

**YOJANA SUMMARY**

**YEAR END SPECIAL**

**DECEMBER 2023**

- The Indian space programme was developed for scientific research and applications in the mid- 1960s.
- Since then, ISRO made its mark on the international space arena as one of the top 5 space agencies with full capabilities in Earth observation, communication, navigation, and planetary exploration.

### Transportation System

- ISRO can now launch payloads ranging from 500 kg to 8000 kg into low, medium, or high Earth orbit using its four operational launch vehicles.
- **PSLV**, ISRO's workhorse, offers exceptionally reliable and cost-effective solutions for commercial users worldwide to launch payloads in the **2t class**.
  - The turnaround time is excellent, and it can be set up in a number of ways to meet the needs of individual clients.
  - PSLV's growing popularity can be attributed to its versatility; the rocket can **launch many satellites in a single flight**, its upper-stage liquid engines can be started and stopped, it can inject orbits into a variety of different geostationary orbits, and it can host research on its PS4 orbital platform.
- Incredibly complex missions, like as Chandrayaan and the OneWeb commercial launches, were successfully completed by **LVM3 (Launch Vehicle Mark-3)**, made-in-India launch vehicle.
  - It is another excellent choice for the worldwide commercial markets for both LEO and GEO payloads with capacities of 4t and 6t, respectively.
- The newly inducted **Small Satellite Launch Vehicle (SSLV)** satisfies the requirements of the small satellite launch vehicle market.

### Ground System

- All Earth observation, communication navigation, and scientific satellites are monitored around-the-clock by the master control facility and the tracking and telemetry facility.
- ISRO is now going into the new arena of **Space Situational Awareness (SSA)** that involves a comprehensive understanding and knowledge of the space environment.
- This includes location, and behaviour of space objects such as satellite, debris, and other celestial bodies and their future evolution.

### Important Facilities

- Some of the important facilities are: Trisonic wind tunnel, high-altitude test facilities, semi-cryo testing and integration facilities, Gaganyaan facilities, and the ability to integrate and launch multiple launch vehicles simultaneously with little delay.
- Near India's southernmost tip, a **new launch pad is being constructed** to give the commercial launch industry unfettered access to launch privately developed launch vehicles into low-Earth orbits.

### Earth Observation (EO)

- ISRO created the **IRS (Indian Remote Sensing) programme** and built satellites like Cartosat, RISAT (Radar Imaging Satellites), ResourceSat, OceanSat, and many more.
- ISRO now maintains a significant number of EO satellites for continuous coverage. Programmes including MGNREGA, PMGSY, PMKSY, AMRUT, PMFBY, SVAMITVA, and UIDIA have benefited from and are making extensive use of EO data.

### Navigation Satellite

- The **Indian Regional Navigation Satellite System (IRNSS)**, with an operational name of NavIC stands for **NAVigation with Indian Constellation**.
- It provides accurate real-time positioning and timing services over India and the region, extending approximately 1500 km around the Indian Mainland.
- IRNSS consists of three segments: **space, ground, and user**. The space segment consists of a base-layer constellation of seven satellites.
- The constellation has been augmented recently with the NVS-01 Satellite, which is the first of the second-generation navigation satellite.
  - The second-generation satellite series includes the L1 navigation band and incorporates an **indigenously developed Rubidium atomic clock**.
  - The inclusion of the L1 navigation band, improves the positioning, navigation, and timing services for civilian users and also facilitates interoperability with other GNSS services.
  - The indigenously developed space-based Rubidium atomic clock designed by the Space Applications Centre Ahmedabad is an important technology that only a handful of countries possess.

### Other Achievements

- **Space observatory**
  - **AstroSat**, India's first space observatory, was launched in September 2015 by a **PSLV-C30 (XL) rocket** from Satish Dhawan Space Centre Sriharikota.
  - Almost 2,000 people from 54 different countries have signed up to use AstroSat data. In November 2013.
- **Mars Orbiter Mission**
  - The Mars Orbiter Mission was launched in November 2013, and after 300 days of travelling between planets, it was placed in orbit around Mars on 24 September 2014.
  - The mission made major contributions to our understanding of the Martian atmosphere, exosphere, surface features, and so on. The Mars Orbiter Mission lost touch with Earth in April 2022 after accomplishing a wide range of scientific goals on Mars and the Solar corona.
- **Moon Mission**
  - India's first spacecraft, **Chandrayaan-1** was launched on 22 July 2008.
  - The Chandrayaan-1 launched a **Moon Impact Probe (MIP)** designated **Chandra's Altitudinal Compositional Explorer (ChACE)**.
    - ChACE has a camera, altimeter, and mass spectrometer for analysing the lunar surface.
  - India successfully launched their follow-up mission, **Chandrayaan-2** in July 2019. This mission consists of an **Orbiter, Lander, and a Rover**. Despite the unsuccessful soft landing, the orbiter is still operational and gathering data.
  - The **Chandrayaan-3 mission** set out to prove that a soft-landing and roving capabilities could be accomplished on the Moon. This mission was launched on 14 July 2023, and it made a soft landing near the Moon's South Pole on 23 August 2023.
  - After touching down, the science payloads spent the next 14 lunar days investigating the immediate vicinity.

