, Recover Stronger**.
3. India took over the presidency of G20 from Indonesia.

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Key Highlights of the Bali Declaration-2022

1. The Group highlighted its differences in the on-going war in Ukraine and asked for Russia's complete withdrawal from the territories of Ukraine.
2. Group also reassured its Commitment to secure Global Food security.
3. The Group welcomed the Black Sea Grain initiative brokered by Turkey and UN.
4. It is an MoU signed between Russia and UN Secretariat to allow export from Russia and Ukraine on food products and fertilizers, to ease the tension in the region.
5. The Group has welcomed the provision of additional financial resources, to assist in financing critical gaps in implementing International Health Regulations (2005)
6. It also applauded the establishment of a new Financial Intermediary Fund for Pandemic PPR (the 'Pandemic Fund') hosted by the World Bank.

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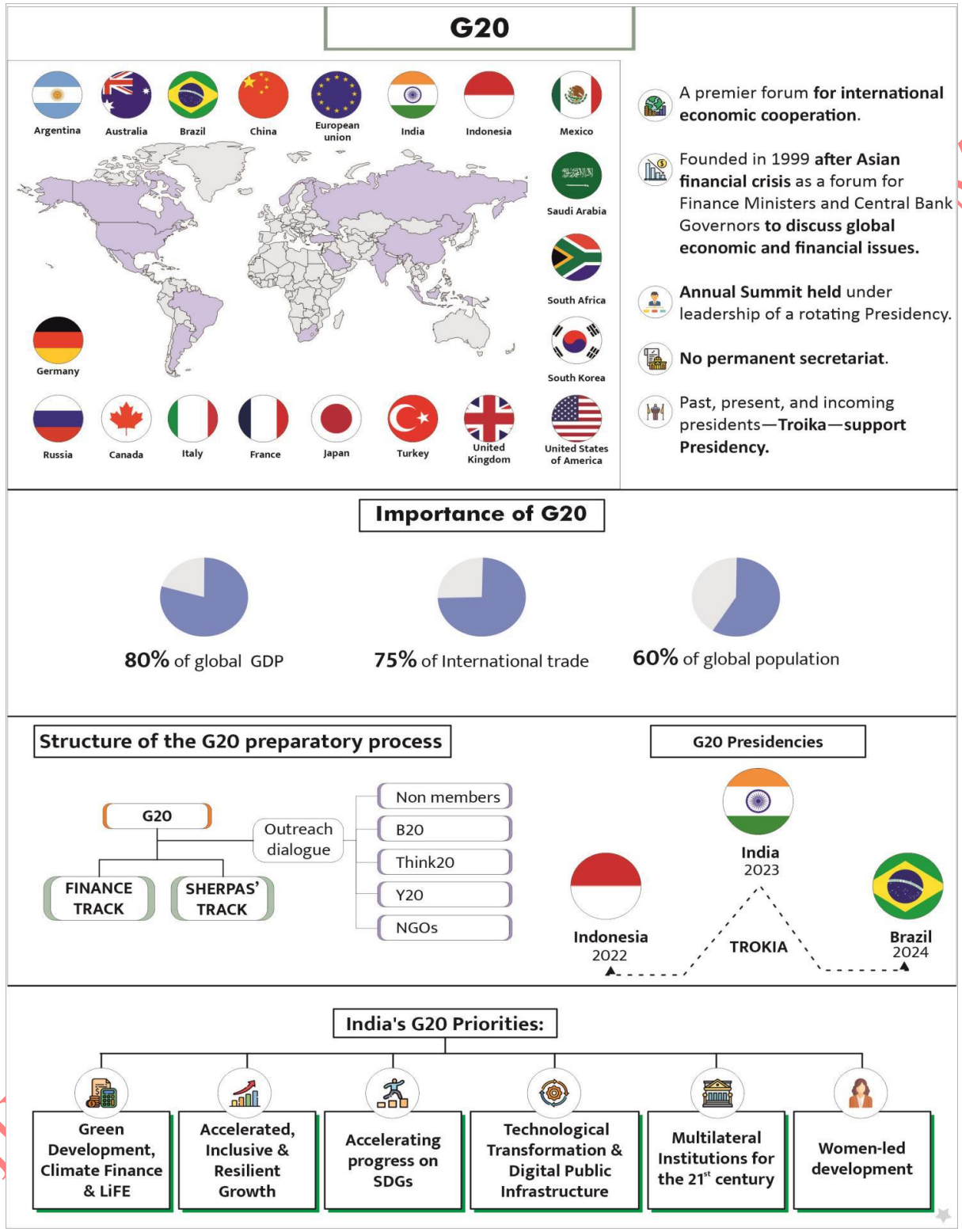

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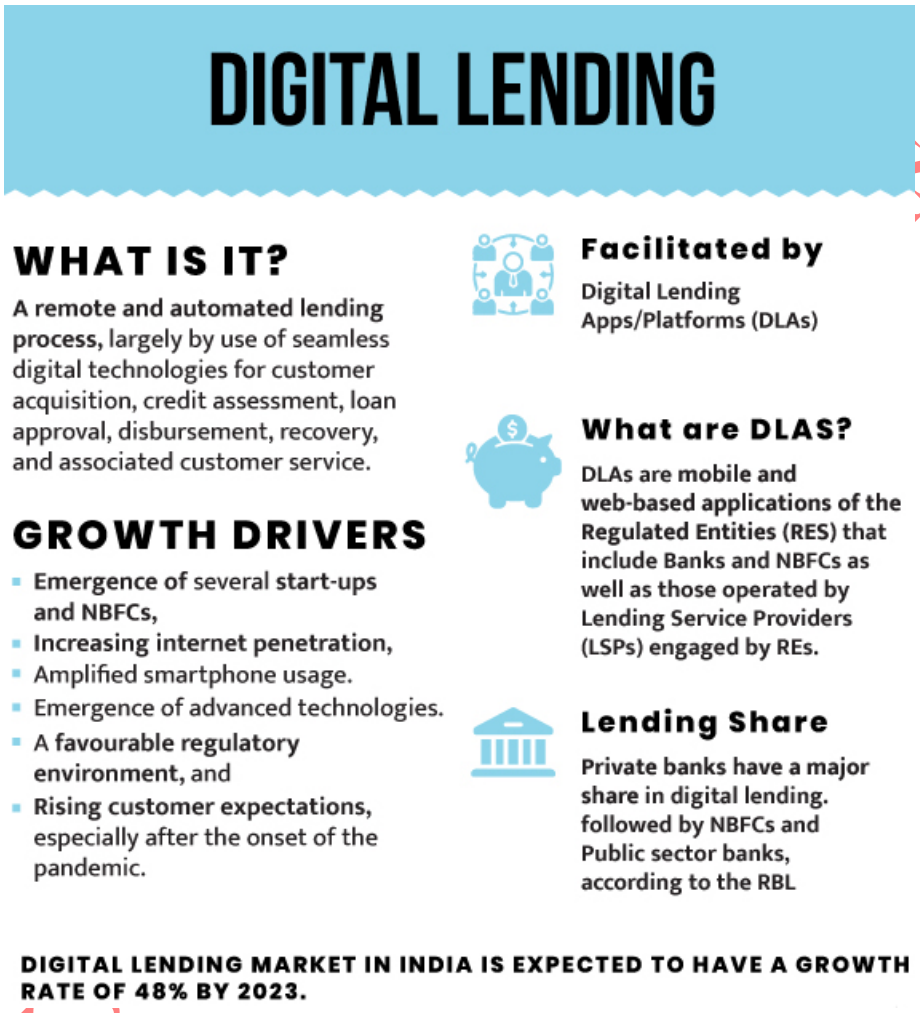
51. DIGITAL LENDING

