

OFFICERS IAS ACADEMY™

# OFFICERS' PULSE



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**November 2024 (DIGEST)**

**CURRENT AFFAIRS  
MONTHLY**

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# Foreword

**Officers Pulse Digest** is a comprehensive monthly current affairs magazine that serves as a complete resource for UPSC CSE Prelims. It includes significant topics from sources like **The Hindu, Indian Express, Business Standard, Yojana, Kurukshetra, Down to Earth**, and more.

**Note:**

**Sentences highlighted in orange are statements from previous year questions.**

**Sample:**

## ENVIRONMENT

### 1) PULICAT LAKE

#### About Pulicat Lake

- Pulicat Lake is located on the **Coromandel Coast**, between the states of **Tamil Nadu and Andhra Pradesh**, with the major part of the lake located in Andhra Pradesh.
- It is the **second largest brackish water lagoon** (after **Chilika Lake** in **Odisha**) in India.
  - *A lagoon is a shallow body of water separated from a larger body of water by a narrow landform, such as reefs, barrier islands.*
- The lake is separated from the **Bay of Bengal** by **Sriharikota island**, home to the Satish Dhawan Space Centre.
- It is a unique **Ecotone** that supports rich biodiversity, from aquatic life such as **mudskippers, seagrass beds, and oyster reefs** to more than 200 avian species (birds), including migratory birds such as **Eurasian curlews, bar-tailed godwits, sand plovers, and flamingos**.
  - *An ecotone is a transitional area between two Ecosystems.*
- **Pulicat Lake Bird Sanctuary** is located within the lake and hosts a rich biodiversity of birds and aquatic life.

**Although “Officers Pulse- Digest” is primarily oriented towards Prelims, reading “Officers Pulse- In depth” along with it is crucial for effectively tackling the Prelims examination.**

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# SCHEMES

## 1) PM VIDYALAXMI SCHEME

### What's in the news?

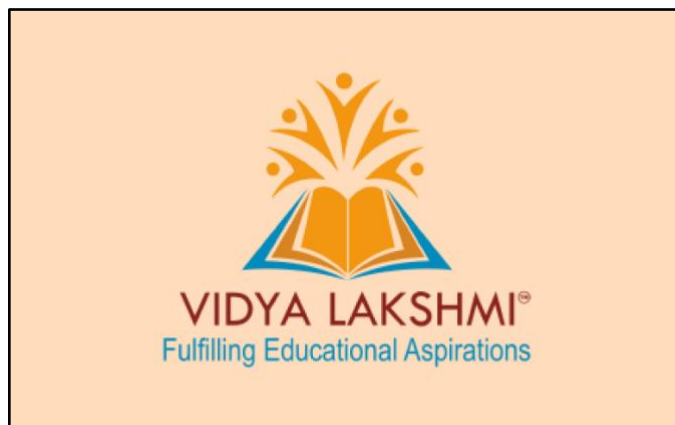
- The Union Cabinet has approved PM Vidyalaxmi, a new **Central Sector scheme** that seeks to **provide financial support to meritorious students**.
- PM Vidyalaxmi is a key initiative stemming from the **National Education Policy (NEP), 2020**, which had recommended that financial assistance should be made available to meritorious students in Higher Education Institutions.
  - *Refer Pulse Digest August 2024 edition for details about NEP 2020.*

### About the Scheme

- Under the scheme, any student who gets admission in a **quality Higher Education Institution (QHEIs)** will be eligible to get **collateral free, guarantor free loan from banks and financial institutions** to cover full amount of tuition fees and other expenses related to the course.
- The program targets top-tier educational institutions, identified through the **National Institutional Ranking Framework (NIRF) rankings**, including **both government and private institutions**.
- The implementation will occur through a **digital, transparent, and student-friendly system**.
- The programme is projected to assist more than 2.2 million students.

### Financial Assistance:

- For **loan amount up to ₹7.5 lakhs**, the student will also be eligible for a **credit guarantee of 75%** of outstanding default. This will give support to banks in making education loans available to students under the scheme.
- In addition to the above, for students having an **annual family income of up to ₹ 8 lakhs**, and **not eligible for benefits** under any other government scholarship or interest subvention schemes, **3 percent interest subvention for loan up to ₹ 10 lakhs** will also be provided during moratorium period.



### National Institutional Ranking Framework:

- The NIRF was established by the **Ministry of Education** in 2015 and holds the benchmarks to rank the various higher education institutions of the country based on comprehensive parameters.
- They include teaching, learning and assessment resources, research, graduate employment and other outcomes, community engagement and widening participation, and reputation.

## 2) MGNREGS

### About the Programme

- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005, guarantees **100 days of work** each financial year to **any rural household** willing to do public work-related unskilled manual work at the **statutory minimum wage**.
- In addition to this, there is a provision for upto **additional 50 days of unskilled wage employment** in a financial year in drought/natural calamity notified rural areas.

- The **State Governments** may make provision for providing additional days beyond the period guaranteed under the Act from their own funds.
- The act makes it **obligatory** for the State to give rural households work on demand.
  - In case such employment is not provided within 15 days of registration, the applicant becomes eligible for an **unemployment allowance**.
- The **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)** was initiated as directed in MGNREGA to implement the mandate of the Act.
- The **Ministry of Rural Development (MRD)** is monitoring the entire implementation of the MGNREGS in association with state governments.

### Key Features of the Scheme

- **Every rural household** has the right to register under MGNREGA.
- **One-third** of the stipulated workforce must be **women**.
- **Work site facilities** such as creche, drinking water and shade have to be provided.
- The employment will be provided **within a radius of 5 km**: if it is above 5 km extra wage will be paid.
- **MGNREGA wage rates vary from state to state** and are revised by indexing them to the **Consumer Price Index-Agricultural Labourers (CPI-AL)** for a particular state.
- While **60 per cent of the total expenditure** has to be on **wage**, **40 per cent** spending has to be on the **creation of material assets**.
- Permissible works predominantly include water and soil conservation, afforestation and land development works.
- **Gram sabhas** must recommend the works that are to be undertaken and **at least 50% of the works must be executed by them**.
- **Social Audit** has to be done by the Gram Sabha.

### Funding Pattern

- Funding is **shared between the centre and the states**.
- The funding pattern of the scheme comprises **100% funding for unskilled labour cost and 75% of the material cost by Central Government** and **rest shall be borne by the State Government**.

### Why in News?

- Under MGNREGS, more than 187 crore person-days have been generated, providing employment to 4.6 crore rural households. More than 56 lakh assets have been created, reflecting the scheme's role in strengthening rural infrastructure.
- **Women's participation** in the scheme has **consistently crossed more than 50 percent** in the past five years.
- **All the assets created under the scheme are geotagged**, and more than six crore assets have been geotagged so far.

## 3) PRADHAN MANTRI KAUSHAL VIKAS YOJANA

### About PMKVY

- Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is the flagship scheme of the **Ministry of Skill Development & Entrepreneurship** to **enable a large number of Indian youth to take up industry-relevant skill training**.
- Launched in 2015, PMKVY is implemented by **National Skill Development Corporation (NSDC)**.

**NSDC:**

- National Skill Development Corporation is a **not-for-profit public limited company** incorporated in 2008.
- NSDC was set up by the **Ministry of Finance** as a **Public Private Partnership (PPP) model**.
  - The **Government of India** through the Ministry of Skill Development & Entrepreneurship **holds 49% of the share capital** of NSDC, while the **private sector has the balance 51%** of the share capital.
- NSDC acts as a catalyst in skill development by providing funding to enterprises, companies and organizations that provide skill training.

- Under PMKVY, individuals with prior learning experience or skills will also be assessed and certified under **Recognition of Prior Learning**.
- Skill training is based on the **National Skill Qualification Framework (NSQF)** and industry led standards.
- Currently the 4th version of the PMKVY Scheme i.e. **PMKVY 4.0** is being implemented as a **Central Sector Scheme** from 2022-23.

**Objectives of PMKVY**

- To impart industry-related skills to the **unemployed youth and school/college dropout**;
- To provide **financial and placement assistance** to trained candidates.

**Why in News?**

- A training program under PMKVY 4.0 was recently launched in Kohima, Nagaland, focusing on skill development for Mobile Phone Hardware Repair Technicians, Assistant Installation Computing & Peripherals, and Drone Service Technicians.

**NSQF:**

- The National Skills Qualifications Framework is a **competency-based framework** that organizes all qualifications according to a series of levels of knowledge, skills and aptitude.
- NSQF in India was notified in **2013**.
- Under NSQF, the learner can acquire the **certification for competency** needed at any level through **formal, non-formal or informal learning**. In that sense, the NSQF is a **quality assurance framework**.

**4) OTHER NOTABLE TOPICS****4.1. PRASHAD SCHEME****About**

- The 'National Mission on Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive' (PRASHAD) was launched by the **Ministry of Tourism** with the objective of **integrated development of identified pilgrimage and heritage destinations**.
- Launched in 2014, it is a **Central Sector Scheme with complete financial assistance by the Government of India**.
- The scheme has been launched with the vision of **focused infrastructure development to harness pilgrimage and heritage tourism destinations**.
- The scheme aimed at infrastructure development such as entry points (Road, Rail and Water Transport), last mile connectivity, basic tourism facilities like Information/ Interpretation Centers, ATM/ Money exchange, eco-friendly modes of transport, area Lighting and illumination with renewable sources of energy, parking, drinking water, toilets, etc.

**Implementation Agency**

- The projects identified under this scheme shall be implemented through the **identified agencies** by the **respective State/ Union Territory Government**.



## 4.2. PRADHAN MANTRI SWASTHYA SURAKSHA YOJANA

### About the Scheme

- Government of India is implementing Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) which aims at **correcting regional imbalances in the availability of affordable tertiary healthcare services and to augment facilities for quality medical education** in the country.
- It was launched in **2006**.
- PMSSY has two components:-
  - **Setting up of All India Institute of Medical Sciences (AIIMS); and**
  - **Upgradation of existing Government Medical Colleges/Institutions (GMCIs).**

## 4.3. PRADHAN MANTRI SURAKSHIT MATRITVA ABHIYAN

### About Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)

- It was launched by the **Ministry of Health & Family Welfare** to provide **fixed-day, free-of-cost, assured, comprehensive, and quality antenatal care** on the 9th day of every month, **universally to all pregnant women in their 2nd/ 3rd trimesters of pregnancy**, at designated public health facilities.
- Launched in **2016**, PMSMA also invites **active participation from private practitioners on a voluntary basis.**
- One of the key focus areas of PMSMA is to generate demand through Information Education & Communication (IEC), Inter-personal Communication (IPC) and Behavior Change Communication (BCC) activities.
- Auxiliary Nurse Midwife (ANM), Accredited Social Health Activist (ASHA) and Anganwadi Worker (AWW) play a pivotal role in mobilization of the community and potential beneficiaries in **both rural and urban areas** for availing of services during the PMSMA.



## 4.4. STAND-UP INDIA

### About

- Stand up India Scheme was launched in **2016** to **promote entrepreneurship at grassroot level.**
- The scheme is anchored by the **Department of Financial Services (DFS), Ministry of Finance.**

### Objectives:

- The purpose of Stand-Up India is to:
  - **promote entrepreneurship amongst women, SC & ST category;**
  - **provide loans for setting up greenfield enterprises** in manufacturing, services or the trading sector & activities allied to agriculture;
  - **facilitate bank loans between Rs.10 lakh to Rs.1 crore** to at least one Scheduled Caste/ Scheduled Tribe borrower and at least one woman borrower per bank branch of Scheduled Commercial Banks.

### Significance:

- The Stand-Up India scheme is based on **recognition of the challenges faced by SC, ST and women entrepreneurs** in setting up enterprises, obtaining loans and other support needed from time to time for succeeding in business.
- The scheme therefore endeavors to create an ecosystem which facilitates and continues to **provide a supportive environment for doing business.**

### Who all are eligible for a loan?

- **SC/ST and/or women entrepreneurs, above 18 years** of age.
- Loans under the scheme are available for **only green field projects.**

- *Green field signifies the first time venture of the beneficiary in the manufacturing, services or the trading sector & activities allied to agriculture.*
- In case of non-individual enterprises, **51% of the shareholding and controlling stake** should be held by either SC/ST and/or Women Entrepreneur.
- Borrowers should **not be in default** to any bank/financial institution.

## INITIATIVES

### 1) ONE NATION ONE SUBSCRIPTION

#### What's in the news?

- The Union Cabinet has approved One Nation One Subscription (ONOS), a **new Central Sector Scheme** for providing **country-wide access to scholarly research articles and journal publication**.
- The benefits of ONOS will be provided to **all Higher Educational Institutions under the management of the Central or State Government and Research & Development Institutions of the Central Government**.
- Currently, ten separate library consortia managed by different ministries provide journal access to higher education institutions within their purview, and institutions often subscribe individually to journals.
- With ONOS, all government-run higher education institutions will have **unified access to both national and international journals** across various academic fields.
- The initiative will **expand access to scholarly journals** to a vast diaspora of students, faculty, researchers and scientists of all disciplines, including those in tier 2 and tier 3 cities.
- ONOS will be coordinated by a central agency -- the **Information and Library Network (INFLIBNET)**, an autonomous inter-university centre of the University Grants Commission (UGC).

### 2) DIGITAL BHARAT NIDHI

#### About

- The Universal Service Obligation Fund (USOF) was established under the **Indian Telegraph (Amendment) Act, 2003** in 2002.
- The **Telecommunications Act, 2023** renamed USOF as **Digital Bharat Nidhi (DBN)**.
- The DBN has the mandate to **support universal service** through **promoting access and delivery of telecommunication service in underserved rural, remote and urban areas**.
- The balance to the credit of DBN, collected as **Universal Access Levy, does not lapse at the end of the financial year**.
  - *Universal Access Levy is a percentage of revenue collected from telecom operators to fund the DBN.*

#### Why in News?

- Around Rs. 84,000 crore allocated by the Ministry of Finance for the various schemes of Digital Bharat Nidhi (including Provision of Mobile Service in uncovered areas of Aspirational Districts, Mobile Services in Left Wing Extremist Areas, etc.) has been utilized so far.

### 3) UNIVERSAL IMMUNIZATION PROGRAMME

#### About

- The Immunization Programme in India was introduced in **1978** as the '**Expanded Programme of Immunization**' (EPI) by the **Ministry of Health and Family Welfare**.
- In 1985, the programme was modified as '**Universal Immunization Programme**' (UIP) to be implemented in a phased manner to cover all districts in the country.
- Under UIP, immunization is providing **free of cost** to **pregnant women and children (from birth to 16 years)** against **12 vaccine preventable diseases**:
  - Nationally against 9 diseases - **Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Hepatitis B and Meningitis & Pneumonia** caused by Hemophilus Influenza type B;

- Additionally, vaccines are provided against **Rotavirus diarrhoea, Pneumococcal Pneumonia, and Japanese Encephalitis** in specific regions.
- Under UIP, a **child is considered fully immunized** after receiving **all vaccinations** as per the national schedule **within the first year of life**.
- The two major milestones of UIP have been the **elimination of polio** in 2014 and **maternal and neonatal tetanus elimination** in 2015.

#### Mission Indradhanush

- Mission Indradhanush, launched in 2014, aimed at **increasing the full immunization coverage** for children across the country, with a **goal to reach 90% coverage**.

#### Intensified Mission Indradhanush

- To **further intensify the immunization programme**, the Government of India launched the Intensified Mission Indradhanush in 2017.
- Through this programme, Government of India aims to reach each and every child up to two years of age and all those pregnant women who have been **left uncovered under the routine immunisation programme/UIP**.

#### Why in News?

- Approximately 7.43 crore beneficiaries have been registered under the Universal Immunization Programme (UIP).

#### U-WIN Portal:

- U-WIN is a digital platform for **digitalization of all vaccination services** provided under the Universal Immunization Programme to ensure timely administration of life-saving vaccines.
- U-WIN allows for **'Anytime Access'** and **'Anywhere' vaccination**, offering **flexible scheduling options** for recipients.

## 4) NATIONAL MISSION ON NATURAL FARMING

### What is Natural Farming?

- The Ministry of Agriculture & Farmers' Welfare defines natural farming as a **chemical-free farming system rooted in Indian tradition** supported by a **modern understanding of ecology, resource recycling, and on-farm resource optimisation**.
- The entire process is treated as an **agroecology-based diversified farming system** which **integrates crops, trees and livestock with functional biodiversity**.
- It is largely based on **on-farm biomass recycling** with major stress on **biomass mulching, use of on-farm cow dung-urine formulations, maintaining soil aeration, and exclusion of all synthetic chemical inputs**.

### Benefits of Natural Farming

- The broad principle of natural farming is that the **soil itself contains all the nutrients** essential for plant growth.
- Thus, the system is expected to **cut dependency on purchased inputs**, making it **cost-effective**, with scope for **increasing employment and rural development**.
- Natural farming practices also **rejuvenates soil health, fertility & quality and building resilience to climate risks** like waterlogging, flood, drought, etc.
- These practices also **reduce health risks** from exposure to fertilisers, pesticides, etc. and provide **healthy & nutritious food**.