- The initial ChaSTE experiment revealed the thermal behaviour of the lunar surface to a depth of 10 cms.
- **Sulphur was detected** by LIBS on the lunar surface.

#### • Aditya Mission

- The **Aditya-L1 mission** is the first in India to focus solely on solar science. When the spacecraft reaches a distance of around 1.5 million kilometres from Earth, it will enter a halo orbit around Lagrange point 1 (L1) in the Sun-Earth system.
  - The satellite will enter a halo orbit around the L1 point to ensure that its observations of the Sun are unaffected by occultation or eclipse.
  - In addition, this will make it possible to track the effects of solar activity on space weather in real time.
- In order to investigate the photosphere, chromosphere, and corona of the Sun, the spacecraft is outfitted with seven instruments that measure electromagnetic fields, particles, and magnetic fields.

#### Conclusion

- ISRO has begun its **XPOSAT mission** of scientific research, as well as the crucial **NASA- ISRO Synthetic Apparent Temperature Radar (NISAR)** initiative in which the two organisations will work together.
- ISRO is currently moving forth with a more comprehensive plan for a succession of lunar missions, including the **man-on-the-moon and Gaganyaan missions**, which will eventually result in the construction of a **Bharat Space station.**

#### **INDIA'S GROWING STATURE – A RISING POWER**

- The Covid-19 pandemic struck a blow to economies around the world. The post-Covid recovery phase, which ought to have seen the global community come together, is instead witnessing deep divisions.
- Multilateral institutions failed to deliver and distressed economies, especially the Global South, were left without any help from global leaders.
- Against this backdrop, India has set an example for the rest of the world through its leadership of the G20, its **values-based approach**, its **emphasis on global cooperation**, and a **human-centric vision of peace and progress for all.**
  - India's Presidency of the G20 this year, was a big success in building consensus on key issues such as the UN SDGs, macro-economic stability, digital public infrastructure, climate challenge, a just and equitable green transition, and reforms of multilateral structures.

#### Indian Leadership

- India is now a key player in shaping outcomes. One example, is the inclusion of the African Union (AU) into the G20 at the New Delhi Summit.
- Apart from the **vaccine assistance program** (during the pandemic), India has taken leadership in creating many platforms such as:
  - International Solar Alliance (ISA), the Coalition for Disaster Resilient Infrastructure (CDRI), the Indo-Pacific Oceans Initiative (IPOI), and Infrastructure for Resilient Island

#### **India's Climate Action**

- ❖ On track to reach net-zero emissions by 2070
- ❖ 40% share of renewables in India's energy mix
- ❖ 2400% growth in solar installed energy in under 8 years
- ❖ COP 21 targets achieved 9 years ahead of schedule

States (IRIS).

- To this list should be added the **Green Grids Initiative- One Sun One World One Grid (OSOWOG)**, proposed the First Assembly of the International Solar Alliance (ISA) in 2018.

- **Mission LiFE and Climate Crisis**

- First expounded in Glasgow by PM Modi, **Mission LiFE (Lifestyle for Environment)** places individual behaviour at the centre of the global climate action debate.
- Now codified as the **G20 High Level Principles on Lifestyles for Sustainable Development**, this mission intends to propagate a global network of individuals committed to environmentally-friendly lifestyles based on sustainable consumption patterns.

- **India: Leading through actions in achieving the Paris Agreement Goals**

- India is the only G20 country to have achieved its Paris Agreement Goals well before the stipulated target of 2030.
  - World leaders acknowledged that India is an indisputable world leader in clean energy.
- PM Modi has announced ambitious targets for 2030, including **installing 500 gigawatts of renewable energy capacity and reducing the emission intensity of its economy by 45 per cent.**
- India has presented an updated Nationally Determined Contributions (NDC). This update is a step towards India's long-term goal of reaching net-zero emissions by 2070.

- **Clean Energy**

- India has the **world's first fully solar-operated airport.** India's huge **railway system will become net zero in this decade.**
- It achieved the 40 per cent energy capacity target from non-fossil sources nine years before time.

- **Partnership with various countries to promote clean energy**

- India has also signed bilateral clean energy partnerships with the EU, Japan, and the US.
- India and the US have together revamped the US-India Strategic Clean Energy Partnership (USISCEP).
- The partnership aims to advance energy security and innovation, scale up emerging clean energy technologies, and deploy technical solutions through five key pillars:
  - ◆ Responsible Oil and Gas Pillar
  - ◆ Power and Energy Efficiency Pillar
  - ◆ Renewable Energy Pillar
  - ◆ Sustainable Growth Pillar, and
  - ◆ Emerging Fuels and Technologies.
- Another initiative is the **EU and India Clean Energy and Climate Partnership (CECP)**, which was established in 2016.
- Current areas of cooperation include activities in offshore wind energy, roof-top solar panels and solar parks, integration of renewable energy and storage, smart grids, biofuels, and energy efficiency in buildings.