1. Reserve Bank of India's (RBI's) guideline on digital lending became effective on December 1.
2. The RBI came out with the guidelines on digital lending in September and gave time until November 30 for players to comply with the 'existing loan' category.



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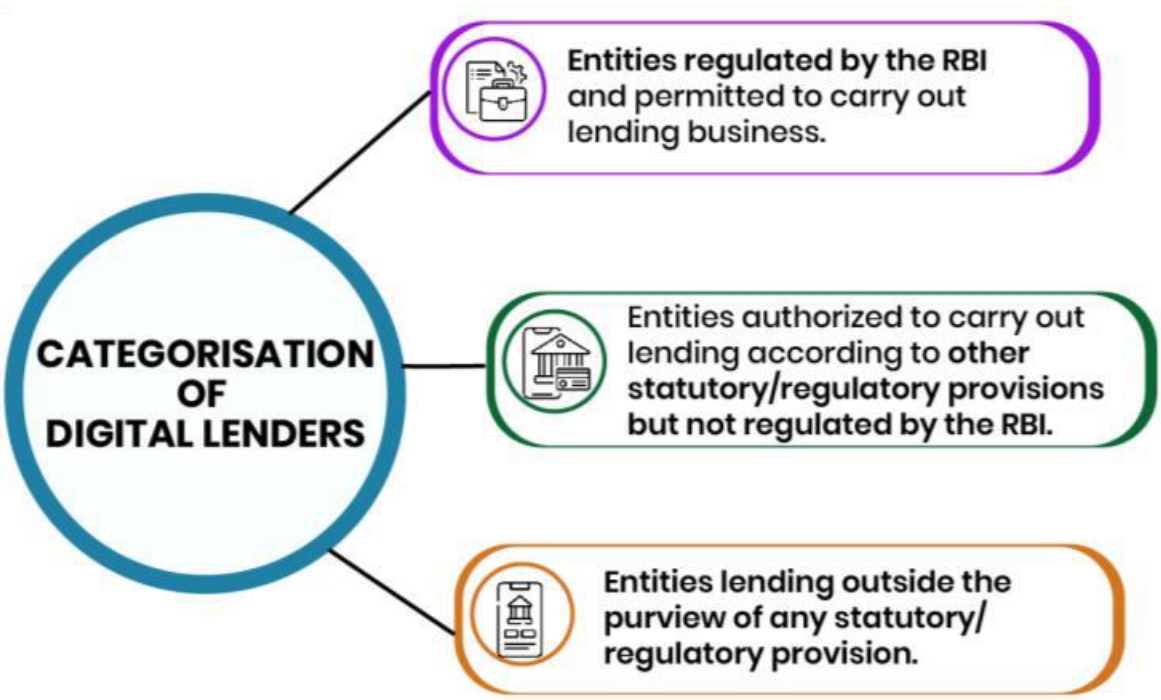

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52.EXCLUSIVE ECONOMIC ZONE (EEZ)

1. Defence, Space Agencies released 99% of Exclusive Economic Zone (EEZ) prohibited areas for oil exploration and production (E&P).
2. Prohibited for security reasons, decision came as part of prioritising energy security of India.
3. It will reduce the 'no go' areas of around 2.37 million sq km of India's EEZ from 42% to just 1%.
4. Under United Nations Convention on the Law of the Sea (UNCLOS), EEZ is the area beyond and adjacent to the

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territorial sea, generally extending 200 nautical miles from shore.

5. Within this area coastal nations claim and exercise sovereign rights to explore and exploit, and the responsibility to conserve and manage, both living and non-living resources.
6. With a 7,516 km long coastline, India has the 12th largest EEZ in the world.

Significance of opening of EEZ for E&P.

1. Out of 3.4 million sq km of sedimentary basins of India, 51% is offshore, of which 40% lies in prohibited areas.
2. It limits survey and exploration activities in EEZ, leading to lower discoveries and production.
3. With India being one of the largest energy consumers, it will help in increasing oil and gas production, reduced import dependence etc.

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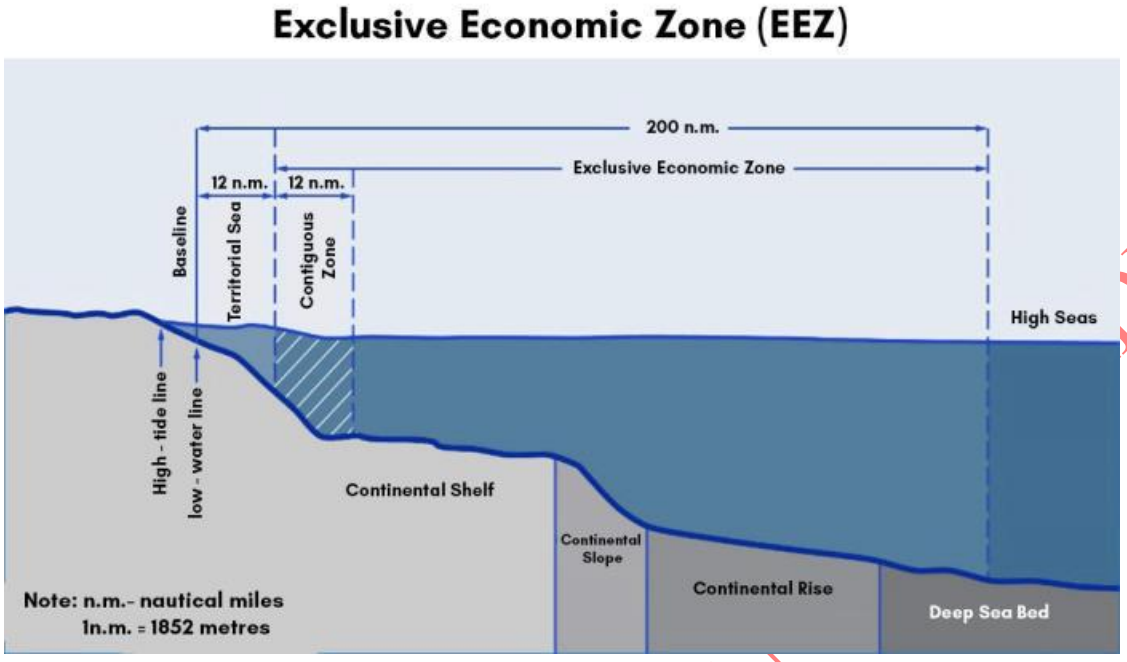

53. ENERGY CONSERVATION (AMENDMENT) ACT, 2022

Recently Energy Conservation (Amendment) Act, 2022 came into force.