- An overall area of 22 lakh hectares has been brought under natural farming to date, with 34 lakh farmers engaged in the practice.

- Through **improvement of soil carbon content & water use efficiency**, there is an **increase in soil microorganisms and biodiversity** in natural farming.

#### Why in News?

- The Government of India has launched the National Mission on Natural Farming (NMNF) as a **Centrally Sponsored Scheme** under the **Ministry of Agriculture & Farmers' Welfare**.

#### About NMNF

- NMNF aims at promoting natural farming practices across the country for **providing safe & nutritious food for all**.
- In the next two years, NMNF will be implemented in **15,000 clusters in Gram Panchayats**, which are willing, & **reach 1 crore farmers** and initiate natural farming in **7.5 lakh Ha area**.
- Further, **10,000 Bio-input Resource Centres (BRCs)** will be set-up to provide easy availability and accessibility to ready-to-use natural farming inputs for farmers.
- Under NMNF, around **2000 Natural Farming Model Demonstration Farms** shall be established and willing farmers will be trained on the natural farming practices, preparation of inputs, etc.
- Farmers will be provided with an **easy simple certification system** and **dedicated common branding** to provide access to market their natural farming produce.
- **Real time geo-tagged & referenced monitoring** of NMNF implementation shall be done through an **online portal**.

## 5) ATAL INNOVATION MISSION 2.0

#### About AIM

- The Atal Innovation Mission (AIM) is a flagship initiative set up by the **NITI Aayog** to **promote innovation and entrepreneurship** across the length and breadth of the country.
- Setup in **2016**, AIM aims to ensure creation of a **problem-solving innovative mindset** in schools and creating an **ecosystem of entrepreneurship** in universities, research institutions, private and MSME sector.

#### Initiatives under Atal Innovation Mission

##### Atal Tinkering Labs - at School Level

- Atal Tinkering Lab (ATL) is a state-of-the-art space established in a school with a goal to **foster curiosity and innovation** in young minds, between **grade 6th to 12th** across the country through 21st century tools and technologies such as Internet of Things, 3D printing, miniaturized electronics, etc.

##### Atal Incubators - at Universities, Institutions, Industry Level

- AIM has been establishing world-class incubators called **Atal Incubation Centres (AICs)** in universities, institutions, corporates, etc. to foster innovative start-ups and become scalable and sustainable enterprises.

##### Atal Community Innovation Centres

- To promote the benefits of technology led innovation to the **unserved/ underserved regions of India including Tier 2, Tier 3 cities, aspirational districts, tribal, hilly and coastal areas**, AIM is setting up Atal Community Innovation Centres (ACICs).
- ACICs are setup with a unique partnership driven model wherein AIM would **grant up to Rs. 2.5 crore** to an ACIC subject to a partner providing equal or greater matching funding.

##### Atal New India Challenges

- Atal New India Challenge (ANICs) aim to seek, select, support and nurture **technology-based innovations that solve sectoral challenges of national importance and societal relevance**.
- ANIC supports selected start-ups throughout the commercialization stage by **funding up to INR 1 crore** and other associated support.

## Mentor India

- To enable all the initiatives to succeed, AIM has launched the “**Mentor India – The Mentors of Change**” programme, wherein skilled professionals provide pro-bono mentoring to young ATL innovators.

### Why in News?

- The Union Cabinet has approved the **continuation of the Atal Innovation Mission (AIM)**, under the aegis of NITI Aayog till March 31, 2028.
- **AIM 2.0** is designed to strengthen India’s innovation and entrepreneurship ecosystem in **three ways**:
  - (a) by increasing input (i.e., ushering more innovators and entrepreneurs),
  - (b) by improving the success rate or ‘throughput’ (i.e., helping more startups succeed) and
  - (c) by improving the quality of ‘output’ (i.e., producing better jobs, products and services).

## 6) OTHER NOTABLE TOPICS

### 6.1. SAMRIDH

#### About

- The Startup Accelerators of MeitY for Product Innovation, Development and Growth (SAMRIDH) is a flagship programme of the **Ministry of Electronics and Information Technology (MeitY)** to **foster innovation and support start-ups**.
- The programme, launched in **2021**, aims to **support 300 tech start-ups** in 3-year duration, providing them with the tools, resources and funding they need to flourish.
- The scheme is being implemented by **MeitY Start-up Hub (MSH)**.

#### MeitY Start-up Hub:

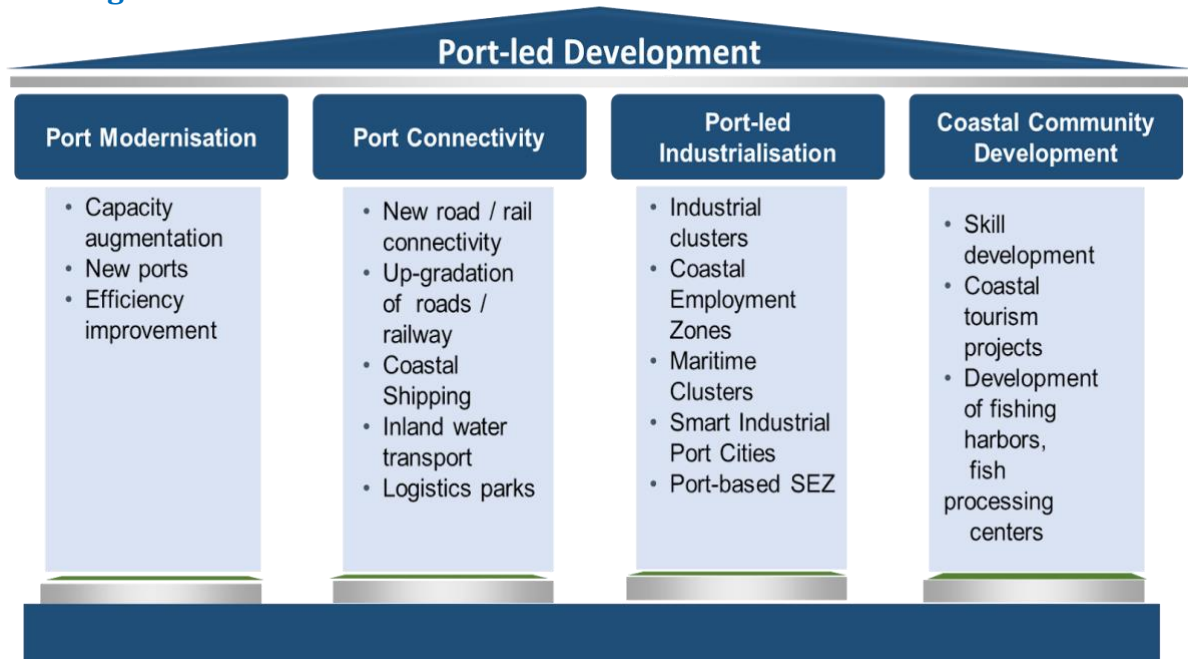
- To **facilitate MeitY’s vision** of promoting technology innovation, start-ups, and the creation of Intellectual Properties, a **nodal entity called ‘MeitY Start-up Hub’ was set up in 2016 under its aegis**.
- MSH acts as a **national coordination, facilitation, and monitoring center** that integrates all the incubation centers, start-ups, and innovation-related activities of MeitY.

### 6.2. SAGARMALA

#### About

- The Sagarmala project was launched in 2015 to **develop a string of ports along India’s 7500 km long coast** to promote “**Port-led development**”.
- It aims to develop access to new development regions and enhance connectivity with main economic centres and beyond through expansion of rail, inland water, coastal and road services.
- The **Ministry of Ports, Shipping and Waterways** has been appointed as the **nodal ministry** for this initiative.
- To assist in implementation of the Sagarmala Programme, the **Sagarmala Development Company Limited** has been incorporated under the Companies Act, 2013.
- The vision of the programme is to **reduce logistics cost** for Export-Import (EXIM) and domestic trade with minimal infrastructure investment.

## 4-Pillars of Sagarmala



# ENVIRONMENT

## 1) NATIONAL GREEN HYDROGEN MISSION

### About NGHM

- Launched in 2023, the National Green Hydrogen Mission (NGHM) aims to **promote green hydrogen** in a bid to **cut emissions** and **become a major exporter** in the field.
- The overarching objective of the Mission is to **make India the Global Hub for production, usage and export of Green Hydrogen and its derivatives.**
- The Mission will **build capabilities to produce at least 5 Million Metric Tonne (MMT) of Green Hydrogen per annum by 2030.**
- Under the **Strategic Interventions for Green Hydrogen Transition Programme (SIGHT)**, financial incentives will be provided under the Mission.
- Further, a public-private partnership framework for R&D (**Strategic Hydrogen Innovation Partnership – SHIP**) will be facilitated under the Mission.
- The **Ministry of New & Renewable Energy** will be responsible for overall coordination and implementation of the Mission.

### Mission Components

- The Mission strategy comprises interventions for:
  - **demand creation** by making Green Hydrogen produced in India competitive for exports and through domestic consumption.
  - **addressing supply side constraints** through an incentive framework, and
  - **building an enabling ecosystem** to support scaling and development.

### Expected Benefits

- The targets by 2030 are likely to bring in **over Rs. 8 lakh crore investments** and create **over 6 lakh jobs.**
- Nearly **50 MMT per annum of CO2 emissions are expected to be averted** by 2030.
- This will contribute to India's aim to become **Aatmanirbhar (self-reliant) through clean energy** and **achieve net-zero carbon emissions by 2070.**

### Why in News?

- The Government of India has issued a call for proposals to establish **Centres of Excellence (CoEs)** for Green Hydrogen research under the National Green Hydrogen Mission.
- These Centres of Excellence will serve as hubs of innovation, working to advance Green Hydrogen technology, and address challenges in the field.

#### Hydrogen:

- Hydrogen (H<sub>2</sub>) is a **colourless, odourless, tasteless, non-toxic and highly combustible gaseous substance.**
- It is also the **lightest, simplest and most abundant member** of the family of chemical elements in the universe.
- Hydrogen is a **clean fuel** and an efficient energy carrier. It is emerging as an important source of energy since it has **zero carbon content** in contrast to hydrocarbons which have net carbon content between 75 and 85 per cent.
- When burnt, Hydrogen produces **water as a by-product** and is, therefore, **environmentally benign.**

#### How is Hydrogen Generated?

- Hydrogen is one of the most abundant elements available on earth. However, it is **not found in elemental form.**







- The richest source of hydrogen is **water**. Hydrogen is also found in **organic compounds and fossil fuels** like petroleum, natural gas, coal and biomass.
- Hydrogen for commercial use is produced from **catalytic steam reforming of natural gas, naphtha and other hydrocarbons, partial oxidation of hydrocarbons, gasification of coal and electrolysis of water**.
- The energy industry refers to **different “types” of hydrogen** to differentiate how it is produced.

### What is Green Hydrogen?

- Green hydrogen is produced through **electrolysis using renewable sources of energy** such as solar, wind or hydel power. It is produced by splitting water into hydrogen and oxygen using renewable electricity.
- That makes green hydrogen the **cleanest option** – hydrogen from renewable energy sources **without CO2 as a by-product**.

### Other Types of Hydrogen

- Hydrogen can be ‘grey’, ‘brown’, ‘Turquoise’ and ‘blue’ too.
  - The vast majority of industrial hydrogen is currently produced from natural gas through a conventional process known as **steam methane reforming (SMR)**. It produces what is known as **Grey Hydrogen** and has the **major disadvantage of releasing large quantities of by-product CO2** into the atmosphere - the main culprit for climate change.
  - Grey hydrogen has increasingly been produced also from **coal**, with significantly higher CO2 emissions per unit of hydrogen produced so much that it is often called **brown or black hydrogen** instead of grey.
  - **Blue hydrogen**, too, is produced using electricity generated by burning **methane or coal** but with **technologies to prevent the carbon released** in the process from entering the atmosphere;
  - **Turquoise hydrogen** is made using a process called **methane pyrolysis** to produce hydrogen and **solid carbon**. As a result, there is no requirement for carbon capture and storage (CCS) and the carbon can even be used in other applications. Where the electricity driving the pyrolysis is renewable, the process is **zero-carbon**.

Color	<b>GREY</b> HYDROGEN	<b>BLUE</b> HYDROGEN	<b>TURQUOISE</b> HYDROGEN*	<b>GREEN</b> HYDROGEN
Process	SMR or gasification	SMR or gasification with carbon capture (85-95%)	Pyrolysis	Electrolysis
Source	Methane or coal 	Methane or coal 	Methane 	Renewable electricity 

Note: SMR = steam methane reforming.

\* Turquoise hydrogen is an emerging decarbonisation option.

## 2) NATIONAL CLEAN AIR PROGRAM

### About NCAP

- The National Clean Air Programme (NCAP) was launched in 2019 by the **Ministry of Environment Forest and Climate Change (MoEF&CC)** to tackle the air pollution crisis in a comprehensive manner.
- NCAP aims for a **reduction of 20-30% in Particulate Matter (PM10) concentrations** by 2024-25 compared to the baseline year of 2017-18. The target has been **revised** to achieve up to a **40% reduction in PM10 levels** or to meet **national standards (60 µg/m<sup>3</sup>) by 2025-26**.
- **130 million plus/non-attainment cities** (cities exceeding **National Ambient Air Quality Standards (NAAQS)**, consecutively for five years) have been identified for implementing mitigation actions under NCAP.
- **City Action Plans (CAPs)** have been prepared by all 130 cities and are being implemented by **Urban Local Bodies**.
- CAPs target city specific air polluting sources like Soil & Road Dust, Vehicles, Domestic Fuel, Construction Material and Industries, etc.



- **“PRANA”** (Portal for Regulation of Air-pollution in Non-Attainment cities) is a portal for monitoring of implementation of NCAP.
- It supports tracking of physical as well as financial status of city air action plan implementation and disseminate information on air quality management efforts under NCAP to public.

### Why in News?

- 97 cities out of 130 cities under NCAP have shown improvement in air quality in terms of PM10 concentrations in FY 2023-24 as compared to 2017-18.

### NAAQS:

- Ambient air quality refers to the **condition or quality of air surrounding us in the outdoors**.
- National Ambient Air Quality Standards (NAAQS) are the **standards for ambient air quality set by the Central Pollution Control Board (CPCB)** that are applicable nationwide.
- The CPCB has been conferred this power by the **Air (Prevention and Control of Pollution) Act, 1981**.
- NAAQS was adopted in **1982** for the first time in India and it was revised in 1994 and 2009.
- The current standards (2009) comprise the following 12 pollutants:
  - **Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>), PM<sub>10</sub>, PM<sub>2.5</sub>, Lead (Pb), Carbon Monoxide (CO), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo(a)Pyrene (BaP), Arsenic (As) and Nickel (Ni)**.

## 3) GURU GHASIDAS-TAMOR PINGLA TIGER RESERVE

### Tiger Reserves

- In India, **Tiger reserves** were set up as a part of **Project Tiger** initiated in **1973**.
- Tiger Reserves are notified by **State Governments** as per provisions of the **Wildlife (Protection) Act, 1972** on advice of the **National Tiger Conservation Authority (NTCA)**.
- Tiger reserves are created on the basis of a **‘core-buffer’ strategy**.
  - **Core area**
    - A particular expanse of land is identified and marked as the **‘core area’** of the reserve. These areas are **kept free of human activities**.

- It usually has the legal status of a **National Park** or **Wildlife Sanctuary**.
- **Buffer zone**
  - The **buffer areas** usually surround the core area and are comparatively less frequented by wildlife.
  - It is **subjected to 'conservation-oriented land use'** and hence certain everyday activities necessary for daily life and living of surrounding villages are allowed.

### Why in News?

- **Guru Ghasidas-Tamor Pingla Tiger Reserve** in **Chhattisgarh** has been notified as **India's 56th tiger reserve**.

### Guru Ghasidas-Tamor Pingla Tiger Reserve

- It is the **third largest tiger reserve** in India after **Nagarjunasagar-Srisailem Tiger Reserve in Andhra Pradesh** and **Manas Tiger Reserve in Assam**.
- This tiger reserve encompasses the **Guru Ghasidas National Park** and **Tamor Pingla Wildlife Sanctuary**.
- The tiger reserve is **contiguous** with the **Sanjay Dubri Tiger Reserve in Madhya Pradesh** and is also connected to **Bandhavgarh Tiger Reserve in Madhya Pradesh** to the West and **Palamau Tiger Reserve in Jharkhand** to the East.
- Nestled in the **Chota Nagpur plateau** and partly in **Baghelkhand plateau**, the tiger reserve is blessed with distinct species of flora such as **Teak, Sal, Tendu, Mahua**, etc.
- Fauna found here include **Tigers, Leopards, Jackals, Barking deer, Wild Boar, Sloth bear**, etc.