- **Leadership in Green Hydrogen**

- In order to **export green hydrogen** and **establish hydrogen hubs** in various locations around the nation, India can imitate the Australian models.
- PM Modi has said that soon India will become a critical component in the supply chain of green hydrogen to ensure safe and secure alternatives to the ongoing disruptions.

- **Resilient Supply Chains**

- In December 2021, the Government announced a nearly **\$10 billion production-linked incentive (PLI) scheme** to encourage chip manufacturing in India.
- In March 2022, the Union Cabinet approved the **Semicon India programme** to develop the semiconductor and display manufacturing ecosystem.
  - India has an exceptional semiconductor design talent pool, which makes up to 20% of the world's semiconductor design engineers.
  - Moreover, most of the top 25 semiconductor design companies have their design or R&D centres in our country.
- The **trilateral Supply Chain Resilience Initiative**, launched in collaboration with Australia and Japan, is another significant step in addressing the supply chain crisis.
- This initiative aims to coordinate and incentivize supply chain diversification away from China and towards the three countries and like-minded partners.

- **Digital Infrastructure**

- On 1 July 2015, the Prime Minister launched Digital India to transform India into an empowered digital economy.
- Today, almost all government programmes have a digital dashboard that provides all the details of beneficiaries.
- In 2021, India reported **48 billion real-time digital transactions, or 40 per cent of the global total**.
  - This is nearly three times higher than China and seven times greater than the combined real-time payments volume of the world's leading economies: the US, Canada, the UK, France, and Germany.
- Around the world, countries have evinced interest in the Indian model of the UIDAI, Aadhaar and the unified payment portals that link India's huge population into a seamless whole.

- **Yoga and Ayurveda**

- India has traditionally **excelled at contributing to the global good**, as evident during the Covid-19 pandemic, when it provided free vaccines to nearly 100 countries and sent food aid and humanitarian assistance to Afghanistan, Ukraine, and several African countries.
- In his UNGA speech in 2014 PM Modi sought to promote this while proposing the International Day of Yoga. During Covid, the Government promoted Ayurvedic medicine or simple home remedies to boost natural immunity.
- In addition, India has provided open-source apps like CoWIN and Arogya Setu to other developing countries. The government proclaimed these as **Digital Public Good**, which 50 countries have utilized for their vaccination drives.

- **International Year of Millets**

- The Government of India proposed to the United Nations that 2023 be declared the International Year of Millets (IYOM- 2023).
- This is a **primary food crop in semi-arid tropical regions**, where conventional food crops struggle to thrive due to limited rainfall and poor soil quality.
- Millets also boast superior nutritional content in comparison to major cereal crops, contributing to food security and dietary health.

- The health benefits of millets received a huge boost during India's G20 presidency. Scores of dishes made of millets were offered to thousands of foreign and Indian participants at the hundreds of G20 events held in India.

### Conclusion

- India has now entered the period of Kartavya Kaal, which will provide a golden opportunity for India to achieve unprecedented levels of scientific, technological, economic, and social progress.
- Today, India has emerged as a ***Vishwa Mitra (global friend), a Vishwa Guru (global teacher), and a Vishwa Vaid (global physician)*** in sharp contrast to many others embroiled in trade, military, or ideological confrontation.

### SPORTING PROWESS THE YEAR OF HISTORIC WINS

#### Performance of India in Asian Games 2022

- India bagged its highest-ever medals (107) in 60 years with 75 per cent more gold medals than in Asian Games 2018 and bagged medals in 16 new sporting categories.
- The remarkable achievement of our women athletes in this tournament, who clinched around 50% of the total medals of Indian contingent, is a testament to their unwavering dedication, talent, and hard work.

#### Performance of Para Athletes

- Indian para-athletes too have created history with India's highest-ever medal tally in the Para Asian Games with 111 medals, including 29 Gold medals.
- This is India's best-ever performance since the inception of the Games where India was ranked 5th in the overall medal tally.

#### Other Achievements

- R Praggnanandhaa etched his name in the history books of Indian chess.
- He had become the first Indian after Viswanathan Anand to reach the final of FIDE World Cup and was a victory away from joining the Indian legend at the top.

#### Major scheme

##### ● Institution involved

- Various Sports Promotional Schemes across the country are implemented through Sports Authority of India (SAI), National Centres of Excellence (NCOE), SAI Training Centre (STC), Extension Centre of STC, National Sports Talent Contest (NSTC).