About Energy Conservation (Amendment) Act, 2022

1. It amends Energy Conservation Act, 2001 which provides a framework for regulating energy consumption and promoting energy efficiency and energy conservation.
2. While 2001 act deals with saving energy, 2022 amendment deals with saving the environment and tackling climate change, thus broadening scope and objective of principal Act.

Key Features

Carbon credit trading:

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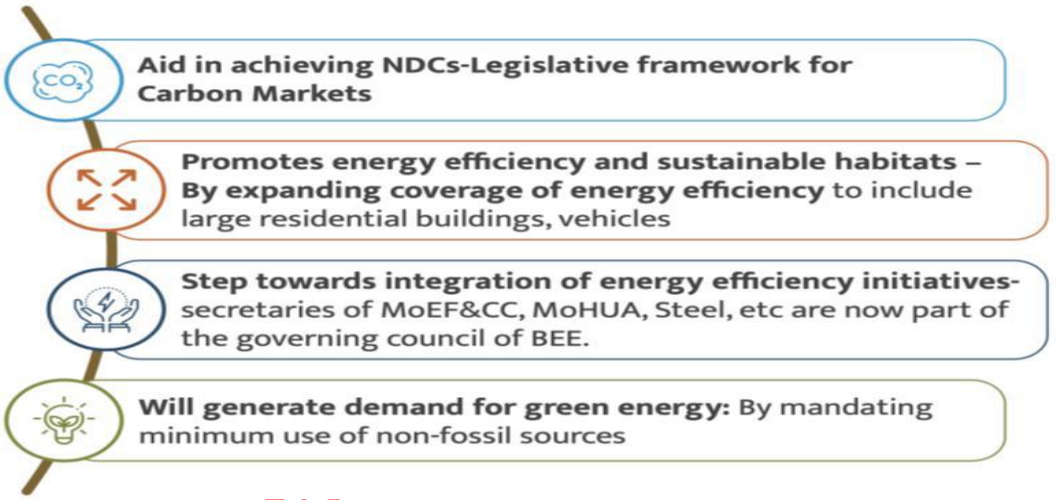
1. It empowers central government to specify a carbon credit trading scheme.
2. Carbon credit implies a tradable permit to produce a specified amount of carbon dioxide or other greenhouse emissions.
3. Central government or any authorized agency may issue carbon credit certificates to entities registered and compliant with scheme.

SIGNIFICANCE OF ENERGY CONSERVATION (AMENDMENT) ACT, 2022



54.SINDHUJA-I

1. It is an Ocean Wave Energy Converter developed by IIT Madras.
2. It consists of a floating buoy, a spar, and an electrical module.
3. Electric module generates electricity by using the relative motion between floating buoy (moving up and down with waves) and fixed spar passing through buoy centre.
4. It can help India to meet energy needs of its islands and also achieve climate change-related goal of generating 500 GW (gigawatt) of renewable energy (RE) by 2030.

5. Seawater stores tidal, wave and ocean thermal energy, making the harnessing of 40 GW wave energy possible in India
6. Tidal energy is caused by gravitational interaction between Earth, sun, and moon.
7. Wave energy is caused by wind blowing across ocean's surface.
8. Ocean thermal energy is caused by temperature differences (thermal gradients) between ocean surface waters and deep ocean waters.

Advantages: No pollution, Renewable, Higher available energy densities, Predictable and Less volatile in comparison to some other RE sources.

Disadvantages: High Initial Cost, Threat to Marine Life and Navigation, Location dependent and risk of damage from natural forces.

55. BOMB CYCLONE

1. A bomb cyclone, also known as an explosive cyclogenesis, is a meteorological phenomenon that occurs
2. When a low-pressure system experiences a rapid and drastic drop in atmospheric pressure.
3. When this rapid pressure drop is accompanied by strong winds and can lead to severe weather, including heavy snowfall, strong winds, and thunderstorms.
4. Bomb cyclones are typically associated with the winter months, but they can also occur during other seasons.
5. They are most common in the mid-latitudes, such as the eastern United States, Europe, and Asia.

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56.NATIONAL GEOSPATIAL POLICY, 2022

Why in news?

The Ministry of Science and Technology has notified a citizencentric **National Geospatial Policy (NGP) 2022**, to strengthen the Geospatial sector to support national development.

Vision and Goals

Global leader:

To make India a World Leader in Global Geospatial space with the best in the class ecosystem for innovation.

Integrated Policy:

To develop a coherent national framework in the country and leverage it to move towards a digital economy and improve services to citizens.

Better utilization of data:

To enable easy availability of valuable Geospatial data collected utilizing public funds, to businesses and the general public.

Encouraging participation of the private sector:

To have a thriving Geospatial industry in the country involving private enterprise.

The year 2025	The year 2030	The year 2035
• Put in place an enabling policy and legal framework that supports the liberalization of	• High-resolution topographical survey & mapping. • High-accuracy Digital Elevation	• High-resolution Bathymetric Geospatial Data of inland waters and sea surface

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the Geospatial sector • High accuracy Geoid for the entire country.	Model (DEM) for the entire country. • Develop a Geospatial Knowledge Infrastructure (GKI) underpinned by Integrated Data and Information Framework.	topography of shallow seas - to support Blue Economy. • National Digital Twin of major cities and towns o The digital twin is a virtual replica of a physical asset, process, or service.

57.PATHODETECT™ KIT'

'PathoDetect™ kit', by **Pune based Mylab**, India's **first indigenous TB Detection kit,** has received approval from the Central Drugs Standard Control Organisation, TB Expert Committee and the ICMR.

Advantages

1. Single test can detect tuberculosis and multidrugresistantce (against Isoniazid and Rifampacin).
2. Kit is more automated and reduces the need for high expertise to run the test.
3. kit can be stored at Indian room temperature.
4. Low cost and do not require special infrastructure for operations.