## 4) UN BIODIVERSITY CONFERENCE (COP 16)

### Convention on Biological Diversity

- Signed by 150 government leaders at the **1992 Rio Earth Summit**, the Convention on Biological Diversity (CBD) is dedicated to **promoting sustainable development**.
- Conceived as a practical tool for translating the **principles of Agenda 21** into reality, the Convention recognizes that **biological diversity** is about more than plants, animals and micro organisms and their ecosystems – it is **about people and our need for food security, medicines, fresh air and water, shelter, and a clean and healthy environment** in which to live.
  - *Agenda 21 is a **non-binding action plan** of the United Nations for sustainable development, covering a wide range of specific natural resources and the role of different groups, as well as issues of social and economic development and implementation.*
  - *It is a product of the **1992 Rio Earth Summit**.*
- **India** is a party to CBD and enacted the **Biological Diversity Act, 2002** to meet the obligations under Convention on Biological Diversity.
- The **CBD Secretariat** is based in **Montreal, Canada** and it operates under the **United Nations Environment Programme (UNEP)**.
  - *The UNEP is the leading environmental authority in the United Nations system. It was founded as a result of the UN Conference on the Human Environment (also known as the Stockholm Conference) in 1972.*
- The Parties under CBD meet at regular intervals and these meetings are called **Conference of Parties (COP)**.

### Objectives

- The CBD entered into force in 1993. It has 3 main objectives:
  1. The **conservation of biological diversity**
  2. The **sustainable use of the components of biological diversity**

3. The **fair and equitable sharing of the benefits** arising out of the utilization of genetic resources.

### Aichi Targets

- The 'Aichi Targets' were adopted by the Convention on Biological Diversity at the tenth meeting of the **Conference of the Parties to the CBD (COP10)** which took place in **Nagoya, Japan in 2010**.
- The short-term plan provides a set of **20 time-bound, measurable targets to be met by the year 2020**, collectively known as the **Aichi Biodiversity Targets**, grouped under **five Strategic Goals**.

### Protocols to CBD

#### Cartagena Protocol

- The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international agreement which aims to **ensure the safe handling, transport and use of living modified organisms (LMOs)** resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health.
- It entered into force in 2003. Number of Parties: more than 170 countries (including **India**).

#### Nagoya Protocol

- The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity is an international agreement which aims at **sharing the benefits arising from the utilization of genetic resources in a fair and equitable way**.
- It entered into force in 2014. Number of Parties: more than 130 countries (including **India**).

#### Nagoya – Kuala Lumpur Supplementary Protocol

- Adopted as a **supplementary agreement to the Cartagena Protocol on Biosafety**, the Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety aims to contribute to the conservation and sustainable use of biodiversity by providing **international rules and procedures in the field of liability and redress relating to living modified organisms**.
- It entered into force in 2018. Number of Parties: more than 50 countries (including **India**).

### Reports Published

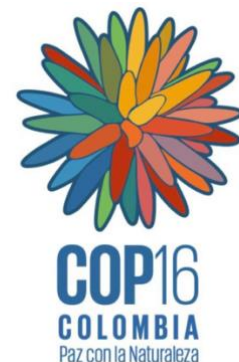
- The **Global Biodiversity Outlook (GBO) Report** is the flagship publication of the CBD and summarises progress made towards achieving the objectives of the Convention, such as the Aichi Targets and identifies key actions to achieve these.

### Why in News?

- The Sixteenth meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 16) was recently held in **Cali, Colombia**.

### Highlights of Previous COP

- COP 16 follows meetings in **2022 at Montreal, Canada**. At that meet, countries agreed to **protect 30% of land and water by 2030**, known as the '**30-by-30 agreement**', at a time when less than 17% of land and 10% of marine areas were protected.
- In 2022, the **Kunming-Montreal Global Biodiversity Framework (KMGBF)**, as it is formally known, set **23 action-oriented global targets for urgent action** in the decade to 2030.
- The actions listed in each target needed to be **initiated immediately and completed by 2030**.



- Other than the 30-by-30 goals, targets include **reducing the introduction of invasive alien species by 50%** and **minimising their impact** by 2030.
- It also aimed to **reduce pollution risks** and the **negative impact of pollution from all sources to tolerable levels** by 2030; set up a mechanism for **benefit-sharing from the use of digital sequence information on genetic sources and traditional knowledge**, and **integrating biodiversity** into policies, regulations, planning and development processes.
- A **key aim of the COP-16** was to **agree on mechanisms** to implement these targets as well as discuss ways to organise funding.

#### What are some decisions taken at COP-16?

- Governments have agreed to establish a new global fund (the '**Cali Fund**') dedicated to **sharing the benefits derived from using Digital Sequence Information (DSI)** from genetic resources.
  - *DSI is a term used to describe genetic information that has been sequenced from the natural world and made available online for research.*
- **Companies using DSI from genetic biodiversity resources** in their products **should pay a portion of their profits or revenues into the 'Cali Fund', a portion of which will be allocated to Indigenous Peoples and local communities**, either directly or through governments.
- Negotiators have decided on setting up a **subsidiary body** that will include **indigenous groups and peoples** in discussions around conservation and biodiversity.
- Other key decisions:
  - Establishing a **network of regional Centers** for Scientific and Technical Cooperation;
  - **Integrating UN-level climate action and biodiversity efforts;**
  - **Procedures to identify Ecologically or Biologically Significant Marine Areas (EBSAs)**, essential for protecting 30% of ocean areas by 2030;
  - Guidance on **invasive Alien Species**.

## 5) UN CLIMATE CHANGE CONFERENCE (COP 29)

### About UNFCCC

- The United Nations Framework Convention on Climate Change (UNFCCC), signed in **1992** at the **United Nations Conference on Environment and Development** (also known as the **Rio Earth Summit**), constitutes the **foundational climate agreement** that has provided the platform for most subsequent international climate agreements.
- The UNFCCC entered into force in **1994**. Today, it has **near-universal membership**. The **198 countries** (including **India**) that have ratified the Convention are called **Parties to the Convention**.
- The ultimate objective of the Convention is to **stabilize greenhouse gas concentrations** at a level that would prevent dangerous anthropogenic interference with the climate system.
- The UNFCCC endorses the **concept of common but differentiated responsibility (CBDR)** in the climate context.
  - This means that while developing country parties are expected to contribute to climate mitigation, because of superior capacity to undertake mitigation and greater contribution to the problem of climate change as a result of historical emissions, **developed countries are expected to take the lead in combating climate change and the adverse effects thereof.**

## About CoP

- The Conference of Parties, known as COP, is the **decision-making body** responsible for monitoring and reviewing the implementation of the United Nations Framework Convention on Climate Change.
- It brings together the 198 Parties – that have signed on to the Framework Convention. The COP has **met annually since 1995**.

## Timeline

### 1992: Earth Summit, Rio de Janeiro

- It **finalised the UNFCCC**, the mother agreement that lays down the objectives and principles on which climate action by countries are to be based.
- It **acknowledged that developing countries had fewer obligations and capabilities to bring down emissions**.

### 1997: COP3, Kyoto

- Delivered the **Kyoto Protocol**, precursor to the Paris Agreement.
- The Protocol assigned **specific emission reduction targets for a set of developed countries**, to be achieved by **2012**.
- Others were supposed to take **voluntary actions** to reduce emissions.

### 2007: COP13, Bali

- It reaffirmed the principles of **common but differentiated responsibilities (CBDR)** in the efforts to find a replacement to the Kyoto Protocol, which developed nations were getting increasingly uncomfortable with, especially after the emergence of **China** as the world's leading emitter.
- Developed countries want **emission reduction targets for everyone, or for nobody**, their argument being that without stringent action from China and India, the success of any climate action would not be possible.

### 2009: COP15, Copenhagen

- **Developed countries committed to mobilising \$100 billion every year in climate finance** for developing countries from **2020**.

### 2015: COP21, Paris

- The successor agreement was finally delivered. The **Paris Agreement does not assign emission reduction targets to any country**. Instead, it asks **all to do the best they can**.
- The Paris Agreement requires all Parties to put forward their best efforts through **nationally determined contributions (NDCs)** and to strengthen these efforts in the years ahead.
- The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century **well below 2 degrees Celsius above pre-industrial levels** and to pursue efforts to limit the temperature increase even further to **1.5 degrees Celsius**.

### 2021: COP26, Glasgow

- India at COP 26 expressed to intensify its climate action by updating its **NDCs** to the Paris Agreement and presented to the world **five nectar elements (Panchamrit) of India's climate action**.
- The updated NDCs is as follows:
  - India will increase its **non-fossil fuel power capacity to 500 gigawatts (GW)** by the end of the decade.
  - **Reduce Emissions Intensity of India's GDP by 45 percent** by 2030, from 2005 level.
  - Fulfilling **at least half of its energy requirements via renewable energy** by 2030.
  - The country will also strive to **cut carbon-dioxide emissions by 1 billion tonnes** from business as usual by 2030.

- By **2070**, India will achieve the target of **net-zero emissions**.

### 2022: COP27, Sharm-El-Sheik

- COP27 agreed to establish the **Special Loss and Damage Fund** which will help to **make up for the losses suffered by developing nations that are vulnerable to climate change**.
- COP27 also agreed to the creation of **UN's Early Warning System for All initiative**, with an investment of \$3.1 billion between 2023 and 2027, to **improve understanding of climate-related risks in developing countries**.

### 2023: COP28, Dubai

- During COP28, the **first global stocktake (GST)** - a **periodic review mechanism** established under the **Paris Agreement** - **concluded**.
- The global stocktake revealed that the **Global temperature rise** is now expected to be between **2.4-2.6°C**, a significant improvement from the earlier projection of 3.7-4.8°C in 2010.
- At **COP28 the loss and damage fund was operationalised**. By the end of the conference, commitments worth about **US\$ 800 million** had been made.

### Why in News?

- The 29th session of the Conference of the Parties (COP) – an annual convening of countries signatory to UNFCCC – was recently concluded in **Baku, Azerbaijan**.

### Outcomes of COP 29

- **New Collective Quantified Goal (NCQG):**
  - The NCQG is the **amount that must be mobilised by developed countries every year from 2025 onward to finance climate action in developing countries**.
  - **Developed countries** have agreed to **triple finance to developing countries**, from the previous goal of USD 100 billion annually, to **USD 300 billion annually by 2035**.
- **Carbon Markets:**
  - COP 29 agreed on the **rules and methodologies** for the **international carbon trading system** envisioned by **Article 6 of the Paris Agreement**.
    - *Article 6 sets out a system in which countries can trade emission reduction credits between themselves so that an emission reduction in one country can be counted against the emissions generated in another country.*
- **Baku Workplan:**
  - The Baku Workplan adopted at COP29 aims to **elevate the voices of Indigenous Peoples and local communities in climate action**.
- **COP29 Hydrogen Declaration:**
  - It endorsed the **commitment to scale up renewable, clean/zero-emission and low-carbon hydrogen production** and accelerate the decarbonisation of existing hydrogen production from unabated fossil fuels.
- **COP 29 Declaration on reducing methane from organic wastes:**
  - Around **30 countries**, collectively **responsible for nearly 50% of global methane from organic waste emissions**, endorsed the COP29 declaration on reducing methane from organic waste.
  - It aims to set **sectoral targets to reduce methane from organic waste**.
    - **India is not a signatory** to the Declaration.



### Shortcomings in COP 29

- The **\$300 billion annual climate finance commitment** from developed countries is **insufficient to meet the estimated \$1.3 trillion** annual climate finance needs of developing countries.
- COP29 saw **insufficient pledges to meet the 1.5°C target** as global emissions have been rising in 2023.
  - A study released before COP29 indicated that the world was **already 1.49°C warmer** than pre-industrial levels by the end of 2023.

## 6) OTHER NOTABLE TOPICS

### 6.1. CENTRAL ZOO AUTHORITY

#### About CZA

- The Central Zoo Authority is a **statutory body** established in **1992** under the **Wildlife (Protection) Act, 1972**.
- The Authority functions under the **Ministry of Environment, Forest and Climate Change** and consists of a Chairman, ten members and a Member Secretary.

#### Objectives

- The main objective of the Authority is to complement and strengthen the national effort in **conservation of the rich biodiversity of the country**, particularly the fauna as per the National Zoo Policy, 1998.
- Other objectives of the Authority include - enforcing **minimum standards and norms** for upkeep and healthcare of animals in **Indian zoos** and to **control mushrooming of unplanned and ill-conceived zoos**.

#### Functions

- **Every zoo in the country is required to obtain recognition** from the Authority for its operation.
- The **Authority evaluates the zoos** with reference to the parameters prescribed under the Rules and grants recognition, accordingly.
- The Authority's role is **more of a facilitator than a regulator**. It therefore provides **technical and financial assistance** to such zoos which have the potential to attain the desired standard in animal management.
- Apart from the primary function of grant of recognition, the Central Zoo Authority also **regulates the exchange of animals of endangered category** listed under Schedule- I and II of the Wildlife (Protection) Act, 1972 among zoos.
- **Exchange of animals between Indian and foreign zoos** is also approved by the Authority.

### 6.2. BANDHAVGARH TIGER RESERVE

#### About

- Bandhavgarh Tiger reserve is **located between the Vindhyan and Satpura ranges in Madhya Pradesh**.
- The habitat consists of **tropical moist, deciduous forests** with sal, mixed forest and grasslands.
- **Fauna:** Bengal Tiger, Leopard, Dhole, Sloth Bear, Fishing Cat, Wild Elephant, etc.
- Bandhavgarh Tiger reserve has great historical significance evidenced by the presence of the **Bandhavgarh fort**, various **Buddhist caves, Rock paintings and carvings** inside the Protected Area.



# FLORA & FAUNA

## 1) MONOTREMES

### About

- Monotremes are a **rare group of oviparous** (egg laying) **mammals**.
- While most mammals give birth to live young, monotremes are the **only mammals that lay eggs**, representing a **unique evolutionary bridge between reptiles and modern mammals**.
- This group is **small**, consisting of just five known species.
- They are **found only in Australia and New Guinea**.
- Monotremes have some **skeletal and anatomical similarities with reptiles** and a **lower body temperature than most other mammals**.



# AGRICULTURE

## 1) KISAN CREDIT CARD SCHEME

### About the Scheme

- The Kisan Credit Card (KCC) scheme was introduced in **1998** with the aim of providing **adequate and timely credit support** to the farmers for their cultivation and other needs as indicated below:
  - a. To meet the short term credit requirements for cultivation of crops;
  - b. **Post-harvest expenses;**
  - c. Produce marketing loan;
  - d. **Consumption requirements of farmer household;**
  - e. **Working capital for maintenance of farm assets and activities allied to agriculture;**
  - f. Investment credit requirement for agriculture and allied activities.
- **Note:** The aggregate of components 'a' to 'e' above will form the **short term credit limit portion** and the aggregate of components under 'f' will form the **long term credit limit portion**.
- Under the KCC Scheme, a **flexible limit of Rs.10,000 to Rs.50,000** has been provided to marginal farmers (as Flexi KCC) based on the land holding and crops grown.
- The beneficiaries under the scheme will be issued with a **Smart card/ Debit card**.
  - It enables farmers to purchase agricultural inputs such as seeds, fertilizers, pesticides, etc. and draw cash to satisfy their agricultural and consumption needs.
- Cards issued under the scheme are **valid for 5 years subject to annual review**.
- The Government of India provides **interest subvention** and **prompt repayment incentive** to the farmers under KCC scheme.
- The Scheme is implemented by **Commercial Banks, Regional Rural Banks, Small Finance Banks and Cooperatives**.



### Eligibility

- **Farmers** - individual/joint borrowers who are owner cultivators;
- **Tenant farmers, oral lessees & sharecroppers;**
- **Self Help Groups (SHGs) or Joint Liability Groups (JLGs)** of farmers including tenant farmers, sharecroppers etc.
- In 2019, KCC was extended to **farmers who are involved in activities related to animal husbandry and fisheries**.

# ECONOMY

## 1) U.N. REPORT LAUDS INDIA'S GENDER BUDGETING INITIATIVES

### What is Gender Budgeting?

- Gender Budgeting is an approach to government fiscal policy that seeks to **use a country's budget(s) as a tool to resolve societal gender inequality and promote inclusive development.**
- It is an exercise that applies a **gendered-lens to the allocation and tracking of public funds** to achieve gender equality.
- It is an example of **outcome-oriented expenditure allocation.**
- India started releasing a Gender Budget along with the Union Budget in **2005-06.**

### Objectives

- The main objectives of Gender Budgeting are:
  - to **promote accountability and transparency in fiscal planning;**
  - to **increase gender responsive participation** in the budget process;
  - to **advance gender equality and women's rights.**

### Why in News?

- A new report of the **United Nations** has noted that **adoption of gender-responsive budgeting by Asia-Pacific countries like India** demonstrates their strong commitment to ensuring the efficient allocation of resources for women and girls.
- The report analyzed how countries in the Asia and the Pacific region have progressed towards implementing the **Beijing Declaration and Platform for Action (BPfA).**
- The report, however, pointed out that the effectiveness of gender budgeting remains limited due to **exclusion of key programmes** that benefit women and the **lack of sex-disaggregated data.**

### Recommendations

- The report recommended the Government to make concerted efforts to
  - **address gaps in the design and use** of the Gender Budget Statement;
  - **establish stronger monitoring mechanisms** to enhance the quality of gender budgeting efforts at the sectoral level;
  - **integrate gender budgeting considerations during the budget prioritisation phase;** and
  - **encourage sub-national governments** to adopt gender budgeting practices.