##### ● Schemes

- The ***Khelo India Scheme*** is being implemented by the Ministry of Youth Affairs and Sports through its five verticals which promote sports in the entire country including the rural areas.
- Khelo India is the basic platform to showcase sporting skills and spot talent at the national level.
- Under the 'Talent Search and Development' vertical of this scheme, Khelo India Athletes are identified selected, and provided annual financial assistance of Rs 6.28 lakh per annum per athlete.
- The Ministry organizes national-level multisport competitions, namely, Khelo India Youth Games, Khelo India University Games and Khelo India Winter Games.
- ***TOPS (Target Olympic Podium Scheme)*** is another flagship program of the Ministry of Youth Affairs and Sports which is an attempt to provide assistance to India's top athletes.

**INDIA'S FIRST REGIONAL RAPID TRANSIT SYSTEM [RRTS]**

- PM inaugurated the priority section of the Delhi-Ghaziabad- Meerut RRTS Corridor at Sahibabad RapidX Station in Ghaziabad, Uttar Pradesh.
- He also flagged off the ***Namo Bharat RapidX train*** connecting Sahibabad to Duhai Depot, marking the launch of the Regional Rapid Transit System (RRTS) in India.
- RRTS is a new rail-based, semi-high-speed, high- frequency commuter transit system.
- With a design speed of 180 kmph, RRTS designed to provide high-speed trains for intercity commuting every 15 minutes, which can go up to a frequency of every 5 minutes as per requirement.
- RRTS being developed in the country, is a state-of-the-art regional mobility solution.
- In line with PM GatiShakti National Master Plan, the RRTS network will have extensive multi-modal integration with Railway stations, Metro stations, Bus services, etc.

**REDEFINING MOBILITY: TRANSFORMING LANDSCAPE OF TRANSPORT SECTOR**

The present transport system of the country comprises several modes of transport including rail, road, coastal shipping, air transport etc.

**Roads**

- The Ministry of Road Transport and Highways was formed in 2009. It is the apex body for formulation and administration of the rules, regulations and laws relating to road transport and transport research.
- India has about 62.16 lakh km of road network, which is the **second largest in the world**.

**A. Bharatmala Pariyojana**

- Under Bharatmala, the Ministry is focusing on:
  - Development of road connectivity to border areas,
  - development of coastal roads including road connectivity for non-major ports,
  - improvement in the efficiency of national corridors,
  - development of economic corridors, inter corridors, and feeder routes, along with integration with Sagarmala.
- The Pariyojana envisages the development of about 26,000 km length of economic corridors. Further, about 8,000 km of inter corridors and about 7,500 km of feeder routes have been identified for improving effectiveness of economic corridors.

**B. Green National Highways Corridor Project**

- This Project was launched in 2016. The project includes upgradation of about 781 km of various national highways passing through Rajasthan, Himachal Pradesh, Uttar Pradesh and Andhra Pradesh.
- The objectives of the project include:
  - to evolve a policy framework for plantation along national highways;
  - to reduce the impact of air pollution and dust as trees and shrubs are known to be natural sinks for air pollutants;
  - to reduce the impact of ever increasing noise pollution caused due to increase in the number of vehicles;
  - to arrest soil erosion at the embankment slopes; etc.
- The project is being run with World Bank aid.

**C. National Highways Authority of India (NHAI)**

- NHAI was set up under the NHAI Act, 1988. It has been entrusted with National Highways Development Project (NHDP).
- Its objective is to ensure that all contract awards and procurements conform to the best industry practices with regard to transparency of process, to ensure healthy competition in the award of contracts, etc.
- The total length of NH (including expressways) in the country is 1,32,499 km while highways/expressways constitute only about 1.7 per cent of the length of all roads.
  - **They carry about 40 per cent of the road traffic.**

**D. National Highways Development Project (NHDP)**

- NHDP aims to upgrade, rehabilitate and widen major highways in the country to a higher standard. The project was started in 1998.
- This project is managed by NHAI under the Ministry of Road Transport and Highways. **The NHDP has been subsumed in the ongoing Bharatmala project.**

**E. PM GatiShakti Plan**

- **PM GatiShakti - National Master Plan for Multi- modal Connectivity**, 2021 is essentially a digital platform to bring 16 ministries, including Railways and Roadways together, for integrated planning and coordinated implementation of infrastructure connectivity projects.
- Important features of the PM GatiShakti include:
  - **Comprehensiveness:** It will include all the existing and planned initiatives of various ministries and departments with one centralized portal.
  - **Optimization:** The National Master Plan will assist different ministries in planning for projects after identification of critical gaps.
  - **Analytical:** It will provide the entire data at one place with GIS based spatial planning enabling better visibility to the executing agency.
  - **Dynamic:** All ministries and departments will now be able to visualize, review, and monitor the progress of cross-sectoral projects, through the GIS platform.

**F. Parvatmala Pariyojana**

- **Parvatmala Pariyojana-National Ropeways Development Programme** is being implemented for development of ropeways to improve accessibility and convenience for passengers and to promote tourism.
- Along with hilly areas, ropeways are being developed as alternative mode of transportation in congested urban areas e.g., those of Varanasi, Ujjain.