58.PROJECT VANNI

1. Google India has teamed up with the Indian Institute of Science (IISc) for this initiative.

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2. It aims to build an artificial intelligence/machine learning (AI/ML) model to collect language samples from 773 districts across India.
3. It will be an AI-based language model that can understand diverse Indian languages and dialects.
4. Potential use of such datasets is in building apps in areas such as health, agriculture, and financial inclusion.

59.ASIA'S FIRST DRONE DELIVERY HUB

1. It was unveiled by Meghalaya government in partnership with startup TechEagle.
2. It aims to **deliver vital supplies like drugs, diagnostic samples, vaccines quickly and safely** to different regions of state using a dedicated drone delivery network.
3. **Benefits**: Universal access to healthcare to 2.7 million people, overcome problem of lack of visibility, high delivery costs, etc.

60.The gender pay gap, hard truths and actions needed

Steps taken by India to close GENDER GAP

1. India has taken several steps in the legislative sphere to close the gender pay gap, especially at the low end of the wage distribution.
2. In this regard, it was one of the pioneering countries to enact the Minimum Wages Act in 1948 and followed by the adoption of the Equal Remuneration Act in 1976.
3. In 2019, India carried out comprehensive reforms in both the legislation and enacted the Code on Wages.
4. Evidence shows that the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in 2005 benefited rural women workers and helped reduce the gender pay gap, both directly and indirectly.

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5. Directly, by raising the pay levels of women workers who participated in the programme, and indirectly, benefits accrued to women involved in agricultural occupations through higher earnings, as MGNREGA contributed tothe rapid rise in overall rural and agricultural wages in the country.
6. In 2017, the Government amended the Maternity Benefit Act of 1961, which increased the 'maternity leave with pay protection' from 12 weeks to 26 weeks for all women working in establishments employing 10 or more workers.
7. This is expected to reduce the motherhood pay gap among mothers in the median and highend wage earners working in the formal economy.
8. Apart from enabling legislations, efforts are being made through the Skill India Mission to equip women with market-relevant skills to bridge the learning to-livelihood gap and the gender pay gap.
9. While the gender pay gap is slowly narrowing, at the current rate of progress it will take more than 70 years to close it completely.
10. Accelerated and bold action is needed to prevent a widening of the gender pay gap and closing the existing gap.
11. One of the targets of the UN Sustainable Development Goal 8 is "achieving full and productive employment and decent work for all women and men, including for young people and persons with disabilities and equal pay for work of equal value" by 2030.
12. In support of this Goal, the Equal Pay International Coalition (EPIC), was launched in 2017 as a multi-stake holder initiative led by the ILO, UN Women and the Organisation for Economic Cooperation and Development (OECD) that seeks to achieve equal pay for women and men everywhere.
13. Equal pay for work of equal value is necessary to close the gender pay gap.

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14. Closing the gender pay gap is key to achieving social justice for working women, as well as economic growth for the nation as a whole.

61. PM SHRI Scheme

1. The Union Cabinet approved the 'PM SCHOOLS FOR Rising India' (PM SHRI) scheme to turn existing government schools into model schools for implementation of the National Education Policy.
2. The scheme will be implemented as a centrally sponsored, scheme with a total project cost of 27,360 crore, with the centre's share being 18,128 crore for the period of 5 years from 2022-23 to 2026-27 for tranforming nearly 14,500 schools across the country.
3. However, schools will be selected only if the state government agrees to implement the NEP "in entirely with the centre laying down commitments for supporting these schools for achieving specified quality parameters" to become PM SHRI schools, according to a press statement of the Ministry of Education.
4. These schools will also be "monitored vigorously" to assess their progress in implementing NEP.
5. Other grounds for opposition include mandatory school entry at three years, which could leave out many from marginalised communities, protion of vocational courses from class 6 at the cost of formal eeducation, as well as the optiuon to exit schools in class 10 with the option to reenter in class 11.
6. "A School will receive nearly 2 crore, and the money will be transferred directly to the school's account through Direct Benefit Transfer.
7. The PM SHRI scheme also provides a "School Quality Assessment Framework" which will be developed for measuring key performance indicators for carrying out

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quality evaluation of schools selected from the current academic year.

8. The quality parameters that will be evaluated once a school is selected for the scheme will include implemntation of NEP 2020, student registry for tracking enrollment and learning progress, improvementy in learning outcomes of each child to achieve levels above State and National average, linkage of school with higher education institutions and local entyrepreneurial ecosystem for mentoring as well as creating "students rooted in the heritage of India, proud of values of Bharat, conscious of duties towards society and responsibilities towards nation-building".

62. Methane emissions Control

1. Nearly 90 countries have joined a U.S.-and EU-led effort to slash emissions of methane 30% by 2030 from 2020 levels
2. Leaders at the **CoP26 global climate conference in Glasgow** have pledged to stop deforestation by the end of the decade and slash emissions of the potent greenhouse gas methane to help slow climate change.
3. The inability of major powers so far to agree more broadly on rapid reductions in the use of fossil fuels, the main cause of man made global warming, has upset the poorer, smaller countries likely to suffer its worst effects.
4. Surangel Whipps Jr, president of Palau, a Pacific state of500 low-lying islands under threat from rising sea levels, told the leaders of the G20 industrial powers in a speech: "We are drowning and our only hope is the life-ring you are holding."
5. Nearly 90 countries have joined a U.S.-and EU-led effort to slash emissions of methane 30% by 2030 from 2020 levels, a senior Biden administration official said ahead of a formal announcement on Tuesday.
6. Methane is more short-lived in the atmosphere than carbondioxide but 80 times more potent in warming the earth. Cutting emissions of the gas, which is estimated to

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have accounted for 30% of global warming since pre-industrial times, is one of the most effective ways of slowing climate change.

7. The Global Methane Pledge, first announced in September, now covers emissions from two-thirds of the global economy,according to the U.S. official.
8. Among the signatories to be announced on Tuesday is Brazil — one of the five biggest emitters of methane, which is generated in cows' digestive systems, in landfill waste and in oil and gas production.
9. Three others — China, Russia and India — have not signed up, while Australia has said it will not back the pledge.

63. Will INDIA able to achieve Carbon Neutral Status?

1. **The scenario will become clear once India spells out how it plans to go about achieving targets**
2. India's headline announcement at COP26, to **become carbon neutral by 2070,** suggests that it has committed itself to decisive action to curb runaway greenhouse gas emissions from mid-century.
3. However, experts say that much will become clear only after India submits its updated Nationally Determined Contributions (NDC).
4. This document spells out the minutiae on how exactly it plans to go about achieving these targets.
5. India's five-fold plan, as Prime Minister Narendra Modi spelt out on Monday say India's non-fossil energy capacity will reach 500 GW by 2030; it will meet 50% of its energy requirements with renewable energy by 2030; it will reduce its total projected carbon emissions by a billion tonnes by 2030; and reduce the carbon intensity of its economy to less than 45% and achieve net zero by 2070. Net zero is when a country's carbon emissions are offset by taking out equivalent carbon from the atmosphere, so that emissions in balance are zero.