#### Beijing Declaration and Platform for Action:

- The Beijing Declaration and the Platform for Action was adopted by the **Fourth World Conference on Women** organized by the **United Nations in 1995.**
- Adopted unanimously by 189 countries, it is an **agenda for women's empowerment** and considered the **key global policy document on gender equality.**
- It covers **12 critical areas of concern:** women and poverty; education and training of women; women and health; violence against women; women and armed conflict; women and the economy; women in power and decision-making; institutional mechanisms for the advancement of women; the human rights of women; women and the media; women and the environment; and the girl child.

## 2) TRADE AND ECONOMIC PARTNERSHIP AGREEMENT

### About TEPA

- In March 2024, India signed a trade agreement with the four-nation **European Free Trade Association (EFTA)**, officially known as **Trade and Economic Partnership Agreement (TEPA).**

### European Free Trade Association (EFTA):

- EFTA is an **intergovernmental organization of four member countries that are not part of the European Union (EU): Iceland, Liechtenstein, Norway, and Switzerland.**
- The association was set up in **1960** for the promotion of free trade and economic integration for the benefit of its four Member States.



- TEPA covers various aspects such as trade in goods, rules of origin, intellectual property rights, services, investment promotion, government procurement, technical trade barriers, and trade facilitation.
- This is **India's fourth such agreement since 2014.** The previous agreements were signed with **Mauritius, the UAE, and Australia.**

### Highlights of TEPA

- EFTA has committed to **promote investments** with the aim to **increase the stock of foreign direct investments by USD 100 billion in India** in the next 15 years, and to **facilitate the generation of 1 million direct employment in India**, through such investments.
- For the **first ever time in the history of FTAs**, a **legal commitment** is being made about promoting **target-oriented investment and creation of jobs.**
- TEPA would **stimulate our services exports** in sectors of our key strength / interest such as IT services, business services, personal, cultural, sporting and recreational services, etc.
- Services offers from EFTA include better access through **digital delivery of Services (Mode 1), commercial presence (Mode 3)** and improved commitments and certainty for entry and **temporary stay of key personnel (Mode 4).**

### Why in News?

- Officials from Government of India recently visited Norway to push for early implementation of \$100 bn investment committed under the Trade and Economic Partnership Agreement (TEPA).



- The two-way trade between India and EFTA was \$18.65 billion in 2022-23, compared to \$27.23 billion in the previous fiscal year, with a **trade deficit of \$14.8 billion.**
- **Switzerland** is currently **India's largest trading partner in the EFTA bloc**, followed by **Norway.**

### Modes of supply of services:

- **International trade in services** typically occurs in any of these four modes of supply
  - **Cross border supply of services (Mode 1):** It is the supply of a service from the territory of one country into the territory of another country.
  - **Consumption abroad (Mode 2):** It is the supply of a service in the territory of one country to the consumer of another country.
  - **Commercial presence (Mode 3):** It is the supply of a service by a service supplier of one country, through commercial presence, in the territory of another country.
  - **Presence/Movement of natural persons/professionals (Mode 4):** It is the supply of a service by a service supplier of one country, through the presence of natural persons of a country in the territory of another country.

### 3) WORLD INTELLECTUAL PROPERTY INDICATORS

#### About Intellectual Property

- Intellectual Property (IP) refers to **creations of the mind**, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.
- IP is **protected in law** by, for example, patents, copyright and trademarks, which enable people to **earn recognition or financial benefit** from what they invent or create.

#### Types of Intellectual Property:

##### 1. Patents:

- A patent is an **exclusive right granted for an invention**. Generally speaking, a patent provides the patent owner with the **right to decide how - or whether - the invention can be used by others**.
- In exchange for this right, the patent owner makes **technical information about the invention publicly available** in the published patent document.

##### 2. Copyright:

- Copyright is a legal term used to describe the **rights that creators have over their literary and artistic works**.
- Works covered by copyright range from **books, music, paintings, sculpture and films, to computer programs, databases, advertisements, maps and technical drawings**.

##### 3. Trademarks:

- A trademark is a **sign capable of distinguishing the goods or services** of one enterprise from those of other enterprises.

##### 4. Industrial Designs:

- An industrial design constitutes the **ornamental or aesthetic aspect of an article**.
- A design may consist of **three-dimensional features**, such as the shape or surface of an article, or of **two-dimensional features**, such as patterns, lines or color.

##### 5. Geographical Indications:

- Geographical indications are **signs used on goods that have a specific geographical origin** and possess **qualities, a reputation or characteristics** that are **essentially attributable to that place of origin**.

##### 6. Trade Secrets:

- Trade secrets are **IP rights on confidential information which may be sold or licensed**.

#### Why in News?

- The **World Intellectual Property Organization (WIPO)** has published the **World Intellectual Property Indicators (WIPI) 2024**, underscoring global trends in intellectual property filings.

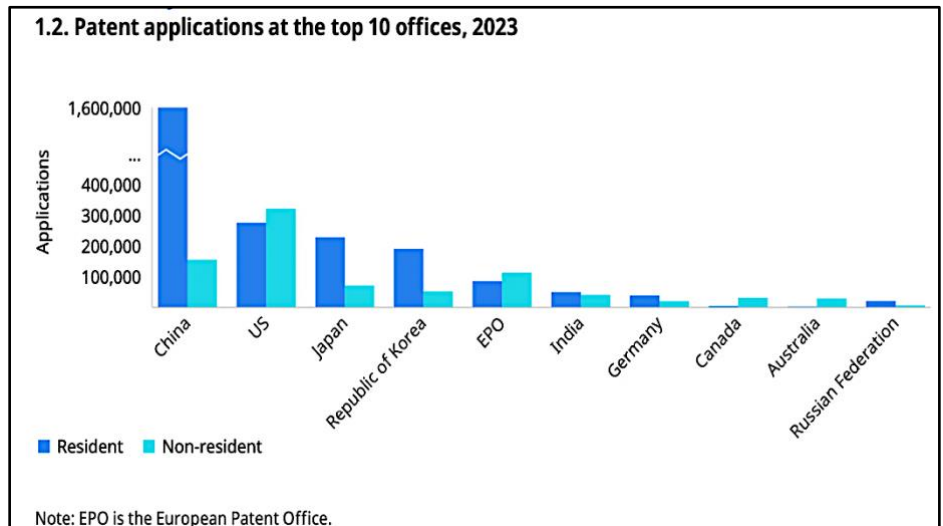
#### Highlights of the Report

- The report reveals **significant growth** in patent, trademark, and industrial design applications across top economies.
- **India** has secured a **spot in the global top 10 for all three major IP rights -- patents, trademarks, and industrial designs**.

#### About WIPO:

- The **World Intellectual Property Organization** is a **specialized agency of the United Nations** that serves the world's innovators and creators, ensuring that their ideas travel safely to the market and improve lives everywhere.
- WIPO's two main objectives are
  - (i) to **promote the protection of intellectual property worldwide**; and
  - (ii) to **ensure administrative cooperation** among the intellectual property Unions established by the treaties that WIPO administers.
- **Headquartered in Geneva, Switzerland**, WIPO currently has 193 member states (including **India**).

- India recorded the **fastest growth in patent applications** in 2023 among the top 20 origins.
- **India ranks sixth globally for patents** with 64,480 applications, with **resident filings accounting for over half of all submissions (55.2%)** -- a first for the country.
- **India's patent-to-GDP ratio** also saw significant growth, rising from 144 to **381** in the past decade, indicating that **IP activity is scaling alongside economic expansion**.
- **India ranked fourth globally in trademark filings**. Nearly **90%** of these filings were by residents.



## 4) OTHER NOTABLE TOPICS

### 4.1. WORLD FISHERIES DAY

#### Context

- World Fisheries Day is observed every year on November 21st.

#### Indian Fisheries Sector

- As the **3rd largest fish producer**, **2nd largest aquaculture nation** in the world after **China** and the **largest producer of shrimp**, **India** contributes significantly to both domestic food security and the global seafood market.
- The **Indian fisheries sector** supports the livelihoods of around **30 million people**, especially in coastal and rural communities.
- Initially **dominated by marine fish production**, the sector has seen a **significant shift towards inland fisheries**, which now contributes around **70% of the country's total fish production**.

#### Government Initiatives and Schemes to Promote Sustainable Fisheries

##### Pradhan Mantri Matsya Sampada Yojana (PMMSY):

- Launched in 2020, it is a flagship initiative aimed at **transforming India's fisheries sector**.
- The scheme focuses on **enhancing aquaculture productivity**, **improving fisheries management**, and **creating 55 lakh new jobs** in the sector, along with **big infrastructural changes of establishing five integrated aqua parks**.
- It also envisages **doubling fisheries exports to 1 lakh crores**.

##### Fisheries and Aquaculture Infrastructure Development Fund (FIDF):

- FIDF was introduced in 2018-19 to provide **funding for the creation of infrastructure in both marine and inland fisheries**.
- FIDF loans can **cover up to 80% of the project cost**, with **interest subvention of up to 3%**.

##### National Policy on Marine Fisheries (NPMF, 2017):

- The Government of India has introduced the NPMF, which places a **strong emphasis on sustainability** as the core principle for all marine fisheries actions.
- This policy guides the conservation and management of India's marine fishery resources.

## 4.2. GIFT CITY

### About IFSC

- An International Financial Services Centre (IFSC) is a jurisdiction that provides **world class financial services to non-residents and residents** in a currency other than the domestic currency (Indian Rupee) of the location where the IFSC is located.
- **Services provided by an IFSC:**
  - Fund-raising services for individuals, corporations and governments
  - Asset management and global portfolio diversification undertaken by pension funds, insurance companies and mutual funds
  - Wealth management
  - Merger and acquisition activities among trans-national corporations, etc.
- The **International Financial Services Centres Authority (IFSCA)** was established in 2020 as a unified authority for the development and regulations of IFSCs in India.

### GIFT City

- **India's 1st IFSC** has been set up at the **Gujarat International Finance Tec-City (GIFT City) in Gandhinagar**.
- Operationalized in 2015, it is intended to provide **Indian corporates with easier access to global financial markets**, and to complement and promote the **further development of financial markets** in India.
- It seeks to bring back the financial services and transactions that are currently carried out in offshore financial centers to India by offering a business and regulatory environment that is comparable to other leading international financial centres in the world.

## 4.3. LIBERALIZED REMITTANCE SCHEME

### About

- The liberalized remittance scheme **allows Indian residents to remit funds abroad for various specified purposes without any restrictions or prior approval from the RBI**.
- The scheme was introduced in India in **2004** by the **Reserve Bank of India (RBI)**.
- Prior to this, the **Foreign Exchange Management Act (FEMA) 1999** had imposed **several restrictions** on the transfer of funds from India to other countries.
- Under LRS, **individuals were allowed to remit up to USD 25,000 per financial year for eligible transactions**. The amount was subsequently **increased to USD 50,000** in 2007 and further increased to **USD 250,000** in 2013.

### Objectives

- The primary objective of LRS is to **liberalize the existing foreign exchange regulations and facilitate the smooth transfer of funds abroad** by Indian residents.
- The scheme also aims at **promoting international trade and investment**, as well as for **facilitating capital flows into and out of India**.

### Who can avail the benefits under this scheme?

- In order to avail the benefit of the LRS, the individual must be an **Indian resident** as defined under the Foreign Exchange Management Act (FEMA). It **cannot be used by corporations, partnership firms, Hindu Undivided Family (HUF), trusts, etc.**
  - *Under FEMA, a person is treated as a resident if he has been in India for more than 182 days in the preceding year.*
- He/she must also have a **valid PAN card, a bank account in India, and a valid passport**.

### Are there any limitations of LRS?

- The maximum amount that can be remitted in a financial year is **USD 2,50,000**. Any amount **exceeding this limit** requires **prior permission from RBI**.

- Remittances under the scheme are **not permitted for certain activities** such as **real estate, the purchase of lottery tickets, margin trading, and speculation in foreign exchange markets.**



# INTERNATIONAL RELATIONS

## 1) INDUS WATER TREATY

### What is the Indus Water Treaty?

- The Indus Water Treaty (IWT) was signed between **India and Pakistan** in **1960**, for the **use of water available in the Indus and its tributaries**.
- It was signed in Karachi by then **Prime Minister Jawaharlal Nehru** and then **Pakistan President Mohammed Ayub Khan** after years of negotiations arranged by the **World Bank**, which is also a signatory.

### Which rivers belong to India and which ones to Pakistan?

- According to the IWT, India enjoys the “**unrestricted use**” of the three **Eastern Rivers (Beas, Ravi, Sutlej)** whereas **Pakistan** got control of the three “**Western Rivers**” (Indus, Chenab, Jhelum).
- In effect, the treaty gave **India about 30% of the water** carried out by the Indus Rivers System while **Pakistan got 70% of the waters**.
- While Pakistan has rights over the waters of Jhelum, Chenab and Indus, the treaty allows India certain **agricultural uses**, and to **build ‘run of the river’ hydropower projects**, meaning projects not requiring live storage of water.



### Permanent Indus Commission

- The treaty also required both countries to create a **Permanent Indus Commission**, a **bilateral commission of officials** from India and Pakistan, created to implement and manage goals of the Indus Waters Treaty.
- The Commission, according to the treaty, **shall meet regularly at least once a year, alternately in India and Pakistan**.

### Dispute Resolution

- The Treaty also sets forth distinct procedures to handle issues which may arise: “questions” are at the **Permanent Commission**; “differences” are to be resolved by a **Neutral Expert**; and “disputes” are to be referred to an ad hoc arbitral tribunal called the “**Court of Arbitration**.”

### Why in News?

- India has served a formal notice to Pakistan seeking review and modification of the Indus Water Treaty (IWT).
- In its notice issued under Article XII (3) of the IWT, India cited the **change in demographics, environmental challenges, and other factors** as the rationale behind asking for a reassessment.
  - *Article XII (3) states: “The provisions of this Treaty may from time to time be modified by a duly ratified treaty concluded for that purpose between the two Governments”.*



- On an international level, the IWT has been seen as one of the most successful cases of conflict resolution.
- It is so because India and Pakistan, ever since IWT was signed, have engaged in 4 major wars but the treaty has stayed in place.

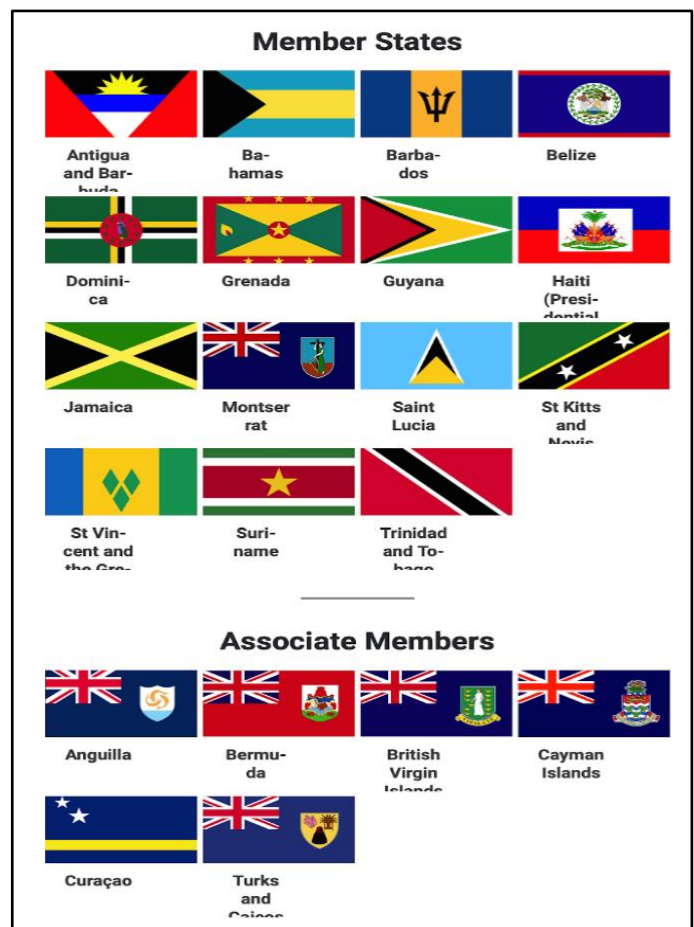
## Disputes

- The treaty **allows India to develop hydroelectric projects on the western rivers** provided they are built on a '**run-of-the-river**' basis **without significantly altering water flow** to the downstream areas in Pakistan.
  - Run-of-the-river projects **use the natural downward water flow** along with microturbine generators to capture kinetic energy while impounding little water and protecting the interests of lower riparian Pakistan.
- However, **Pakistan has tried to obstruct India's Krishnaganga hydroelectric project on the Jhelum and Ratle project on the Chenab** claiming these would impact water flow into their territory.
- Pakistan invoked the dispute resolution mechanisms under the treaty multiple times but a full resolution has not been reached.