**G. National Registry of Vehicle and License Records**

- Transport Mission Mode Project has successfully automated RTO operations, set up a consolidated transport database.
- The salient aspects of this Mission Mode Project are two flagship applications-**Vahan and Sarathi**.
- While Vahan consolidates vehicle registration, taxation, permit, fitness and associated services across the country, Sarathi looks after the driving license, learner licence, driving schools and related activities.

**H. e-Tolling**

- **National Electronic Toll Collection (NETC) programme**, the flagship initiative of Ministry of Road Transport and Highways, aims to ensure seamless movement of traffic through fee plazas and increase transparency in collection of user fee using FASTag.

- The National Payment Corporation of India (NPCI) is the Central Clearing House.

### Railways

- From a very modest beginning in 1853, when the first train steamed off from Mumbai to Thane, a distance of 34 km, the Indian Railways have grown into a vast network of 7,308 stations spread over a route length of 68,043 km.

#### A. Research and Development

- The Research Design And Standards Organisation (RDSO) at Lucknow is the R&D wing of Indian Railways.
- RDSO, in collaboration with CSIR-CSIO has developed and deployed UV-C based anti-viral and anti-pathogen system for AC coaches by way of a deterrent to Covid.
- It has also developed and designed high speed automobile carrier coaches which has up graded features.

#### B. Railway Finance

- The government decided to merge the Railway Budget with the General Budget from the 2017-18.
- The unified budget brings the affairs of the Railways to center stage and presents a holistic picture of the financial position of the government. This merger facilitates multimodal transport planning between highways, railways and waterways.

#### C. Vande Bharat Express

- The Vande Bharat Express, formerly known as Train 18, is a semi-high-speed, electric multiple- unit train operated by Indian Railways.
- It began its operations in 2019 when the first of its kind was flagged off between New Delhi-Kanpur-Prayagraj-Varanasi route. By September 2023, 50 Vande Bharat trains were running across the country.

### Maritime Development

- India has a long coastline of about 7,517 km. It is an important natural resource for the country's trade. There are 12 major ports and about 200 non-major ports.
- Approximately 95 per cent of the country's trade by volume and 68 per cent by value is moved through maritime transport.

#### A. Shipping

- The Ministry of Shipping was formed in 2009. The Ministry was renamed as **Ministry of Ports, Shipping and Waterways (MoPSW) in 2020.**
- The capacity of the major ports in terms of their berths and cargo handling equipment vastly improved to cater to the growing requirements of the overseas trade and presently stands at 1617.39 MMT.

#### B. Sagarmala Programme

- Sagarmala Programme was launched to promote portled development in the country. The vision of the Programme is to reduce logistics cost of EXIM and domestic trade with minimal infrastructure investment.
- The **objectives** of the Programme include: **Port Modernization, Port Connectivity, Port-Led Industrialization, Coastal Community Development, Coastal Shipping & Inland Waterways.**

Zonal Railways	Headquarters
Central	Mumbai
Eastern	Kolkata
East Coast	Bhubaneswar
East Central	Hajipur
Northern	New Delhi
North Central	Prayagraj
North Eastern	Gorakhpur
Northeast Frontier	Maligaon (Guwahati)
North Western	Jaipur
Southern	Chennai
South Central	Secunderabad
South Eastern	Kolkata
South East Central Railway	Bilaspur
South Western Railway	Hubballi (Hubli)
Western	Mumbai
West Central Railway	Jabalpur

### C. Major Ports

- The 6 major ports-Kolkata, Paradip, Visakhapatnam, Kamarajar (Ennore), Chennai and VC Chidambaranar, are on the east coast.
- The other 6 major ports, viz., Cochin, New Mangalore, Mormugao, Mumbai, Jawaharlal Nehru Port (Sheva, Navi Mumbai) and Deendayal (erstwhile Kandla) are on the west coast.
- The **major ports are under the direct administrative control of the central government** and fall in Union List (7th Schedule of the Constitution).
- Ports other than the major ones are under the **jurisdiction of the respective maritime state government and fall in the Concurrent list.**

### D. Inland Water Transport

- India has about 14,500 km long navigable inland waterway network. However, cargo transport through it is, presently less than 2 per cent of the total cargo movement in the country.
- Inland Waterways Authority of India (IWAI) was set up in 1986.
- To promote IWT, **Government declared 111** (including 5 existing and 106 new) National Waterways (NWS) spread over 24 states under the National Waterways Act, 2016.
- **Jal Marg Vikas Project (JMVP)** is being implemented by the IWAI for the capacity augmentation of National Waterway I on the Haldia-Varanasi stretch of Ganga-Bhagirathi- Hooghly river system.

### Civil Aviation

The Ministry of Civil Aviation encompasses within its ambit the civil aviation sector in the country which, It formulates legislations for carrying out the **Convention on International Civil Aviation, 1944** (Chicago Convention).