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Peaking year

1. However, achieving net zero by a specific date means specifying a year, also called a peaking year, following which emissions will start to reduce.
2. Though there is no clarity yet from the government, experts in the run up to COP26 have wrestled with these questions.
3. A March 2021, study by analyst Vaibhav Chaturdevi, at the council for Energy, Environment and water, suggested that for a 2070 net zero year and peaking year of 2040, India would have to reduce the emissions intensity (emissions per unit GDP) by 85% — it has so far reduced it to 24% from 2005 levels.
4. The share of non-hydro Renewable Energy has to increase to 65% from the 11% today; the share of electric cars in passenger sales has to go from 0.1% today to 75% by 2040; and the share of fossil energy in primary energy has to decrease from 73% to 40%.

64. OVER TWO LAKH RATION CARDS CANCELLED IN THE LAST ONE YEAR: PDS REFORMS

1. Over two lakh ration cards, accounting for approximately 10 lakh beneficiaries of the public distribution system (PDS), have been struck off from official records since the beginning of 2021.

2. Broadly, there are only two reasons — deaths and outmigration.
3. A majority of the beneficiaries have died with the rest moving out of Tamil Nadu.
4. In 2021 alone, around 2 lakh cards were cancelled and up to February this year, the number stood at 2,671 cards.
5. The previous high with regard to the cancellation of ration cards was in 2018 when about 1.63 lakh cards were cancelled.

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6. At that time, a drive was carried out to identify duplicate cards following the adoption of the system of 'smart family cards' in April 2017.
7. Then, end-to-end computerisation and seeding of Aadhaar numbers in PDS beneficiaries' database were carried out, all of which led to the card cancellation.
8. This time, as part of the 'data purity' project, the authorities have been coordinating closely with those officials who have the data regarding the death of individuals.
9. The Tamil Nadu e-governance Agency (TNeGA) is a key player in the exercise.
10. Efforts are on to link the PDS beneficiaries' database with live registers of death.
11. After 2018, for a few years, on an incremental basis, the cancellation took place.
12. It was during 2021, that too later part of the year, that the project picked up momentum and after due verification of the persons who died, the cancellation of cards was effected.
13. A senior official clarifies that the cards cancelled last year were not necessarily related to those who died in 2021.
14. Only in the last six months or so, the process of data sharing improved tremendously among government departments and agencies.

15. Asked about the applicability of the scheme of 'One Nation One Ration Card' for those who have migrated out of Tamil Nadu, another official replies that the scheme is meant for those who have been covered under the National Food Security Act.
16. In other words, only those identified as Priority Household (PHH) cardholders can avail themselves of benefits of the scheme.
17. As far as Tamil Nadu is concerned, out of 2.13 crore ration cards, about 1.11 crore cards come under the PHH cards with the balance being non-PHH cards.

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18. As per the 2017 rules, while preparing lists of PHH, those families having at least one member as income tax payer, having an air-conditioner, owning a car or having an annual income of 1 lakh will all have to be excluded.

65. ENERGY TRANSITION ADVISORY COMMITTEE

1. The Energy Transition Advisory Committee was formed by the Ministry of Petroleum and Natural Gas. It is headed by Tarun Kapoor, former Secretary of Petroleum Ministry.

2. It will focus on increasing the share of clean energy sources such as hydrogen, biofuel, nuclear, geothermal and tidal in the energy mix of the country.

3. It was formed

   i. To help India achieve its net-zero emission target by 2070

   ii. To create an energy transition road map (within 6 months) and

   iii. To create a step by step plan for moving from fossil fuels to green energy.

4. The committee will primarily focus on biofuel and green hydrogen of all the clean energies.

66. INDIGAU CHIP

1. India's first Cattle Genomic Chip for the conservation of pure varieties of indigenous cattle breeds like, Gir, Kankrej, Sahiwal, Ongole etc. IndiGau is India's first Single Nucleotide Polymorphism (SNP) based chip.
2. This indigenous chip was developed by the concerted efforts of scientists of National Institute of Animal Biotechnology (NAIB), Hyderabad.

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3. This chip will have practical utility in the Governments schemes to achieve the goal of conservation of our own breeds with better characters and help towards doubling of farmers' income by 2022.

67. INDIA'S FIRST OPEN ROCK MUSEUM

1. India's First Open Rock Museum was setup in Hyderabad. Aim: to educate and enlighten the masses about several lesser known facts
2. 2.The Museum displays around 35 different types of rocks from different parts of India with ages ranging from 3.3 Billion years to around 55 Million years of the Earth's history.
3. These rocks also represent the deepest part of the earth up to 175 kms of distance from the surface of the earth. The Museum was inaugurated at the CSIR-National Geophysical Research Institute (NGRI).

68. PURA

1. Provision of Urban Amenities to Rural Areas, announced in 2003 as a way of empowering and accelerating rural.development. It is introduced Dr. A.P.J. Abdul Kalam. The Ministry of Rural Development (MORD) implemented the PURA scheme on a pilot basis in seven clusters for a period of three years (2004-05 to 2006-07).
2. PURA 2.0 as a central sector scheme was launched in 2012 focussing on the development of potential growth centres such as census towns. PURA purposes that urban infrastructure and services be provided in rural hubs to create economic opportunities outside of cities to bridge the rural - urban divide.

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3. It enable physical, economic and spiritual connectivity. It is implemented through PPP. The PURA scheme is predecessor of Shyama Prasad Mukherji Rurban Mission, 2016.

69. OPERATION AAHT

1. It is a nationwide operation to curb human trafficking. It was launched by the Railway Protection Force.
2. As part of "Operation AAHT", special teams will be deployed on all long-distance trains/ routes with a focus on rescuing victims, particularly women and children, from the clutches of traffickers.

Actions under the operation:

i. The RPF will collect, collate and analyse clues. The information of routes, victims, sources, destination, popular trains are to be collected.
ii. The RPF will utilise its full intelligence in the operation. The details collected will be shared with the other law enforcing agencies. The RPF will assist the local police and will act as a bridge in inter-state operations..
iii. The operation will look for digital footprints of human trafficking. Cyber cells are to be created.