## 2) INDIA-CARICOM SUMMIT

### About CARICOM

- The Caribbean Community and Common Market (CARICOM) is a group of **21 developing countries** (15 full-time members and 6 associate members) **in the Caribbean** that encourage common policy and economic goals.
- The CARICOM was formed in **1973** with the signing of the **Treaty of Chaguaramas**.
- The Treaty was later revised in 2002 to allow for the eventual establishment of a **single market and a single economy**.
  - Known as the **Caribbean Single Market and Economy (CSME)**, the single market and economy is meant to integrate all of the member states of CARICOM. It is **still in development**.
- CARICOM enjoys **observer status** at the **United Nations General Assembly**.
- The **Secretariat** is located in **Georgetown, Guyana**.



### Why in News?

- Prime Minister Narendra Modi recently participated in the second India-CARICOM Summit in Guyana.
- Mr. Modi proposed **seven key pillars** to strengthen ties between India and 'CARICOM', focusing on areas such as
  - Capacity Building
  - Agriculture and Food Security
  - Renewable Energy and Climate Change
  - Innovation, Technology and Trade
  - Cricket and Culture
  - Ocean Economy and Maritime Security
  - Medicine and Healthcare.



## 3) INTERNATIONAL COOPERATIVE ALLIANCE

### About ICA

- The International Cooperative Alliance (ICA) is the **global organization that unites, represents, and serves cooperatives around the world.**
- Founded in **1895** in **London, England** during the 1st Cooperative Congress, it is **one of the oldest and largest non-governmental organizations.**
- The ICA serves as the apex body for the cooperative movement, providing a global platform for collaboration, knowledge exchange, and coordinated action.
- ICA has **over 300 member organizations across 105 countries.**
  - Its members include **both international and national cooperative organizations** representing a wide range of economic sectors, such as agriculture, banking, consumer goods, fisheries, health, housing, insurance, and industry & services.



### Why in News?

- The ICA Global Cooperative Conference 2024 was recently held in **New Delhi**. This marked the first time India hosted the conference.
- The theme of the conference is **'Cooperatives Build Prosperity for All'**.

#### Cooperatives in India:

- Cooperatives are **people-centred enterprises** jointly owned and democratically controlled by and for their members to realise their common economic, social and cultural needs and aspirations.
- **India** has over **8 lakh cooperatives**, and **98 per cent of rural areas** are covered by them. About **300 million people** are associated with cooperatives in India.
- In 2021, the **Ministry of Cooperation** was established to strengthen the cooperative sector further.

## 4) INTERNATIONAL CRIMINAL COURT

### About

- The International Criminal Court (ICC) is a **permanent judicial body** established by the **Rome Statute** of the International Criminal Court (1998).
- It is an **independent judicial body distinct from the UN**.
- ICC **investigates and tries individuals** charged with the gravest crimes of concern to the international community: genocide, war crimes, crimes against humanity and the crime of aggression.
- The ICC was established as a **court of last resort** to prosecute the most heinous offenses in cases where national courts fail to act.
- It is headquartered in **The Hague, Netherlands**.

### Jurisdiction:

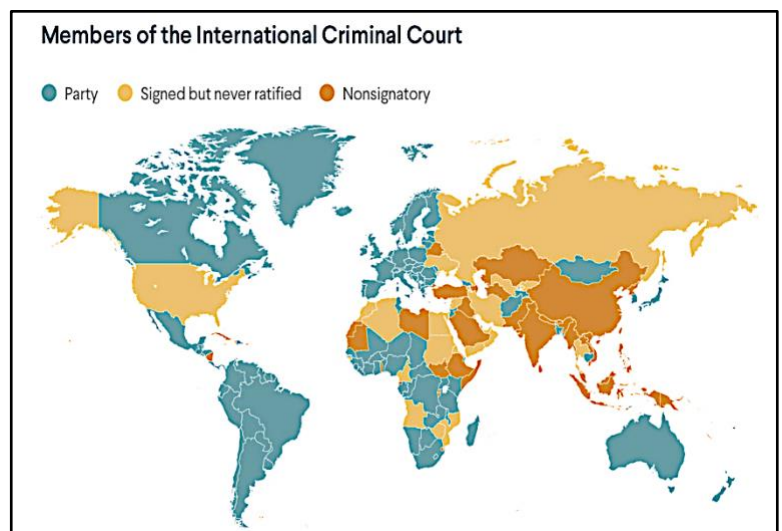
- The Court may exercise jurisdiction in a situation where **genocide, crimes against humanity or war crimes** were committed on or after 1 July 2002 (when Rome Statute entered into force) and:
  - the crimes were committed by a **State Party national, or in the territory of a State Party, or in a State that has accepted the jurisdiction of the Court;** or
  - the crimes were **referred to the ICC Prosecutor by the United Nations Security Council (UNSC)**.

### Membership:

- Only those who ratified (124 countries) the Rome Statute are parties to ICC.
- Prominent countries that are not members include China, **India**, Iraq, Libya, Yemen, Qatar and **Israel**.
- The USA and Russia had signed the treaty but did not ratify it.

### Why in News?

- The International Criminal Court has issued arrest warrants for Israel's prime minister and former defence minister, as well as the military commander of Hamas for alleged war crimes and crimes against humanity during the war between Israel and Hamas.
- The decision's practical implications could be limited since Israel is not a member of the court.



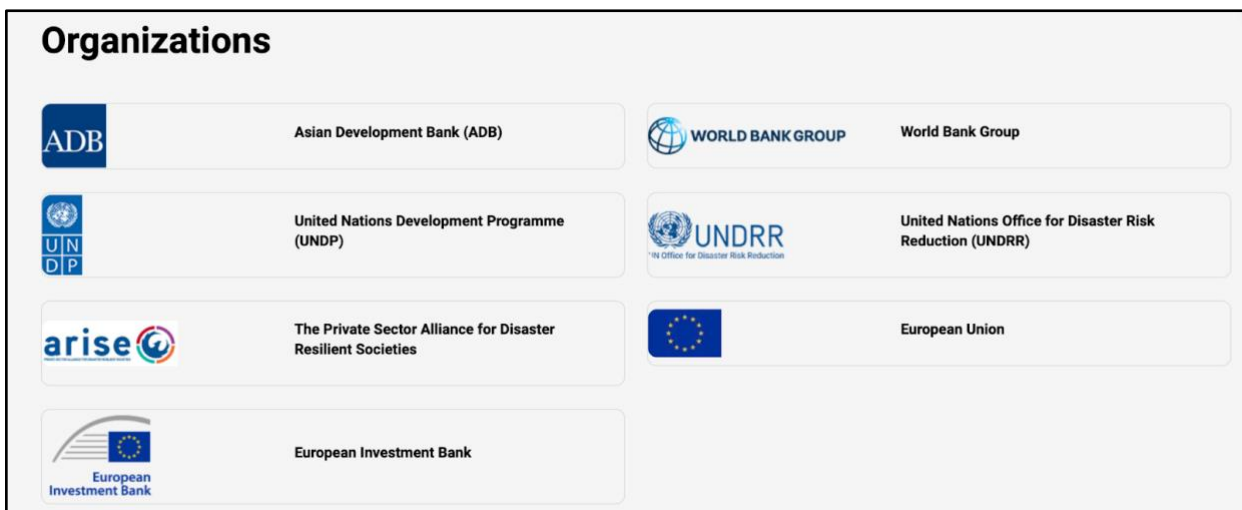
## 5) OTHER NOTABLE TOPICS

### 5.1 COALITION FOR DISASTER RESILIENT INFRASTRUCTURE

#### About CDRI

- The Coalition for Disaster Resilient Infrastructure (CDRI) is an international collaborative platform, aiming to **promote the resilience of infrastructure systems to climate and disaster risks**, thereby ensuring sustainable development.
- Launched in **2019** under the leadership of the **Government of India**, CDRI envisions enabling **measurable reduction in infrastructure losses** from disasters, including extreme climate events.

- CDRI is a **multi-stakeholder global partnership** of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and academic and knowledge institutions.
- At present, it is **not an intergovernmental organization**, which are ordinarily treaty-based organizations.
- CDRI has also created a dedicated initiative “**Infrastructure for Resilient Island States (IRIS)**”, which will work to achieve sustainable development through a systematic approach to promote resilient, sustainable and inclusive infrastructure in **Small Island Developing States (SIDS)**.
- **Members of CDRI:** 40 countries and 7 organisations.



### Governance

- Governance arrangements for CDRI Secretariat comprises **three principal bodies**, viz., the **Governing Council** (highest policy-making body), the **Executive Committee** (managerial body) and the **Secretariat in New Delhi** headed by a Director General appointed by the Governing Council.
- The **Government of India** will be a **permanent Co-Chair** of the Governing Council of CDRI and a **representative of another national government** nominated by rotation **every two years**.

# ORGANISATIONS

## 1) UNRWA

### What is UNRWA?

- UNRWA stands for **UN Relief and Works Agency for Palestinian Refugees in the Near East**.
- It was founded in **1949** by an **U.N. resolution** to **provide aid to about 700,000 Palestinians** who were forced to leave their homes in what is now Israel during the **1948 Arab-Israeli war**.
- The UN agency operates in **Gaza** and the **Israeli-occupied West Bank**, as well as **Lebanon, Syria, and Jordan** — countries where the refugees took shelter after their expulsion.
- UNRWA runs education, health, relief and social services, microfinance and emergency assistance programmes inside and outside refugee camps based in the aforementioned areas.
- Currently, around 5.9 million Palestine refugees — most of them are descendants of original refugees — access the agency's services.
- UNRWA is **funded almost entirely by voluntary contributions** by donor states like the US. It also gets a **limited subsidy from the UN**.
- UNRWA was initially created as a **temporary agency**. However, in the absence of a solution to the Palestine refugee problem, the **General Assembly has repeatedly renewed UNRWA's mandate**.



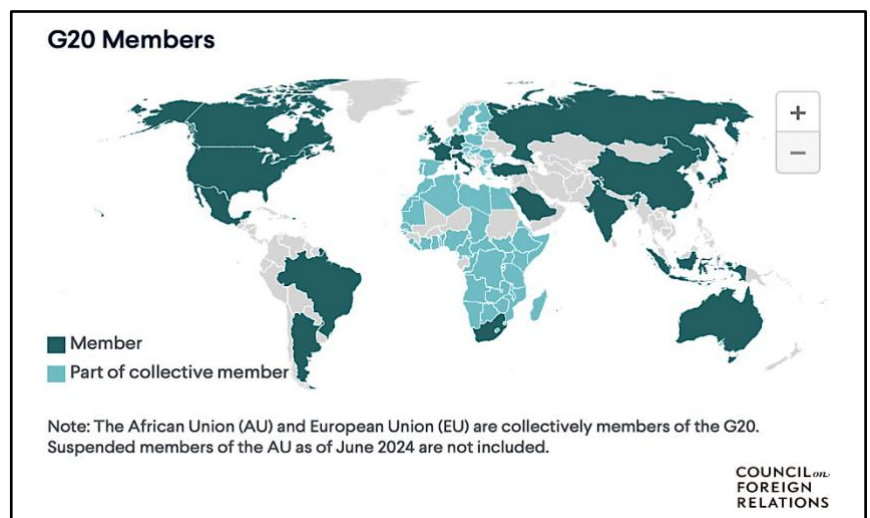
### Why in News?

- India has fulfilled its annual contribution of USD 5 million for the year 2024-25 to UNRWA, with the release of the second tranche of USD 2.5 million.
- This financial support aims to assist the UN agency in providing vital services to Palestinian refugees.

## 2) G-20 SUMMIT

### About G20

- The Group of Twenty (G20) is an **intergovernmental forum** currently consisting of **19 countries and two regional bodies**, aimed at addressing global economic and financial issues.
- The current members are **Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, South Korea, Mexico, Russia, Saudi Arabia,**



South Africa, Turkey, the United Kingdom and the United States, plus the **African Union** and **European Union**.

- The **African Union**, which represents the 55 countries in the African continent, was given **full membership** in the grouping during the G20 Summit held in India in 2023.
- The G20 members represent around **85% of the global GDP, over 75% of the global trade, and about two-thirds of the world population**.

### Genesis of G20

- The G20 was founded in **1999** after the **Asian financial crisis** as a forum for the Finance Ministers and Central Bank Governors to discuss global economic and financial issues.
- It was **upgraded to the level of Heads of State/Government** in the wake of the global economic and financial crisis of 2007, and, in 2009, was designated the “**premier forum for international economic cooperation**”.
- The forum initially dealt with **matters related to macroeconomics**, but over the years, its agenda has **expanded to cover** issues relating to trade, climate change, sustainable development, health, agriculture, energy, environment, climate change, and anti-corruption.

### How does the G20 work?

- The **G20 Summit** is held annually under a **rotating presidency**.
- The **G20 Presidency steers the G20 agenda for one year and hosts the Summit**.
- The G20 consists of **two parallel tracks**: the **Finance Track** and the **Sherpa Track**.
  - Finance Ministers and Central Bank Governors lead the Finance Track while Sherpas (personal representative of the leader of a member country) lead the Sherpa Track.
  - Sherpas oversee negotiations all through the year, discussing agenda items for the summit and coordinating the substantive work of the G20.
- In addition, there are **Engagement Groups** which bring together civil societies, parliamentarians, think tanks, women, youth, labour, businesses and researchers of the G20 countries.
- Each year, the presidency invites **guest countries** to participate in the annual summit. **Spain** is invited as a **permanent guest**.
- G20 **does not have a permanent secretariat**, and the presidency is supported by the previous, current, and future holders of the post, together called the **Troika**.

### Why in News?

- The 19th G20 Summit was recently held in Rio de Janeiro, Brazil, under the presidency of Brazil.
- During the summit, Brazil launched the **Global Alliance Against Hunger and Poverty** to serve as a platform for countries to support each other’s public policies aimed at eradicating hunger and poverty.

## 3) ASIAN INFRASTRUCTURE INVESTMENT BANK

### About AIIB

- The Asian Infrastructure Investment Bank (AIIB) is an international development bank that provides **financing for infrastructure projects in Asia**.
- Headquartered in **Beijing**, it began operations in **2016**.



- It includes more than 100 members worldwide (**India is a founder member of AIIB**).
- AIIB consists of two classes of membership: **regional and non-regional members**.
- **China** is the largest shareholder with 27 per cent voting shares in the bank. **India** is the second largest shareholder with 7.6 per cent voting shares followed by **Russia** 6.0 per cent.
- In 2018, AIIB was granted **Permanent Observer status** in the deliberations of both the **United Nations General Assembly and the Economic and Social Council**, the two development-focused principal organs of the global body.



- The **United States and Japan** are among the prominent countries that are not members of the AIIB.

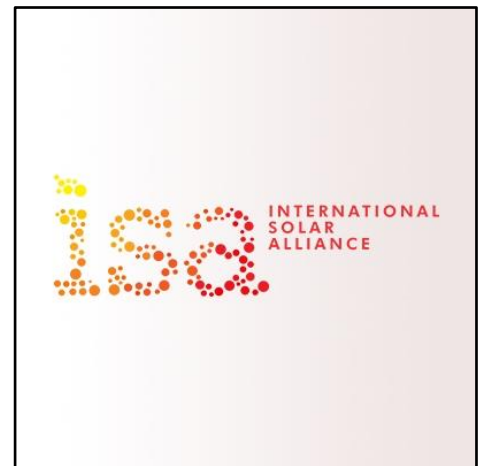
#### Why in News?

- Union Minister for Finance Nirmala Sitharaman recently held a meeting with the Asian Infrastructure Investment Bank (AIIB) delegation in New Delhi.

## 4) INTERNATIONAL SOLAR ALLIANCE

### About ISA

- The International Solar Alliance (ISA) was conceived as a **joint effort by India and France** to mobilize efforts against climate change through deployment of **solar energy solutions**.
- It was conceptualized on the sidelines of the **21st Conference of Parties (COP21)** to the United Nations Framework Convention on Climate Change (UNFCCC) held in **Paris in 2015**.
- The **Paris Declaration** that established the ISA targets **increased deployment of solar energy technologies** as a means for bringing energy access, ensuring energy security, and driving energy transition in its member countries.
- The ISA is headquartered in **Gurugram, Haryana**.



### Membership

- ISA was conceived as a **coalition of solar-resource-rich countries** (which lie either completely or partly between the Tropic of Cancer and the Tropic of Capricorn) to address their special energy needs.
- Later, the **scope of membership was expanded to all member states of the United Nations**.
- Currently, 100+ countries are signatories, with 90+ countries having ratified to become full members.