#### 1. Regional Connectivity Scheme

- **The Regional Connectivity Scheme (RCS)- Ude Desh ka Aam Naagrik (UDAN)** was envisaged in National Civil Aviation Policy (NCAP) 2016.
- The primary objective of RCS-UDAN is to facilitate/stimulate regional air connectivity by making it affordable to masses.
- The scheme envisages providing connectivity to un-served and underserved airports of the country through revival of existing air strips and airports. The first RCS UDAN flight was inaugurated in 2017 from Shimla to Delhi.

#### 2. Airports Authority of India

- Airports Authority of India (AAI), statutorily constituted under the Airports Authority of India. Act, 1994.
- AAI is entrusted for the control and management of Indian airspace including provision for air navigation services.
- The Indian airspace managed by AAI measures approximately 2.8 million sq. nautical miles, which includes land area measuring about 1.0 million square nautical miles and oceanic airspace measuring about 1.8 million square nautical miles.
- AAI manages 133 airports, which include 23 international airports (including 3 civil enclaves), 10 customs airport (including 4 civil enclaves) and 100 domestic airports (including 22 civil enclaves).

#### 3. Airports Economic Regulatory Authority (AERA)

- AERA is a statutory body constituted under the Airports Economic Regulatory Authority Act, 2008.

- It is entrusted with the responsibility to regulate tariff and other charges for the aeronautical services rendered at airports and to monitor performance standards of airports.

#### 4. International Connectivity

- India currently has Air Services Agreement with 116 countries. India presently provides direct connectivity to more than 52 countries, whereas, connects more than 100 countries through indirect routes.
- In order to facilitate the connectivity from foreign countries, designation of foreign carriers in terms of the Air Services Agreement is carried out.
- Under the National Civil Aviation Policy, 2016, **Open Sky Arrangement** allows unlimited flights over and above the existing bilateral rights directly to/ from 6 Indian Metro Airports viz., Delhi, Mumbai, Kolkata, Chennai, Hyderabad and Bengaluru.
- As of October, 2023, India has open sky arrangements with 24 countries.

#### 5. Biometric Enabled Seamless Travel

- **DigiYatra policy** is an initiative launched by Ministry of Civil Aviation for providing passengers seamless and hassle-free experience at airports without the need for verification of ticket and ID at multiple touch points.
- It envisages contactless, seamless processing of passengers at airports based on Facial Recognition Technology. The service is presently being launched for domestic flights only and is voluntary in nature.
- As of October, 2023 it is operational at 13 airports.

#### 6. GPS Aided Geo Augmented Navigation (GAGAN)

- GAGAN is a collaborative system developed jointly by **Airports Authority of India and Indian Space Research Organization** to improve the accuracy and reliability of GPS signals, specifically for precision approaches in civil aviation.

#### 7. Krishi Udan 2.0

- **Krishi Udan 2.0 scheme** was launched in 2021 for facilitating and incentivizing movement of cargo by air transportation.
- This is done by providing full waiver of various charges for Indian freighters and passenger to cargo at selected airports.
- The Scheme aims to ensure seamless, cost-effective, time bound, air transportation and associated logistics for all agri- produce originating especially from North-East, hilly and tribal regions of the country.

#### 8. Sugamya Bharat Abhiyan

- Sugamya Bharat Abhiyan (**Accessible India Campaign**) is in line with the Rights of Persons with Disabilities Act, 2016.
- Ministry of Civil Aviation has published the 'Accessibility Standards and Guidelines for Civil Aviation Sector' to assist people comprehend and understand the Universal Accessibility Standards.

### INDIA'S INDUSTRY SECTOR

#### Steps To Improve Logistics Efficiency

##### A. PM GatiShakti

- PM GatiShakti launched in 2021 is a response direction, which rests on the premise of a 'whole of government approach.
- It has broadly two components to achieve integration, synchronisation, prioritisation, and optimisation.
- First, the development of GIS-based technology platform called National Master Plan.

- Through this, everything is linked from roads to railways, from aviation to agriculture, various ministries and departments.
- This will ensure that every department has the right and accurate information on time.
- Secondly, the **administrative arrangement** to integrate efforts of various line ministries/ departments for synchronised development of multimodal infrastructure and the economic zone through the formation of a three-tier institutional arrangement.

#### **B. National Logistics Policy**

- The National Logistics Policy (NLP) was launched in 2022. It lays down an overarching interdisciplinary, cross-sectoral, multi-jurisdictional and comprehensive policy framework for the logistics sector.
- Its vision is to develop a technologically enabled, integrated, cost-efficient, resilient, sustainable, and trusted logistics ecosystem for accelerated and inclusive growth.

#### **Foreign Direct Investment Policy**

- DPIIT was the nodal-department for the formulation of the policy on FDI. It is also responsible for maintenance and management of data on inward FDI into India, based on the remittances reported by the Reserve Bank of India.
- FDI under up to 100 per cent is permitted under the automatic route in most sectors/activities.
- After abolition of the Foreign Investment Promotion Board (FIPB) in June 2017, the process for granting FDI approvals has been simplified through creation of a portal.
  - The management and running of the FIF Portal is administered by DPIIT to facilitate the clearance of applications that are filed through the approval route.
  - Further, since August 2022, FIF Portal has been integrated with National Single Window System (NSWS) and the FDI proposals requiring government approval are filed through NSWS portal.