70. INSPIRESAT-1

1. INSPIRESat-1 is a student satellite. Mission life of the satellite is one year. It will study orbital heating of the sun and about dynamics of ionosphere. Weight of INSPIRESat-1 is 8.1 kg.
2. Indian Space Research Organisation (ISRO) launched "INSPIRESat-1".

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3. INSPIRESat-1 has jointly been developed by a team of international researchers including from universities of India, US, Taiwan, and Singapore.
4. 4.INSPIRESat-1 stands for International Research & Teaching Satellite Project satellite one.
5. This satellite has been developed by the Indian Institute of Space Science & Technology (IIST) in association with the Laboratory of Atmospheric & Space Physics at the University of Colorado, Boulder. It was launched onboard Polar Satellite Launch Vehicle PSLV-C52.

71. INTERNATIONAL MONSOONS PROJECT OFFICE: (IMPO)

1. On the occasion of National Science Day 2022, the government has launched an International Monsoons Project Office. It will work under the leadership of the World Climate Research Programme and the World Weather Research Programme.
2. The IMPO was set up to highlight the importance of monsoons for the economy of the nation IMPO would identify and foster as well as include connections and activities which will related to international monsoon research.
3. Initially, for five years, the International Monsoons Project Office (IMPO) will be based at the Indian Institute of Tropical Meteorology (ITM) in Pune.
4. The launch of IMPO is aligned with this year's theme of the National Science Day -"Integrated Approach in Science and Technology for a Sustainable Future'.

72. CYBER- TERRORISM

1. Cyber terrorism can be defined as electronic attacks from cyberspace from both the internal and external networks, particularly from the Internet that emanate from various

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terrorist sources with different set of motivations and are directed at a particular target.

2. The cyber terrorists generally perceive their targets to be either high-profile components of a nation's critical infrastructures or business operations. The main objective of these terrorists is to inflict damage which will either compromise or destruct targets in order to cause major physical and psychological impacts to them.

Motivations for Cyber Terrorism

1. To destroy enemy's operational capabilities; To destroy or misrepresent the reputation of an organization, nation or alliance.
2. To persuade those attacked to change affiliation; To demonstrate to their own followers that they are capable of inflicting significant harm on their targets.

Types of Cyber Terrorism Attack

Cyber terrorism capabilities can be group into three main categories:

1. Simple unstructured.

2. Advance-structured.

3. Complex-coordinated.

Simple-Unstructured: The capability to conduct basic hacks against individual systems using tools created by other people. This type of organization possesses little target analysis and command and control skills as well as limited learning capability.

Advanced-Structured: The capability to conduct more sophisticated attacks against multiple systems or networks and possibly, to modify or create basic hacking tools. The

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organization possesses an elementary target analysis and command and control skills as well as relatively modest learning capability.

Complex-Co-ordinated:

1. The capability for coordinated attacks capable of causing mass-disruptions against integrated and heterogeneous defenses. The terrorists have the ability to create sophisticated hacking tools.
2. They are also highly capable of conducting target analysis and command and control. They also possess advanced organization learning capability.

There are five main types of Cyber Terrorism Attack

1. Incursion: These type of attacks are carried out with the purposed of gaining access or penetrating into computer systems and networks to get or modify information. This method is very common and widely used with a high success rate.

2. Destruction:

a) This method of attack is used to main purpose of inflicting severe damage or destroying them.

b) Consequences of such an attack can be disastrous, whereby organizations might be forced to be out of operations for an undetermined time, depending on the severity of the attacks.

3. Disinformation: This method is used to spread rumors or information that can have severe impact to a particular target. Regardless of whether the rumors are true or not, the use of such attacks recklessly can create uncontrollable chaos to the nation or the organization.

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4. Denial of Service

a) Denial of Service attacks or DOS attacks as they are more widely known are also a common method of attack. The impact of such attacks is felt the most by e-commerce enabled business that sells products or services online.
b) Public websites are also sometimes the target of this type of attack by cyber terrorists.

5. Defacement of Websites: This type of attack is targeted to deface the websites of the victims. The websites can either be changed totally to include messages from the cyber terrorists for propaganda or publicity purposes which might cause them to be taken down or to re-direct the users to other websites which may contain similar messages.

73. Triple Talaq (or) Talaq-e-biddat:

1. Under Sharia law, If a man belonging to the religion of Islam pronounces talaq thrice either orally or in written form to his wife, then the divorce is considered immediate and irrevocable.
2. The only way to reconcile the marriage is through the practice of nikah halala, which requires the woman to get remarried, consummate the second marriage, get divorced, observe the three-month iddat period and return to her husband.
3. Shayara Bano case (2017); The Supreme Court had declared the practise of Triple Talaq (talaq- e-biddat) as unconstitutional
4. Triple Talaq Act (2019): Any pronouncement of talaq" by a Muslim husband to his wife in any manner, spoken or written, will be void and illegal. Any Muslim husband who communicates the "talaq" orally or in writing/may face

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punishment up to three years in jail. The punishment may be also extended

5. Arguments against Triple Talaq: It goes against the rights of equality and women's Tempowerment. It propagates the dominance of men over women. It gave men the right to arbitrarily divorce their wives without any valid reason.

74. LGBTQ :

LGBTQ is an acronym for Lesbian, Gay, Bisexual, Transgender and Queer. Social isolation, Conflicts in Family, discrimination, inadequate access to services, vulnerable to AIDS, drug addiction, deprivation of rights are the main difficulties faced by them

Efforts taken to protect their rights:

1. NALSA vs Union of India Case - recognition of transgender people as the 'third gender' by the Supreme Court of India and gave them the right to self-identification of their gender as male, female or third gender.
2. Justice K.S. Puttaswamy Vs Union of India case, 2017- Right to privacy is a Fundamental right-
3. Navtej Singh Johar & Ors. vs Union of India (2018): The Supreme Court decriminalized homosexuality by declaring part of Section 377 of IPC unconstitutional. Bodily autonomy was individualistic. Choice of a partner was part of the fundamental right to privacy.

Measures have to be taken:

1. Design appropriate programs/schemes for LGBT.

2. Mass-media awareness campaigns.

3. Legalizing same-sex marriage.

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4. Providing medical facility and reservation in employment and education.

75. ISRO MISSION TO VENUS - SHUKRAYAAN

1. The Indian Space Research Organisation will send a spacecraft to orbit Venus to study what lies below its surface. ISRO is expecting to launch the mission Shukrayaan by December 2024.
2. It is an orbital manoeuvre planned for a year after that. The orbital manoeuvre is the use of propulsion systems to change the orbit of a spacecraft. It enables a spacecraft to enter a planet's orbit.
3. The aim of the mission is to study Venus atmosphere, which is toxic and corrosive in nature as clouds of sulfuric acid cover the planet.
4. Venus is one of just two planets that rotate from east to west. Only Venus and Uranus have this "backwards" rotation.