- With the signing and ratification of the ISA Framework Agreement in 2017, ISA became the **first international intergovernmental organisation to be headquartered in India**.



## Objectives

- The ISA is guided by its ‘Towards 1000’ strategy which aims to **mobilise USD 1,000 billion of investments** in solar energy solutions by 2030, while **delivering energy access to 1,000 million people** using clean energy solutions and resulting in **installation of 1,000 GW** of solar energy capacity.
- This would help **mitigate global solar emissions** to the tune of **1,000 million tonnes of CO2 every year**.

## Why in News?

- The **Seventh Session of the International Solar Alliance (ISA) Assembly** was recently held in New Delhi.
- The Assembly of the ISA is the **apex decision-making body** which deliberates on critical matters like ISA objectives, its functioning, approval of operating budget, etc.
- During the Assembly, **India and France** were elected **President and Co-President** of ISA for the two-year term (2024 to 2026).



- India's installed solar capacity stands at **90 GW**.
- The **National Institute of Solar Energy** estimates India's solar potential at **748 GW**.
- Approximately **46%** of the country's total energy capacity now comes from **non-fossil sources**.

## 5) OTHER NOTABLE TOPICS

### 5.1. INTERNATIONAL ATOMIC ENERGY AGENCY

#### About IAEA

- The International Atomic Energy Agency (IAEA) is the **world's central intergovernmental forum for scientific and technical cooperation in the nuclear field**.
- Widely known as the **world's "Atoms for Peace and Development" organization** within the **United Nations** family, the IAEA works for the **safe, secure and peaceful uses of nuclear science and technology**.
- Established in **1957** as an **autonomous international organization within the United Nations system**, IAEA's relationship with the UN is regulated by a special agreement.
- IAEA won the **Nobel Peace Prize** in 2005.
- Total Membership: 180 (including **India**). Headquarters: **Vienna, Austria**.



IAEA's genesis was the then U.S. President Eisenhower's "Atoms for Peace" address to the General Assembly of the United Nations in 1953.

### 5.2. ENFORCEMENT DIRECTORATE

#### About ED

- Enforcement Directorate (ED) was constituted in **1956** for **handling Exchange Control Laws violations** under the **Foreign Exchange Regulation Act (FERA)**.
- The ED today is a **multi-disciplinary organization** mandated with **investigation of the offence of money laundering and violations of foreign exchange laws**.
- Headquartered at **New Delhi**, the **administrative control** of the Directorate is with the **Department of Revenue, Ministry of Finance**.
- The ED director is appointed as per provisions of the **Central Vigilance Commission Act, 2003**.
  - The Centre appoints the director on **recommendation of a committee**, with the **Central Vigilance Commissioner as chairperson**.

## Statutory Functions

- The statutory functions of the Directorate include **enforcement of following Acts:**
1. **The Prevention of Money Laundering Act, 2002 (PMLA):**
    - It is a criminal law enacted to **prevent money laundering** and to provide for **confiscation of property** derived from, or involved in, money-laundering.
    - ED has been given the **responsibility to enforce the provisions of the PMLA.**
  2. **The Foreign Exchange Management Act, 1999 (FEMA):**
    - It is a civil law to **facilitate external trade and payments** and to promote the **orderly development and maintenance of foreign exchange market in India.**
    - ED has been given the responsibility to conduct **investigation into suspected contraventions** of foreign exchange laws and regulations, to **adjudicate** and **impose penalties** on those adjudged to have contravened the law.
  3. **The Fugitive Economic Offenders Act, 2018 (FEOA):**
    - This law was enacted to **deter economic offenders** from evading the process of Indian law by **remaining outside the jurisdiction of Indian courts.**
    - It is a law whereby ED is mandated to **attach the properties of the fugitive economic offenders** who have escaped from India warranting arrest and provide for the confiscation of their properties to the Central Government.
  4. **Sponsoring agency under COFEPOSA:**
    - The Conservation of Foreign Exchange and Prevention of Smuggling Activities Act, 1974 (COFEPOSA) was enacted to provide for **preventive detention** in certain cases for the purposes of **conservation and augmentation of foreign exchange and prevention of smuggling activities.**
    - Under COFEPOSA, ED is empowered to **sponsor cases of preventive detention** with regard to contraventions of FEMA.



## 5.3. INTERNATIONAL SEABED AUTHORITY

### About ISA

- The International Seabed Authority (ISA) is an **autonomous international organization** established under the **1982 United Nations Convention on the Law of the Sea (UNCLOS).**
- ISA is the organization through which States Parties to UNCLOS **organize and control all mineral-resources-related activities in the international seabed area** for the benefit of humankind as a whole.
  - *The international seabed area is the seabed and ocean floor and the subsoil thereof, beyond the limits of national jurisdiction.*
  - *The international seabed area represents around 50 per cent of the total area of the world's oceans.*
- ISA has the **mandate to ensure the effective protection of the marine environment** from harmful effects that may arise from deep-seabed-related activities.
- ISA, which has its headquarters in **Kingston, Jamaica**, came into existence in **1994**, upon the entry into force of UNCLOS.



- **All States Parties to UNCLOS are *ipso facto* (by the fact itself) members of ISA.** ISA has more than **160 Members** (including **India**).

#### **UNCLOS:**

- The United Nations Convention on the Law of the Sea (UNCLOS), also known as the **Law of the Sea Treaty**, is an international treaty which was adopted and signed in **1982**.
- The Convention was formed to **ensure freedom of shipping navigation at the sea**.
- The Convention has created three new institutions on the international scene :
  - **the International Tribunal for the Law of the Sea,**
  - **the International Seabed Authority,**
  - **the Commission on the Limits of the Continental Shelf.**
- **India** is a party to UNCLOS.
- UNCLOS classifies marine areas into five zones. They are:
  - Territorial sea
  - Contiguous zone
  - Exclusive economic zone
  - Continental shelf
  - High Sea.

## **5.4. NATIONAL FINANCIAL REPORTING AUTHORITY**

### **About NFRA**

- The National Financial Reporting Authority (NFRA) was constituted in **2018** under the **Companies Act, 2013** to continuously **improve the quality of all corporate financial reporting in India**.
- Functions and Duties:
  - **Recommend accounting and auditing policies and standards** to be adopted by companies for approval by the Central Government;
  - **Monitor and enforce compliance** with accounting standards and auditing standards;
  - **Oversee the quality of service of the professions** associated with ensuring compliance with such standards and suggest measures for improvement in the quality of service;
- The Authority consists of a **chairperson and three full time members appointed by the Central Government**.

# SCIENCE & TECHNOLOGY

## 1) NISAR

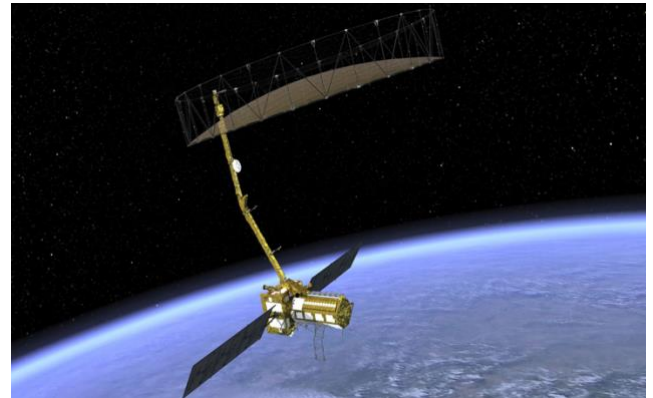
### What is NISAR?

- NISAR (NASA-ISRO Synthetic Aperture Radar) is an **Earth-observation satellite jointly developed by U.S. space agency NASA and ISRO** under a partnership agreement signed in 2014.
- The satellite consists of both L-band and S-band synthetic aperture radar (SAR) instruments, which makes it a **dual-frequency imaging radar satellite**.
- While NASA has provided the L-band radar, GPS, a high-capacity solid-state recorder to store data, and a payload data subsystem, ISRO has provided the S-band radar, the GSLV launch system and spacecraft.
- Another important component of the satellite is its large **39-foot stationary antenna reflector** which will be used to focus the radar signals emitted and received by the upward-facing feed on the instrument structure.

Synthetic Aperture Radar refers to a **technique for producing high-resolution images**. Because of the precision, the radar can penetrate clouds and darkness, which means that it **can collect data day and night in any weather**.

### What is the mission?

- Once launched into space, NISAR will **observe subtle changes in Earth's surfaces**, helping researchers better understand the **causes and consequences** of such phenomena.
- Designed as a **Low Earth Orbit (LEO) observatory**, NISAR will map the entire globe in **12 days** and provide **spatially and temporally consistent data** for understanding changes in Earth's ecosystems.



### Why in News?

- The ambitious NISAR mission is scheduled to be launched in March 2005.

## 2) CHIKUNGUNYA

### About

- Chikungunya is a **mosquito-borne viral disease** caused by the **chikungunya virus (CHIKV)**, an **RNA virus** in the alphavirus genus of the family **Togaviridae**.
- **Transmission:** Chikungunya virus is transmitted by mosquitoes, most commonly **Aedes aegypti** and **Aedes albopictus**, which can also **transmit dengue and Zika viruses**. These mosquitoes **bite primarily during daylight hours**.
- **Symptoms:** Chikungunya virus infection typically begins with a **sudden onset of fever accompanied by severe joint pain**. Other symptoms include joint swelling, muscle pain, headache, fatigue, nausea, and rash.
- **Treatment and vaccines:** There is **no specific antiviral drug** treatment for CHIKV infections. Treatment primarily **focuses on managing symptoms**. There is **no commercial vaccine** available to protect against CHIKV infection.



Chikungunya was first identified in 1952 in Tanzania.

- **Prevention: Reducing mosquito breeding sites** by cleaning water containers is essential, and **insecticides** may be used in outbreaks to control mosquito populations.

#### Why in News?

- Recently, Telangana witnessed a spike in chikungunya cases.

### 3) AIDS

#### About

- **AIDS (Acquired Immunodeficiency Syndrome)** is a life-threatening condition caused by the **Human Immunodeficiency Virus (HIV)**.
- It **weakens the immune system** by destroying cells that fight disease and infection, making the body more vulnerable to infections.
- HIV is **transmitted** through **unprotected sex, contaminated needles, and from mother to child**.
- **Symptoms** of AIDS include swollen lymph nodes, severe weight loss, chronic diarrhea, memory loss, persistent fever, and opportunistic infections like pneumonia or certain cancers.
- While there is **no cure**, **Antiretroviral Therapy (ART)** can control the virus, enabling those infected to live healthy lives.
- **Prevention** methods include safe sex practices, clean needles, and Pre Exposure Prophylaxis for high-risk individuals.

#### Why in News?

- **UNAIDS** has emphasized that India's significant role is crucial for the world to meet the **Sustainable Development Goal (SDG-3.3) of ending AIDS by 2030**.
- **New HIV infections in India fell 44% and AIDS-related deaths fell 80% between 2010 and 2023**, both better than global average, however, 185 Indians were infected each day last year.

#### UNAIDS:

- The **Joint United Nations Programme on HIV/AIDS (UNAIDS)** brings together the efforts and resources of several UN system organizations to **unite the world against AIDS**.
- It is coordinated by the **UNAIDS Secretariat, headquartered in Geneva, Switzerland**.
- Its mission is to lead and inspire the world in **achieving universal access to HIV prevention, treatment, care and support**.
- It has a vision of **zero new HIV infections, zero discrimination and zero AIDS-related deaths, and a principle of leaving no one behind**.

### 4) ANTIMICROBIAL RESISTANCE

#### About

- Antimicrobial resistance, also known as **drug resistance**, is the **resistance acquired by microorganisms** such as **bacteria, viruses, fungi, and parasites** against **antimicrobial drugs** that are used to treat infections.
- When the microorganisms become resistant to most antimicrobials they are often referred to as "**superbugs**".
- The **World Health Organization (WHO)** has declared that **AMR is one of the top 10 global public health threats facing humanity**.

#### Causes of AMR

- AMR occurs **naturally** over time, usually through **genetic changes** in pathogens.
- Its emergence and spread is **accelerated by human activity**, mainly the **misuse and overuse of antimicrobials** to treat, **prevent or control infections in humans, animals and plants**.

- **Lack of proper sanitation, hygiene, and clean water** in healthcare settings and communities facilitates the spread of resistant microorganisms.

### Impact of AMR

- AMR **increases the health burden** of nations leading to higher medical costs, prolonged hospital stays, and increased mortality.
- Organ transplantations, chemotherapy, diabetes management, and surgeries become **more dangerous** without effective antibiotics for treatment of infections.
- The **economic impact** of increasing AMR includes the loss of a productive workforce, leading to lowered national outputs.
- It also **endangers** the achievement of **Sustainable development goals (SDGs)**.

### Global Efforts to combat AMR

- **World Antimicrobial Awareness Week** (18 to 24 November) held annually is a global campaign that aims to increase awareness of antimicrobial resistance worldwide.
- The **Global Antimicrobial Resistance Surveillance System (GLASS)**, under the **WHO**, supports a **standardized approach** to the collection, analysis, and sharing of data related to antimicrobial resistance at a global level to promote informed decision-making.
- In 2019, the WHO launched a new online tool aimed at guiding policy-makers and health workers to use antibiotics safely and more effectively. The tool, known as '**AWaRe**', classifies antibiotics into three groups:
  - **Access** — antibiotics used to treat the most common and serious infections
  - **Watch** — antibiotics available at all times in the healthcare system
  - **Reserve** — antibiotics to be used sparingly or preserved and used only as a last resort.

### National Initiatives

- The **National Action Plan on Antimicrobial Resistance (NAP-AMR)** focusing on '**One Health**' approach was launched in 2017 with the aim of promoting AMR containment.
  - *One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems.*
- The **Union Ministry of Health and Family Welfare** has launched the **Red Line awareness campaign on AMR**, urging people not to use medicines marked with a red vertical line, including antibiotics, without a doctor's prescription.

### Why in News?

- Recent studies indicate that unvaccinated or under-vaccinated children are at higher risk of preventable diseases and often need medical treatment.
- This can lead to unnecessary use of antibiotics, which contributes to the growing problem of antimicrobial resistance.



# POLITY

## 1) SC VERDICT ON AADHAAR

### About Aadhaar

- Aadhaar number is a **12-digit random number issued by the Unique Identification Authority of India (UIDAI)** to the residents of India after satisfying the verification process laid down by the Authority.
- **Any individual, irrespective of age and gender**, who is a resident of India, may voluntarily enrol to obtain Aadhaar number.
  - **Note:** An **Non-Resident Indian (NRI)** with a valid Indian Passport can apply for Aadhaar from any Aadhaar Enrolment Centre. In case of NRIs, the **residential condition is not mandatory**.
- Person willing to enrol has to provide **minimal demographic** (such as Name, Date of Birth, Gender, Address, Mobile Number) and **biometric information** (such as Fingerprints, Iris Scans, Facial Photograph) during the enrolment process which is **free of cost**.
- An individual needs to enrol for Aadhaar only once and after de-duplication **only one Aadhaar shall be generated**.
- Aadhaar number is **devoid of any intelligence** and **does not profile people based on caste, religion, income, health and geography**.
- The Aadhaar number is a **proof of identity**, however, it **does not confer any right of citizenship or domicile** in respect of an Aadhaar number holder.
- Aadhaar enables the Government of India to directly reach residents of the country in **delivery of various subsidies, benefits and services**.
- Aadhaar can be used as a **permanent Financial Address** and facilitates **financial inclusion** of the underprivileged and weaker sections of the society.



- The Aadhaar programme is by far the **largest biometrics based identification system** in the world.

### Baal Aadhaar:

- A **Blue or Baal Aadhaar** card is an **identification document issued to children under five**.
  - It is called blue Aadhaar because of its **blue colour**, instead of the white rectangular card issued to adults.
- It is issued by **UIDAI** and is **linked to one of the parents' Aadhaar cards**.
- Introduced in **2018**, Baal Aadhaar **does not record any biometric information**.
- As with the normal Aadhaar cards issued for adults, the Blue Aadhaar card contains a **12-digit unique identification number** for the child, along with **other relevant information** like the parent's name, permanent address, and other demographic details.
- **On attaining the age of 5**, the child is required to furnish his or her **biometrics** and the child is issued a **normal Aadhaar without any change in the Aadhaar number**.

### Why in News?

- The Supreme Court has ruled that **Aadhaar cards cannot be used as proof of age**, given that other official documents such as the School Leaving Certificate serve the purpose.

## 2) SC DECLARED ACCESSIBILITY A FUNDAMENTAL RIGHT

### Rights of Persons with Disabilities (RPwD) Act, 2016

- Rights of Persons with Disabilities Act, 2016 fulfills the obligations to the **United National Convention on the Rights of Persons with Disabilities (UNCRPD)**, to which **India is a signatory**.

### Disabilities covered

- The types of disabilities have been increased from **existing 7 to 21** and the **Central Government** will have the power to add more types of disabilities.