#### **Make in India**

- The 'Make in India' initiative was launched in 2014 to facilitate investment, foster innovation, build best-in-class infrastructure, and make India a hub for manufacturing, design, and innovation.
- It is one of the unique '**Vocal for Local**' initiatives that promotes India's manufacturing domain to the world.

#### **Production Linked Incentive Scheme**

- Keeping in view India's vision of becoming 'Atmanirbhar', Production Linked Incentive (PLI) schemes for 14 key sectors were announced to enhance India's manufacturing capabilities and exports.
- The PLI schemes have major objectives that include:
  - attracting investments in sectors of core competency and cutting-edge technology;
  - make Indian companies and manufacturers globally competitive so that they can penetrate global markets and integrate with global value chains.

#### **Startup India**

- The Startup India initiative was launched in 2016. The initiative aims to foster entrepreneurship and promote innovation by creating an ecosystem conducive to startup growth.
- As of 15 May 2023, a total of 99,371 startups have been recognised by DPIIT with at least one startup from every State and UT of the country having created over 10.49 lakh jobs since 2016.
- DPIIT established **Fund of Funds (FFS)** with a corpus of INR 10,000 crore, to meet funding needs of startups.
  - FFS do not directly invest in startups, but instead provide capital to SEBI-registered Alternate Investment Funds (AIFs).

- These AIFs, in turn, invest money in growing Indian startups through equity and equity-linked instruments.
- DPIIT also created **Startup India Seed Fund Scheme** (SISFS) to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry, and commercialization.

### Heavy Industries

- The Ministry of Heavy Industries promotes the development and growth of automobile, capital goods and heavy electrical equipment sectors.
- In 2021, the Department of Public Enterprises was shifted to Ministry of Finance.
- One of the key thrust areas of MHI is aimed at transforming mobility in the country by increasing electric two-wheelers, electric three wheelers and electric buses.
- Heavy Electrical Equipment Industry (HEI) caters to the needs of the energy sector and other industrial sectors.
  - Bharat Heavy Electricals (BHEL) is a leading public sector catering to HEI with a dominant market share.

### Micro, Small and Medium Enterprises

- **Significance**
  - MSMEs not only play a crucial role in providing large employment opportunities but also help in industrialization of rural and backward areas, thereby reducing regional imbalances.
  - It ensures more equitable distribution of national income and wealth.
- **Classification**
  - The primary responsibility of promotion and development of MSMEs is of the state governments.
  - A new classification for manufacturing and service enterprises was notified in 2020, along with guidelines to facilitate the entrepreneurs. Consequent upon these changes, the classification of MSMEs includes the following:
    - a **micro enterprise** is one, where the investment in plant and machinery or equipment does not exceed one crore rupees and turnover does not exceed five crore rupees;
    - a **small enterprise** is one, where the investment in plant and machinery or equipment does not exceed ten crore rupees and turnover does not exceed fifty crore rupees; and
    - a **medium enterprise** is one, where the investment in plant and 'machinery or equipment does not exceed fifty crore rupees and turnover does not exceed two hundred and fifty crore rupees.
  - The Ministry of MSME also launched **Udyam Assist Platform** in January, 2023 to bring Informal Micro Enterprises under the formal ambit of MSMEs.
- **Indian MSME Sector**
  - MSME sector contributes to around 27 per cent of India's GDP, around 44 per cent of India's exports and provides employment to over 11.10 crore people.
  - MSME sector is also important for fostering entrepreneurship and generating self-employment opportunities at comparatively lower capital cost, next only to agriculture.
- **Udyam Registration Portal**
  - To facilitate MSME registration process in accordance with the revised MSME definition, the Ministry of MSME launched Udyam Registration Portal in July, 2020. The registration process is free of cost, paperless and digital.

- **Khadi and Village Industries Commission (KVIC)**

- KVIC is a statutory organization under the Ministry of MSME engaged in promoting and developing Khadi and Village Industries (KVI) for providing employment opportunities in the rural areas, thereby strengthening the rural economy.
- It is crucial for generating sustainable A non-farm employment opportunities in rural areas at a low per capita investment.

### Textiles

- The mill sector, with 3,400 textile mills having an installed capacity of more than 50 million spindles and 8,42,000 rotors, is the **second largest in the world**.
- Traditional sectors like handlooms, handicrafts and small scale power loom units are the biggest source of employment for millions of people in rural and semi-urban areas.
- The textile industry **contributes to 7 per cent of industry output in value terms of 2 per cent of India's GDP and to 15 per cent of the country's export earnings**.
- With over 45 million people employed directly, this industry is one of the largest sources of employment generation in the country.

### Steel

- India's crude steel capacity has steadily risen to 142 MT at present following which India has become the world's second-largest producer of crude steel, surpassing Japan.