About Venus

1. Venus is the second planet from the sun and the hottest planet in the solar system with a surface temperature of 500 degree Celsius - high enough to melt lead. The planet's thick atmosphere has cranked the surface pressure up to 90 bars.

Significance of the Mission

1. No prior observation of the sub-surface of Venus has been done. So, the mission will be flying the sub-surface radar for the first time. It will penetrate the sub-surface of Venus up to a few hundred meters.

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2. The mission will also bring an instrument to Venus to examine the planet's atmosphere in infrared, ultraviolet and sub-millimeter wavelengths.
3. It will give insight into the evolution of Earth-like planets and the atmospheric conditions.
4. It will also aim to provide a futuristic Vision of how climate change can have a massive impact on a planet.

Historic Missions to Venus

1. Magellan - a Nasa mission that ended in 1994.

2. Venus Express- A European mission-focused on atmospheric science.

3. Akatsuki- Japanese acecraft-focused on atmospheric science.

NASA's two new missions to Venus:

1. The Davinci+ (Deep Atmosphere Venus Investigation of Noble gases, Chemistry and Imaging)

2. Veritas (Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy)

76. ANOCOVAX VACCINE

1. On June 13, 2022, the Ministry of Agriculture unveiled India's first Covid-19 vaccine "Anocovax" for animals
2. Vaccine has been developed by Hisar-based National Research Centre on Equines.It can protect animals against Delta and Omicron variants of coronavirus.
3. The vaccine can be used in dogs, leopards, mice, lions, and rabbits. It is an inactivated vaccine that has been developed using an infectious part of the Delta variant.
4. Live vaccine is avoided in wild animals because live vaccine might have been suitable for particular species, but it can

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cause disease in another. For instance, arabies vaccine was developed for dogs around 15 or 20 years back, and was given to wolves in Africa. Unfortunately, they died.

5. The vaccine uses Alhydrogel as an adjuvant to boost immune response.

Aim of the vaccine

Vaccine has been developed with the aim of protecting endangered animals like lions and tigers. India reported some 9 Covid infections in Asiatic lions in Chennai-zoo in 2021. Apart from that, a study by Indian Veterinary Research Institute found some 3 natural Covid infections in wild Asiatic lions. A dead leopard cub was also found and tested positive for Covid-19.

77. KIYAVERSE

1. Kiyaverse was India's first-ever banking metaverse. Announced by Kiya.ai, a digital solutions It provider serving financial institutions and governments globally.
2. Kiyaverse pioneers use cases of merging real-world banking with Metaverse banking through an avatar (virtual humanoid) based interactions. It will be used by banks and non-banking finance companies (NBFCs) to enable virtual interactions.

Objective of Kiyaverse:

1. In the first phase, Kiyaverse will allow banks to extend their own Metaverse for clients, partners, and employees, through services that will include Relationship Manager & Peer Avatars and Robo-advisors.
2. Kiyaverse plans to have tokens as NFTs and support CBDC to enable open finance in a Web3.0 environment. Kiyaverse will interface its Open API connectors with Aggregators, and

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Gateways to enable a Super-App and Marketplace on the metaverse.

3. With the introduction of Haptics enabled Headsets, Kiyaverse will provide a near real-world interaction using the internet of senses.

78. PAYMENT VISION 2025

1. The Reserve Bank of India (RBI) has come out with "Payments Vision 2025" with an objective to provide every user with safe, secure, fast, convenient, accessible and affordable Super e-payment options.
2. It builds on the initiatives of Payments Vision 2019-21. The Payments Vision 2025 document is presented across the five anchor goalposts of Integrity, Inclusion, Innovation, Institutionalisation and Internationalisation:
3. Theme: E-Payments for Everyone, Everywhere, Everytime (4Es).

Objectives:

1. To elevate the payment systems towards a realm of empowering users with affordable payment options accessible anytime and anywhere with convenience.
2. To enable geo-tagging of digital payment infrastructure and transactions and revisiting guidelines for Prepaid Payment Instruments (PPIs), including closed system PPIs.
3. Regulating all significant intermediaries in payments ecosystems and linking credit card and credit components of banking products to UPI. Examining of BNPL (Book Now Pay Later) methods.

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79. FAST RADIO BURST (FRB)

1. Astronomers have detected a signal from a galaxy, which is around 3 billion light-years away. This signal is called "Fast Radio Burst (FRB)"
2. Recently, researchers from the Pune-based Tata Institute for Fundamental Research (TIFR) and the National Centre for Radio Astrophysics (NCRA), have assembled the largest collection of Fast Radio Bursts (FRBs) catalogue.
3. Mysterious Fast Radio Burst have been detected for the second time ever. It was first discovered in 2007.

Dispersion:

a) A defining property of these bursts is their dispersion (scattering or separation), the bursts produce a spectrum of radio waves, and as the waves travel through matter, they spread out or disperse with bursts at higher radio frequencies arriving at telescopes earlier than those at lower frequencies
b) Dispersion can result in signal degradation in many applications, especially over large distances. This dispersion allows researchers to learn about two important things
c) They can measure this dispersion to learn about the stuff that radio bursts pass through as they travel toward Earth. They can indirectly determine how far apart things are.
d) The Burst is said to be co-located with a compact and persistent radio source. It is connected with the dwarf host galaxy of high specific star-formation.
e) It is also related to and is accompanied by a persistent source, that results the location to emit in radio frequency continuously.

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Nature of Fast Radio Bursts:

1. Fast Radio Bursts are brief and intense flashes of radio frequency emissions. Such flashes typically last for milliseconds. These usually repeat multiple times. This phenomenon was first detected in 2007.
2. These bursts are generated by a magnetar, which is a neutron star having a very strong magnetic field emitting radio wave.
3. Radio Bursts are high-energy phenomena. They emit electromagnetic energy in the form of bursts of radio pulses. In each pulse, magnetar can emit energy equal to what sun emits in a month.
4. The Fast Radio Bursts are triggered by explosive events like a supernova or collision of two compact objects such as neutron star and black hole. Such bursts usually occur as a transient flash once and never seen again.

Significance of Studying FRBs:

1. The unique properties of fast radio bursts and their host galaxies combined with recent technological advancements have given researchers hope that these phenomena can be used to answer some long-standing questions about the universe.
2. It can be used to understand the three-dimensional structure of matter in the universe and to learn about poorly understood early moments in the evolution of the universe.