### Rights and entitlements

- Every child with benchmark disability between the age group of **6 and 18 years** shall have the **right to free education**.
- **All Government institutions of higher education** and those **getting aid** from the Government are required to **reserve at least 5% of seats** for persons with benchmark disabilities.
- **Four percent reservation** for persons with benchmark disabilities is to be provided in **posts of all Government establishments** with differential quotas for different forms of disabilities.
- **Incentives to employers in the private sector** are to be given who provide **5% reservation** for persons with benchmark disability.
- **Special employment exchanges** for the PWD are to be set up.

### Children with disabilities not to be separated from their parents

- No child with disability shall be separated from his or her parents on the grounds of disability except on an order of a competent court, if required, in the best interest of the child.

### Establishment of Authorities

- Broad based **Central & State Advisory Boards on Disability** are to be set up to serve as apex policy making bodies at the Central and State level.
- The **Chief Commissioner for Persons with Disabilities and the State Commissioners** will act as **regulatory bodies** and **Grievance Redressal agencies** and also **monitor** implementation of the Act.

### Penalties for offences

- Any person who violates provisions of the Act, or any rule or regulation made under it, shall be punishable with **imprisonment up to six months and/ or a fine of Rs 10,000, or both**.
- For any **subsequent violation, imprisonment of up to two years and/or a fine of Rs 50,000 to Rs five lakh** can be awarded.
- Whoever intentionally insults or intimidates a person with disability, or sexually exploits a woman or child with disability, shall be punishable with **imprisonment between six months to five years and fine**.
- **Special Courts** will be designated in each district to handle cases concerning violation of rights of PwDs.

### Why in News?

- A bench of the Supreme Court has ordered the Union government to **frame mandatory rules for ensuring the accessibility of public places and services to persons with disabilities**.
- The apex court **reaffirmed accessibility as a fundamental right** and noted that the **provisions of the Rights of Persons with Disabilities (RPwD) Act were not being treated as mandatory**.

## 3) AMU MINORITY STATUS

### What is a Minority Institution?

- A minority institution is an **educational establishment**, such as a college, **founded or maintained by individuals or groups from a minority community**.
- **Article 30(1)** of the Constitution of India gives **linguistic and religious minorities a fundamental right to establish and administer educational institutions** of their choice.
- The educational rights of these communities are safeguarded under the **National Commission for Minority Educational Institutions Act of 2004**.

### Benefits

- Minority educational institutions are granted **administrative autonomy**, including the freedom to choose their governing bodies and other staff members.



- Such institutions **need not reserve seats for Scheduled Castes, Scheduled Tribes, other backward classes (OBC), and economically weaker sections (EWS).**
- A minority institution can **decide admission eligibility and set its own fee structures.**
- However, such institutions **receiving state financial support cannot completely exclude students from non-minority groups.**

#### Rules governing Minority Institutions

- To be designated as a minority institution, the institution must be **established by a religious or linguistic minority group that is numerically in the minority within the state** it is located.
- **Recognition** of this minority status is provided by the **state or union territory authorities.**

#### Why in News?

- A seven-judge bench of the Supreme Court has **overturned its 1967 ruling in the S. Azeez Basha vs Union of India case**, which had **denied minority status to the Aligarh Muslim University (AMU).**
  - In Azeez Basha, a five-judge bench had held that AMU was not a minority institution as it came into existence through an Act of the central legislature (Aligarh Muslim University Act, 1920).
- The latest ruling has declared that an educational institution established by a minority community will not lose its identity once it is recognised through a statute.
- The bench did not reach a conclusion on the minority status of AMU itself, directing that a regular smaller bench will apply the criteria laid out by the seven-judge bench.

#### Aligarh Muslim University:

- Aligarh Muslim University, originally founded as the **Muhammadan Anglo-Oriental College** in **1875** by **Sir Syed Ahmad Khan**, was established in **Aligarh, Uttar Pradesh.**
- Sir Syed Ahmad Khan aimed to create an educational institution that **combined British academic standards with the preservation of Islamic culture.**
- It played a crucial role in the **political discourse** of the time, becoming an influential hub for the Muslim League.

## 4) SUPREME COURT VERDICT ON PRIVATE PROPERTY RIGHTS

### What's in the news?

- A nine-judge Constitution Bench of the Supreme Court has recently held that **not every private resource can be considered a 'material resource of the community'** to be used by the government to serve the 'common good' **under Article 39(b)** of the Constitution.
- The bench also unanimously held that **Article 31C remains in the Constitution.**

### Background

#### Article 39(b) of Constitution

- **Part IV** of the India Constitution, which outlines the **"Directive Principles of State Policy" (DPSP)**, includes **Article 39(b)**, which **mandates the State** to adopt policies ensuring that the **ownership and control of material resources** of the community are **distributed to best serve the common good.**

#### Why was Article 31C introduced?

- In 1971, in a bid to **insulate Emergency-era economic policies from judicial review**, the Parliament introduced a new provision — **Article 31C** through the **25th Amendment.**
- It provided an **exception that laws made to fulfil the principles under Articles 39(b) and (c)**

**Clauses (b) and (c) of Article 39** respectively urged the state to **frame laws to secure the material resources of the community** and to establish an economic system that **prevents the concentration of wealth.**

**cannot be declared void for being inconsistent with Articles 14 (right to equality) and 19 (freedom of speech and expression).**

- In the seminal **Kesavananda Bharati case (1973)**, a 13-judge Bench of the Supreme Court **upheld the validity of Article 31C but made it subject to judicial review.**

**What was the amendment that followed?**

- Despite this, in **1976**, Parliament introduced **even more sweeping changes to Article 31C** through the **42nd Amendment**.
- They stipulated that a **law made in furtherance of any DPSP** — and not limited to those under Articles 39(b) and (c) — would **enjoy immunity against a constitutional challenge.**
- In **1980**, the **Supreme Court**, in **Minerva Mills v. Union of India**, **struck down the amendment, reinforcing the primacy of fundamental rights over DPSPs.**

**What is the current situation?**

- In 2024, the question before the SC was whether the SC between 1978-1980 **struck down Article 31C as a whole**, or did it **restore the post-Kesavananda Bharati position** wherein **Articles 39(b) and (c) remained protected.**
- In the latest ruling, the SC has said that the **post-Kesavananda position is restored.**

**Interpretation of Article 39(b) of the Constitution**

- The second question before the Court was **whether the government can acquire and redistribute privately owned properties** if they are deemed as “**material resources of the community**” — as mentioned in **Article 39(b)** of the Constitution.
- The majority opinion has taken the view that **not every property owned by an individual can be a ‘material resource of community’.**
- The court noted that **any acquisition of private property for public use must adhere to constitutional guarantees**, including **Articles 14 and 300A** (right to property).

## **5) DIGITAL PERSONAL DATA PROTECTION ACT, 2023**

**About**

- The Digital Personal Data Protection Act, 2023 (DPDP Act) was enacted in 2023 for **regulating the collection, storage, use and processing of personal data.**

**Highlights of the Act**

**Applicability:**

- The Act applies to the **processing of digital personal data within India** where such data is:
  - collected online, or
  - collected offline and is digitised.
- It will also apply to the **processing of personal data outside India if it is for offering goods or services in India.**
- **Personal data** is defined as **any data about an individual** who is **identifiable** by or in relation to such data.
- **Processing** has been defined as wholly or partially automated operation or set of operations performed on digital personal data. It includes collection, storage, use, and sharing.

**Consent:**

- **Personal data may be processed only for a lawful purpose** after obtaining the **consent** of the individual.
- Consent may be **withdrawn at any point in time.**
- **Consent will not be required for ‘legitimate uses’** including:
  - specified purpose for which data has been provided by an individual voluntarily,
  - provision of benefit or service by the government,
  - medical emergency, and
  - employment.

- For individuals **below 18 years of age**, consent will be provided by the **parent or the legal guardian**.

#### **Rights and duties of data principal:**

- An individual whose data is being processed (**data principal**), will have the **right** to:
  - obtain information about processing,
  - seek correction and **erasure of personal data**,
  - nominate another person to exercise rights in the event of death or incapacity, and
  - grievance redressal.
- Data principals will have certain **duties**.
- They must not:
  - register a false or frivolous complaint, and
  - furnish any false particulars or impersonate another person in specified cases.
- Violation of duties will be punishable with a penalty of up to Rs 10,000.

#### **Obligations of data fiduciaries:**

- The **data fiduciary** (persons, companies and government entities who process data), must:
  - make reasonable efforts to ensure the accuracy and completeness of data,
  - build reasonable security safeguards to prevent a data breach,
  - inform the Data Protection Board of India and affected persons in the event of a breach, and
  - **erase personal data** as soon as the purpose has been met and retention is not necessary for legal purposes (**storage limitation**).
- In case of **government entities, storage limitation and the right of the data principal to erasure will not apply**.

#### **Transfer of personal data outside India:**

- The Act **allows transfer of personal data outside India, except to countries restricted by the central government** through notification.

#### **Exemptions:**

- Rights of the data principal and obligations of data fiduciaries (**except data security**) **will not apply in specified cases**.
- These include:
  - prevention and investigation of offences, and
  - enforcement of legal rights or claims.
- The **central government** may, by notification, **exempt certain activities** from the application of the Act. These include:
  - processing by government entities in the interest of the security of the state and public order, and
  - research, archiving, or statistical purposes.

#### **Data Protection Board of India:**

- The central government will establish the Data Protection Board of India.
- Key functions of the Board include:
  - monitoring compliance and imposing penalties,
  - directing data fiduciaries to take necessary measures in the event of a data breach, and
  - hearing grievances made by affected persons.
- Board members will be appointed for **two years** and will be **eligible for re-appointment**.
- The **central government** will prescribe details such as the number of members of the Board and the selection process.
- **Appeals** against the decisions of the Board will lie with **Telecommunications Dispute Settlement and Appellate Tribunal (TDSAT)**.
  - TDSAT was established in 2000 as a **statutory body** to adjudicate disputes and dispose of appeals to protect the interests of service providers and consumers of the **telecom sector**.

- At present, the Tribunal exercises jurisdiction over **Telecom, Broadcasting, IT and Airport tariff matters** under the TRAI Act, 1997, the Information Technology Act, 2008 and the Airport Economic Regulatory Authority of India Act, 2008.
- The Tribunal consists of a **Chairperson** and **two Members** appointed by the **Central Government**. The Chairperson should be or should have been a **Judge of the Supreme Court or the Chief Justice of a High Court**.

#### Penalties:

- The Act specifies penalties for various offences such as up to: (i) Rs 200 crore for non-fulfilment of obligations for children, and (ii) Rs 250 crore for failure to take security measures to prevent data breaches.
- Penalties will be imposed by the **Board** after conducting an inquiry.

#### Key Issues and Analysis

- Exemptions to data processing by the State on grounds such as national security may lead to **data collection, processing, and retention beyond what is necessary**. This may violate the **fundamental right to privacy**.
- The Act **does not regulate risks of harms arising from processing of personal data**.
- The Act allows **transfer of personal data outside India**, except to countries notified by the central government. This mechanism **may not ensure adequate evaluation of data protection standards** in the countries where transfer of personal data is allowed.
- The members of the Data Protection Board of India will be appointed for **two years** and will be eligible for re-appointment. The **short term with scope for re-appointment may affect the independent functioning of the Board**.

#### Why in News?

- Minister of Electronics and Information Technology Ashwini Vaishnaw said that the rules for the Digital Personal Data Protection Act, 2023, will be released soon.

## 6) ARMED FORCES SPECIAL POWERS ACT

### About AFSPA

- Passed in 1958 for the North-East and in 1990 for Jammu & Kashmir, the **Armed Forces Special Powers Act (AFSPA) gives armed forces special powers to control “disturbed areas”**.
  - “Disturbed areas” are areas **designated by the government** when it is of the opinion that a region is in such a **disturbed or dangerous condition** that the **use of armed forces** in aid of civil power is necessary.
- The Act in its original form was **promulgated by the British in response to the Quit India movement in 1942**.
- After Independence, the Government decided to retain the Act, which was first brought in as an ordinance and then notified as an Act in 1958.
- The **Central Government**, or the **Governor of the State** or **administrator of the Union Territory** can declare the whole or part of the State or Union Territory as a disturbed area.
- Under its provisions, the armed forces have been **empowered to open fire, enter and search without warrant, and arrest any person** who has committed a cognisable offence, all while having immunity from being prosecuted.
- The law has been **repealed** where insurgencies have subsided, and when governments have gained confidence in managing the region using the police force.

### Are there safety nets?

- While the Act gives powers to security forces to open fire, this **cannot be done without prior warning** given to the suspect.
- The Act further says that any suspects apprehended by security forces should be **handed over to the local police station within 24 hours**.

- It says **armed forces must act in cooperation with the district administration and not as an independent body.**

### Criticisms

- Critics both in India and abroad have criticised government agencies for acting with impunity under AFSPA.
- **Manipuri activist Irom Sharmila** had been on a 16-year hunger strike in protest against AFSPA.
- The **Jeevan Reddy Committee** formed in 2004 recommended a complete repeal of the law.

### Why in News?

- The Union Ministry of Home Affairs has reimposed AFSPA in several districts of Manipur, in the wake of the ongoing ethnic violence in the State.

AFSPA now remains in force in **parts of Assam, Manipur, Nagaland and Arunachal Pradesh as well as in Jammu & Kashmir.**

## 7) OTHER NOTABLE TOPICS

### 7.1 NATIONAL FOOD SECURITY ACT

#### About NFSA

- The National Food Security Act, 2013 (NFSA) provides for **food and nutritional security** in the country, by ensuring access to adequate quantities of quality food at affordable prices.
- The Act enacted in **2013** marks a paradigm shift in the approach to food security from **welfare to rights based approach.**
- The Act is in line with **Goal Two of the Sustainable Development Goals** (which seeks sustainable solutions to end hunger in all its forms by 2030 and to achieve food security) set by the United Nations General Assembly.
- The implementation of the scheme comes under the ambit of the **Ministry of Consumer Affairs, Food and Public Distribution.**

#### Key Features

- The Act legally entitled up to **75% of the rural population and 50% of the urban population** to receive subsidized foodgrains under the **Targeted Public Distribution System (TPDS).**
- The eligible persons (**Primary Households**) are **entitled to receive 5 Kgs of foodgrains per person per month at subsidised prices of Rs. 3/2/1 per Kg for rice/wheat/coarse grains.**
- The **Antyodaya Anna Yojana (AAY) households**, which constitute the poorest of the poor, receive **35 Kgs of foodgrains per household per month.**
- About **two-thirds of the population**, therefore, is covered under the Act to receive highly subsidized foodgrains.
- One of the guiding principles of the Act is its **life-cycle approach** wherein special provisions have been made on the **nutritional support to women and children.**
- **Pregnant women and lactating mothers** will be entitled to meals and **maternity benefits of not less than Rs 6000.**
- **Children upto 14 years of age** will be entitled to **nutritious meals** as per the prescribed nutritional standards. In case of non-supply of entitled foodgrains or meals, the beneficiaries will receive **food security allowance.**
- The **eldest women of the household** of age 18 years or above will be the head of the household for the purpose of issuing ration cards.

#### Beneficiaries

- Corresponding to the all India coverage of 75% and 50% in the rural and urban areas, **State-wise coverage** under NFSA was determined by the **erstwhile Planning Commission** (now NITI Aayog).

- Within the coverage determined for each State, the **work of identification of eligible households** is to be done by **States/UTs**.

### **Implementation**

- It is operated under the **joint responsibility of the Central and the State/Union Territory (UT) Governments**.
  - The Central Government is responsible for procurement, allocation and transportation of food grains up to the designated depots of the Food Corporation of India.
  - States/UTs hold the operational responsibilities for allocation and distribution of food grains.
- The NFSA currently covers **81 crore people** which was determined on the basis of the **2011 census**, and has not been revised since the law was passed in 2013.

## **7.2 ARTICLE 142**

### **About**

- Article 142 of the Indian constitution **empowers the Supreme Court** to pass **any decree or order necessary for doing complete justice** in any case or matter pending before it.
- It also makes such decree or order **enforceable throughout the territory of India**.

### **Significance**

- Article 142 gives the Supreme Court a unique power to **transcend the limitations of law or statute** in order to ensure justice for the parties involved.
- It enables the Supreme Court to exercise **executive and legislative functions in certain situations**, such as issuing guidelines, directions, or orders to the government or other authorities.
- It allows the Supreme Court to **intervene in matters of public interest, human rights, constitutional values, or fundamental rights**, and to protect them from any violation or infringement.
- It enhances the Supreme Court's role as the **guardian of the constitution and the final arbiter of the law**, and as a **source of judicial activism and innovation**.