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80. AGNIPATH SCHEME

1. A new recruitment scheme for Indian armed forces) known as Agnipath. Under the new Agnipath scheme, around 45,000 to 50,000 soldiers will be recruited annually
2. The schemewill not only empower, discipline skill youth with military ethos in civil society but also improve battle preparedness suited to the changing dynamics.
3. The scheme wherein selected candidates will be enrolled as Agniveers for four years period. On the completion of four years period, Agniveers will go the society as disciplined, dynamic, motivated and skilled workforce for employment in other sectors.
4. Only 25% of the batch will be recruited back into their respective services, for a period of 15 years.

Objectives:

1. To enhance youthful profile of the armed forces. To attract young talent in the society to effectively exploit, adopt and use emerging modern technologies with technical thresholds of intake, as
2. To imbibe the armed forces ethos, courage, commitment and teamwork in the youth.
3. To imbibe the armed forces ethos, courage, commitment and teamwork in the youth.
4. To provide abilities and qualities such as discipline, dynamism, motivation and work-skills so that the youth remains as an asset.

Eligibility:

It is only for personnel below officer ranks Aspirants between the ages of 17.5 years and 23 years will be eligible to apply

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Significance:

1. National integration and Nation building through empowered, disciplined and skilled youth with military ethos.
2. Improved battle preparedness, Opportunity for youth and their smooth integration into the society with skill sets and certification.
3. Soldiers will be able to find work in a variety of industries as a result of their abilities and experience gained during their 4-year service.
4. After being picked, candidates would go through six months of training before being deployed for three and a half years. In the beginning, they would be paid Rs 30,000 which will go up to Rs 40,000 by the end of the 4th year.
5. 30% of their pay will be set aside in a Seva Nidhi scheme, to which the government will contribute an equivalent amount every month. At the end of the four years, each soldier a lump sum payment of Rs 11.71 lakh, which will be tax-free. would rece
6. The agniveers will be given priority in CAPFS, Assam Rifles, and police and allied forces in several states.

Related Concerns:

1. Difficult to Find another Job: The scheme opens the way for recruitment of about 45,000 soldiers into Army, Navy and Air Force in the first year but on a short-term contract.
2. No Pension Benefit: scheme will be given a one-time lumpsum. Training May Remain Unutilized: Forces will lose experienced soldiers.
3. The scheme nullifies the permanent cadres and pension benefits which may discourage youth, to take up the scheme.

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4. Many experts believe that shorter duration service could compromise on training, morale and commitment in comparison to the permanent recruits.

81. NATIONAL STANDARDS FOR CIVIL SERVICE TRAINING INSTITUTIONS

1. Developed by: Capacity Building Commission (CBC)
2. India is the first country in the world to offer a unique model for setting standards for public service training institutions at the national level.
3. Aim: Capacity Building Commission develops the national standards to,
    a. Formulate a baseline for central training institutes on their current capacity
    b. To elevate quality and capacity of training delivery.
    c. To harmonize standards for training 2011
4. A web portal and approach paper for national standards were also unveiled, during the launch event
5. These standards will also lay down aspirations for training institutions, to endeavor towards excellence.

82. FLAG CODE OF INDIA

1. Recently, the Government of India has amended the Flag Code of India.
2. The Flag Code of India is a set of laws and conventions concerning the use, display and hoisting of the Indian national flag in the country.
3. Before the 2002 code was introduced, the display of the national flag was governed by provisions of The Emblems and Names (Prevention of Improper Use) Act, 1950, and the Prevention of Insults to National Honour Act, 1971. 2

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4. As government launched a Har Ghar Tiranga campaign, the Ministry of Home Affairs amended the Flag Code of India 2002 to allow for the national flag to be flown even at night.

83. RAMSAR SITES IN INDIA 2022

1. According to the Environment Ministry, "Wetlands are an area of marsh, fen, peat land or water; whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metre, but does not include river channels, paddy fields, human- made water bodies/tanks specifically constructed for drinking water purposes and structures specifically constructed for aquaculture, salt production, recreation and irrigation purposes."
2. During 2022 itself, a total of 28 sites have been declared as Ramsar sites)
3. This takes the total number of Ramsar Sites in India to 75 and in Tamilnadu to 14, having maximum number of Ramsir sites in India, followed by Uttarpradesh with 10 Nos.
4. Criteria:

To be Ramsar site, however it must meet at least one of nine criteria as defined by the Ramsar Convention of 1961, such as supporting vulnerable, endangered, or critically endangered species or threatened ecological communities or, if it regularly supports 20,000 or more water birds or, is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks are dependent upon.

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84.PADMA

1. The Ministry of Defense inaugurated PayRoll Automation for Disbursement of Mon Allowances (PADMA), an automated Pay & Allowances module for the Indian Coast Guar
2. PADMA is an automated platform leveraging latest technology which will provide seamless and timely disbursal of Pay & Allowances to around 15,000 Indian Coast Guard personnel.
3. This module has been developed under the aegis of the Defense Accounts Department and (PAOCG) will be operated by Pay Accounts Office Coast Guard, Noida.
4. Significance:
   i. The launch marked the beginning of the Centralized Pay System (CPS), the foundation of which is being laid down by the Defense Accounts Department Headquarters to provide one stop pay accounting solutions for all organizations under the Ministry.
   ii. Launch of PADMA will strengthen the Digital India Vision.
   iii. Also, it is an 'Atmanirbhar Bharat' initiative as the entire module has been designed and developed by Indian entrepreneurs assisted by domain experts.

85. HARIYALI MAHOTSAV

1. Ministry of Environment, Forest & Climate Change organized "Hariyali Mahotsav" at Talkatora Stadium, New Delhi in the spirit of "Azadi Ka Amrit Mahotsav".
2. Hariyali Mahotsav, the "Tree Festival" is being organized to create awareness about the importance of trees in sustaining not only the life of the present generations but also to secure the future of forthcoming generations.

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3. Organizing Authority: Hariyali Mahotsav 2022 is being organized by Ministry of Environment, Forest and Climate Change in collaboration with the State Governments, Police Institutions and Schools of Delhi for undertaking plantation drives on the occasion.
4. Significance: Hariyali Mahotsav 2022 is perceived as an effective tool to instill enthusiasm among masses for forest conservation and planting trees.
    a. It holds immense importance in complementing the policy and program initiatives of the government towards environmental conservation.
    b. Hariyali Mahotsav is celebrated across the country in recognition of the crucial role of Forest/Greenery in maintaining the ecological balance and providing many ecosystem services to the planet.
    c. It will be organised with the objective of raising awareness on significance of trees in sustaining the life of present generations as well as in securing the life of forthcoming generations.
    d. Trees are significant for tacking the unfavourable effects of climate change.

5. Key Activities: As part of the Hariyali Mahotsav, Ceremonial Plantation drives are being organized with participation of 75 Nagar Vans throughout the country, 75 Police Stations and 75 Schools in Delhi/NCR and 75 degraded plantation sites in the different states.

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