## ART & CULTURE

### 1) ST. FRANCIS XAVIER

#### About

- Saint Francis Xavier, also referred to as “**Goencho Saib**” (Lord of Goa), was a **Spanish Jesuit missionary**.
- He was a **founding member of the Jesuit order**—the **Society of Jesus**.
- He arrived in **Goa** — then a **Portuguese colony** — in 1542.
- His primary mission, as ordered by **King John III** of Portugal, was to **restore Christianity among the Portuguese settlers**.
- He **died in 1552 on Shangchuan island off China’s coast**. He was first buried on the island. Later, his body was exhumed and transported to **Malacca** and **finally to Goa**.
- At present, the **Basilica of Bom Jesus** in Goa holds the **mortal remains of St Francis Xavier**.
- The **Feast of St. Francis Xavier** is celebrated in Goa, on **December 3rd each year** to commemorate the death anniversary of the patron saint.

#### Why in News?

- The decennial exposition of the sacred relics of Saint Francis Xavier has recently begun.
- During the exposition, the relics are carried in a ceremonial procession for the devotees to venerate.

## REPORTS & INDICES

### 1) STATE OF THE WORLD'S CHILDREN 2024 REPORT

#### What's in the news?

- UNICEF has published its State of the World's Children 2024 (SOWC-2024) report.
- The report examines the **impact of three long-term global forces — demographic shifts, climate and environmental crises, and frontier technologies** — that will profoundly affect children's lives between now and 2050 and beyond.

#### Highlights of the Report

- The report projects **significant population changes**, with **Sub-Saharan Africa and South Asia** hosting the largest child populations by the 2050s.
- These demographic shifts create challenges, with some countries **under pressure to expand services for large child populations**, while others **balance the needs of a growing elderly population**.
- Children will face **eight times more exposure to extreme heatwaves** and **triple the risk of extreme river floods** compared to the 2000s.
- **Climate-related disasters** can cause feelings of helplessness, trauma and anxiety in children.
- On the frontier technologies front, the report notes that **artificial intelligence (AI), neurotechnology, next-generation renewable energy and vaccine breakthroughs** – could **significantly improve childhood in the future**.
- The report cautions that **digitalization can empower children but it can also expose children to online risks**, including sexual exploitation and abuse.

#### UNICEF:

- The United Nations Children's Fund (UNICEF), originally known as the United Nations International Children's Emergency Fund, was created by the **United Nations General Assembly** in 1946.
- It was created to provide **emergency food and healthcare to children and mothers in countries that had been devastated by World War II**.
- In 1950, UNICEF's **mandate was extended to address the long-term needs of children and women in developing countries everywhere**.
- In 1953, it became a **permanent part of the United Nations System**.

### 2) STATE OF FOOD AND AGRICULTURE REPORT 2024

#### What's in the news?

- The **Food and Agriculture organization (FAO)** has recently released its State of Food and Agriculture Report 2024.

#### Highlights of the Report

- The report has identified that **India's total hidden costs of agrifood systems were around \$1.3 trillion annually**, largely driven by unhealthy dietary patterns and dietary risks associated with non-communicable diseases (NCD).
  - The hidden costs of agrifood systems refers to **any cost** to an individual or society that is **not reflected in the market price of a product or a service**.
  - It refers to hidden environmental, social and health costs caused by the **negative impacts of food and farming**.
- India's hidden costs were **third largest in the world**, after China and the United States.
- **High consumption of processed foods and additives** and **low consumption of plant whole foods and beneficial fatty acids** form **over 73 per cent** of the total hidden costs of agrifood systems in India.



- The dietary patterns are **linked to alarming NCDs**, such as heart disease, stroke and diabetes.
- **Environmental costs** like emission of greenhouse gasses (GHG), fertilizer production, nitrogen runoff and leaching have also contributed to hidden costs in Agri food systems.

#### Recommendations

- The Report calls for **financial and regulatory incentives** to advance the adoption of sustainable practices along the food supply chain.
- It also recommends **promoting healthier diets** by enacting policies that make **nutritious food more affordable and accessible** to reduce health related hidden costs.

#### FAO:

- The Food and Agriculture Organization (FAO) is a **specialized agency of the United Nations** leading international efforts to **defeat hunger**.
- It is an **intergovernmental organization**, established in **1945**, with more than 190 member countries (including **India**) and one member organization, the **European Union**.
- FAO's goal is to achieve **food and security for all** and make sure that people have regular access to enough high-quality food and lead active, healthy lives.

### 3) WORLD SOLAR REPORT 2024

#### What's in the news?

- The **International Solar Alliance (ISA)** has recently published the **3rd edition of the World Solar Report series**.
- First introduced in **2022**, this report series provides a concise and comprehensive overview of global progress in solar technology, key challenges, and investment trends in the sector.
- The latest edition includes **4 reports** namely **World Solar Market Report, World Investment Report, World Technology Report**, and **Green Hydrogen Readiness Assessment for African Countries** each highlight a crucial area in the global shift towards sustainable energy.

#### Highlights of the Series

- The **World Solar Market Report** reveals exceptional solar growth, with **global capacity** soaring from 1 GW in 2000 to **1,419 GW** in 2023. Solar jobs have surged to 7.1 million, and global capacity may reach 7,200 GW by 2030.
- The **World Investment Report** highlights a global shift toward sustainable energy. **Solar leads renewable energy investments**, accounting for 59% of the total.
- The **World Technology Report's** highlights include record-setting 25% efficiency in solar PV modules, an 88% reduction in silicon usage since 2004, and a 90% drop in utility-scale solar PV costs, etc.
- **Readiness Assessment of Green Hydrogen African Countries** highlights green hydrogen's potential to decarbonise industries heavily reliant on fossil fuels, such as steel and fertilizer production.

#### Global Market Scenario

- As of 2023, **China** dominates the solar photovoltaic (PV) sector as **43% of the cumulative capacity of solar panels installed** globally is from China.
- **The U.S.** contributes 10%. **Japan, Germany, and India** each captured a 5-6% share.
- **China** maintained the **highest share in component manufacturing** in 2023, with 97% in wafers, 89% in cells, and 83% in module installation capacity.

# DEFENCE

## 1) INDIA'S FIRST LONG-RANGE HYPERSONIC MISSILE TEST

### What Are Hypersonic Missiles?

- Hypersonic missiles are **advanced weapons capable of speeds greater than Mach 5**—five times the speed of sound.
  - *The speed of sound is Mach 1, and speeds above Mach and Mach 5 are **supersonic** and speeds above Mach 5 are **hypersonic**.*
- **Two primary types** of hypersonic weapons include:
  - **Hypersonic Glide Vehicles (HGVs):** These are **launched on rockets** and **glide to their targets**, using aerodynamic lift for maneuverability.
  - **Hypersonic Cruise Missiles (HCMs):** Powered by **air-breathing scramjet engines**, these missiles **sustain hypersonic speeds throughout their flight**.
- The **key advantage** of hypersonic missiles lies in their ability to **evade conventional missile defence systems**.
- Unlike **ballistic missiles**, which **follow a fixed parabolic trajectory**, **hypersonic missiles can alter their course**, making them significantly harder to detect and intercept.

### What's in the news?

- The Defence Research and Development Organisation (DRDO) has successfully conducted the **flight trial of India's first long-range hypersonic missile** from Dr. A.P.J. Abdul Kalam Island, off the coast of Odisha.
- The hypersonic missile was designed to **carry various payloads for ranges greater than 1,500 km**, making it a critical addition to India's defence arsenal.
- This missile was **indigenously developed** by the laboratories of Dr. A.P.J. Abdul Kalam Missile Complex, Hyderabad, along with various other DRDO laboratories and industry partners.



### Significance

- Globally, countries like **the US, Russia, and China** are leading in hypersonic missile development.
- By mastering hypersonic technology, India has not only **enhanced its strategic deterrence capabilities** but also **strengthened its position in the global defence landscape**.
- For nuclear-armed nations, hypersonic missiles offer an **additional layer of security** by ensuring that their **nuclear weapons remain viable even in the face of advanced defense systems**.
- The ability of these missiles to change course mid-flight and fly at extreme speeds makes them a **strategic asset that could potentially overwhelm or avoid interception**.

## 2) PINAKA ROCKET SYSTEM

### About

- The Pinaka rocket system is a **multi-barrel rocket launcher system developed indigenously** by the **Defence Research and Development Organisation (DRDO)**.

- It was **first deployed** during the **1999 Kargil War**.
- The system is capable of **striking targets up to 75 kilometers** and has **multiple variants**, making it a versatile and powerful tool for modern artillery operations.
- Its success has already extended beyond India's borders, with countries like **Armenia** placing orders, and many others expressing interest in acquiring the system.



#### Why in News?

- DRDO has announced the successful completion of flight tests of the guided Pinaka multi-barrel rocket (MBRL) system.
  - A guided system means that the rockets have seekers, which are used for precision strikes. The earlier version was not guided.

## MISCELLANEOUS

### 1) SENDAI FRAMEWORK

#### About

- The **Sendai Framework for Disaster Risk Reduction** is a **15-year (2015-2030), voluntary, non-binding agreement to reduce, prevent and respond to disaster risks across the globe.**
- It aims to **strengthen social and economic resilience to disasters** caused by natural, biological and technological hazards, and which are further exacerbated by climate extremes.
- The Framework recognizes that the **State has the primary role to reduce disaster risk**, but that **responsibility should be shared with other stakeholders** including local governments, the private sector, the scientific community and NGOs.
- It lists **four priority areas for action:**
  - understanding disaster risk,
  - strengthening disaster risk governance to manage disaster risk,
  - investing in disaster risk reduction for resilience and
  - enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.
- The Framework was adopted at the **Third UN World Conference on Disaster Risk Reduction** in Sendai, Japan, in 2015.
- The Sendai Framework is the **successor instrument** to the **Hyogo Framework for Action (HFA) 2005-2015.**
- **India** is a signatory to the agreement.

## PLACES IN NEWS

### 1) HORN OF AFRICA

#### About

- The Horn of Africa is a **peninsula of East Africa** that includes countries of **Djibouti, Ethiopia, Eritrea and Somalia**. **Sudan and Kenya** are sometimes included as well.
- It is one of the world's most **conflict-prone and fragile regions**.
- The region's countries are the countries of origin and host countries for a great number of **refugees and internally displaced persons**.

#### Why in News?

- A recent report released by the UN has warned that at least 65 million people are **food insecure** in the Horn of Africa.
- The report said, **extreme weather and climate change**, now more severe and frequent, are the primary drivers of food insecurity.



- The **Bab el Mandeb strait** separates the Horn of Africa from the southern tip of the Arabian Peninsula.

### 2) SVALBARD GLOBAL SEED VAULT

#### About the Vault

- The Svalbard Global Seed Bank is located in **Svalbard in a Norwegian archipelago** (*an area of ocean containing many islands*) in the **Arctic Ocean**.
- The vault was launched in **2008** as a **backup for the world's national and regional gene banks** that store the genetic code for thousands of plant species.
- Dubbed the "**doomsday**" vault, the objective of the Seed Vault is to **safeguard as much of the world's unique crop genetic material as possible**.



- Svalbard also serves as a **backup for plant breeders to develop new crop varieties** more resistant to climate change.

### Why in News?

- The Svalbard Seed Vault has recently received a significant influx of seed samples from around the world.

## 3) TAJIKISTAN

### About

- It is a **landlocked country** lying in the heart of **Central Asia**.
- **Capital: Dushanbe**
- It is bordered by:
  - **Kyrgyzstan** on the north,
  - **China** on the east,
  - **Afghanistan** on the south, and
  - **Uzbekistan** on the west and northwest.
- **Major Glaciers in Tajikistan:**
  - **Fedchenko Glacier:** It is the **world's largest glacier outside of the polar regions**, and covers 900 square kilometers.
  - Other glaciers include **Garmo glacier, Bivachni glacier, Fortambek glacier** etc.,



### Why in News?

- Out of 14,000 glaciers in Tajikistan, more than 1,000 glaciers have disappeared in the last three decades.
- These glaciers across are crucial to the region's food and water security, typically draining fresh water into rivers to replenish them during arid periods.

## 4) OTHER NOTABLE TOPICS

### 4.1 BURKINA FASO

#### About

- **Location:** It is a **landlocked country** in **western Africa**.
- **Capital: Ouagadougou**
- It is bounded by
  - **Mali** to the north and west,
  - **Niger** to the northeast,
  - **Benin** to the southeast, and
  - **Cote d'Ivoire, Ghana, and Togo** to the south.



## KEY TAKEAWAYS FROM OTHER ARTICLES

### 1) EXERCISE AUSTRAHIND

#### News:

- The 3rd edition of the joint military exercise between **India and Australia**, **Exercise AUSTRAHIND**, was recently conducted in Maharashtra.
- It is an annual event **conducted alternatively in India and Australia**.

### 2) EXERCISE SANYUKT VIMOCHAN

#### News:

- The **Indian Army** recently conducted the **Multilateral Annual Joint Humanitarian Assistance and Disaster Relief (HADR) Exercise, 'Sanyukt Vimochan 2024'** in Gujarat.
- The event highlighted the collaborative efforts of the Indian Army, Indian Navy, Indian Airforce, Indian Coast Guard, National Disaster Response Force, State Disaster Response Force & other Central & State Agencies in addressing natural disasters.

### 3) EXERCISE AGNI WARRIOR

#### News:

- The **Joint Military Exercise Agni Warrior 2024** between **Indian Armed Forces and Singapore Armed Forces** was recently held in Maharashtra.

### 4) MODI RECEIVES NIGERIA'S SECOND-HIGHEST NATIONAL AWARD

#### News:

- Nigeria has conferred its **second-highest national award, the Grand Commander of the Order of the Niger, on Prime Minister Narendra Modi**, making him the **second foreign dignitary** to receive the prestigious award.
- **Queen Elizabeth** was the first foreign recipient of the GCON in 1969.

### 5) EXERCISE GARUD SHAKTI 24

#### News:

- The Indian Army recently participated in Exercise GARUD SHAKTI 24 held in Jakarta, Indonesia.
- Exercise GARUD SHAKTI 24 is a **Bilateral Special Forces Exercise between India-Indonesia**.

### 6) SUPREME COURT RULING ON SOCIALISM, SECULARISM

#### News:

- A Division Bench of the Supreme Court dismissed pleas challenging the inclusion of the words 'socialist' and 'secular' in the Preamble to our Constitution.
- **The original Preamble adopted on November 26, 1949, declared India a sovereign, democratic, republic.**
- **The 42nd Constitutional Amendment in 1976 inserted the words 'Socialist', 'Secular' and 'Integrity' in the Preamble.**
- The court held that 'socialism' and 'secularism' are **integral to the basic structure of the Constitution**.
- It also observed that the Constitution is a **'living document' subject to the amendment power of Parliament**.

## 7) GAVI ALLIANCE

### About

- Created in **2000**, the GAVI Alliance (Global Alliance for Vaccines and Immunisation) is a **global health partnership of public and private sector organizations** dedicated towards creating **equal access to new and underused vaccines for children** living in the world's poorest countries.
- GAVI aims at **accelerating access to vaccines, strengthening countries' health and immunization systems, and introducing innovative new immunization technology.**

## 8) ONE HEALTH APPROACH

### About

- One Health is an **integrated, unifying approach** that aims to **sustainably balance and optimize the health of people, animals and ecosystems.**
- It recognizes that the **health of humans, domestic and wild animals, plants, and the wider environment** are **closely linked and interdependent.**
- The One Health approach is particularly relevant for food and water safety, nutrition, the **control of zoonoses** (diseases that can spread between animals and humans), pollution management, and combating antimicrobial resistance.

## 9) BACTERIAL COMPUTING

### About

- Bacterial computing is a **conceptual subset of synthetic biology** that **uses bacteria to solve problems** that are typically solved by computers.
- The fusion of biology and computer science has resulted in the development of **living cell-based biocomputers** to solve computational problems.
- Here, **living cells are engineered** to use as circuits and components to build biocomputers.
- Bacterial computing has the potential to **offer solutions to computational challenges at a microscale.**

## 10) PANDEMIC PREPAREDNESS AND RESPONSE INITIATIVE

### News:

- The **Ministry of Fisheries, Animal Husbandry and Dairying** has launched a new initiative titled '**Animal Health Security Strengthening in India for Pandemic Preparedness and Response**'.
- The project aims to **enhance the country's capacity to prevent, detect, and respond to animal health threats.**
- It will be executed with the help of 3 implementing agencies namely, the **Asian Development Bank, the World Bank, and the Food and Agriculture Organization.**
- The project was approved by the **Pandemic Fund**, created by **G20 countries** under Indonesian presidency in 2022.
  - The Pandemic Fund is the **first multilateral financing mechanism** dedicated to **finance critical investments** to strengthen **pandemic prevention, preparedness, and response capacities**, focusing on **low- and middle-income countries.**

## 11) CHATTOGRAM PORT

### About

- Chattogram is the principal sea port of **Bangladesh** and handles over 90% of the country's foreign trade.



- It is located in the estuary of the **Karnaphuli River** which flows into the Bay of Bengal.
- **India** was given **permanent access** to Chattogram port (and **Mongla port** in Bangladesh) for transit and trans-shipment of cargo vessels in 2023.