### Fertilisers

- The Department of Fertilisers comes under the ambit of the *Ministry of Chemicals and Fertilisers*.
- The main objective of the Department is to ensure adequate and timely availability of fertilisers at affordable prices for maximising agricultural production in the country.

### Chemicals and petro-chemicals

- Department of Chemicals and Petro-chemicals was transferred to the Ministry of Chemicals and Fertilisers.
- It is entrusted with the responsibility of planning, development and regulations of the chemicals, petro-chemicals and pharmaceutical industry sector.

### Pharmaceuticals

- **The Indian pharmaceutical industry is the world's third-largest by volume**. Total Annual Turnover of Pharmaceuticals industry is Rs 3,79,450 crore for 2022- 2023.
- Total exports of pharmaceuticals are to the tune of Rs 1,94,254 crore and total imports of pharmaceuticals are to the tune of Rs 56,391 crore for 2022-23 (for bulk drugs, drug intermediates, drug formulations, and biologicals).

### Geological Survey of India (GSI)

- **About**

- GSI, the **premier earth science organisation** of the country, is the principal provider of basic earth science information to the Government, industry, and the geoscientific sector.
- GSI is now the custodian of one of the largest and most comprehensive earth science databases developed over the century and a half.
- Creation and updation of a national geoscientific information and knowledge base through ground, marine, and airborne surveys and their dissemination are the primary goals of GSI.

**Activities**

- The present activity domains of GSI include surface mapping; aerial and remote sensing surveys; offshore surveys; exploration for mineral and energy resources, etc.
- Baseline geological data at 1:50,000 scale exists for almost the whole country; efforts are on to generate similar data on geochemical and geophysical themes.
- Natural resource assessment and augmentation is now the prime thrust area, along with activities in public good geoscience.

**Indian Bureau of Mines**

- Indian Bureau of Mines established in March 1948, is a multidisciplinary scientific and technical organisation under the **Ministry of Mines**.
- It has been entrusted with the responsibilities for conservation and systematic exploitation of mineral resources other than coal, petroleum, natural gas, atomic minerals and minor minerals.
- The Ministry of Mines has three Public Sector Undertaking (PSUs) under its administrative control:
  - National Aluminium Company Limited (NALCO), Hindustan Copper Limited (HCL) are operating in the field of mining and mineral processing, and
  - Mineral Exploration Corporation Limited (MECL) is operating in the field of mineral exploration.

**MERI MAATI MERA DESH**

- The Meri Maati Mera Desh campaign is a tribute to the Veers and Veeranganas who have made the supreme sacrifice for the country.
- The activities included
  - the **building of Shilaphalakam (a memorial)** to express heartfelt gratitude to all the bravehearts who have made the supreme sacrifice;
  - 'Panch Pran' pledge taking by the people at Shilaphalakam;
  - planting of saplings of indigenous species and developing 'Amrit Vatika' (Vasudha Vandhan), and
  - felicitation ceremonies for honouring the freedom fighters and the families of deceased freedom fighters (Veeron ka Vandan), among others.
- The **Meri Maati Mera Desh** campaign also includes the Amrit Kalash Yatra, which comprises a collection of mitti (soil) and rice grains from over 6 lakh villages in rural areas and from wards in urban areas.

**AGRICULTURE AND RURAL DEVELOPMENT KEY INITIATIVES & ACHIEVEMENT**

- Livelihood security and financial empowerment of rural people are key priorities of the Government of India in its path towards Atmanirbhar Bharat.
- To achieve the goal, budget allocation for 2023-24 have been increased substantially for ongoing schemes and new initiatives.

**Budget 2023-24 and Agriculture**

- The Ministry of Agriculture and Farmers' Welfare has been allocated Rs1,25,036 crore for FY 2023-24, 5% higher than the revised estimates for 2022-23.
- In addition to allocations for continuing schemes, budget provisions were made for development of **Digital Public Infrastructure** and to set-up an **Agriculture Accelerator Fund**.

- The target for agriculture credit was increased to Rs 20 lakh crore and a provision of Rs 6,000 crore was made to launch a new scheme PM Matsya Sampada Yojana.
- The Union Budget also announced setting-up of a **decentralized storage capacity** and **multi-purpose co-operative societies**.
- On the other hand, the Ministry of Rural Development has been allocated Rs 1,59,964 crore for FY 2023-24. The Ministry, in addition to its social responsibilities, aims to develop rural infrastructure for growth and optimise the use of land resources in the country. In the budget, outlay on the Pradhan Mantri Awas Yojana was increased by 66 per cent to Rs 79,590 crore.

### Millets and India

- Based on the proposal of the Government of India, the year 2023 was declared the 'International Year of Millets' by the United Nations General Assembly.
- India renamed Millets as Shree Anna to express its high regard and esteem, especially in a national context.
- The at-home consumption of millets has increased to 14 kilograms per month per person, which was previously not more than 3 kilograms.
- Millets have been selected in 19 districts of the country under the 'One District, One Product' scheme for further promotion and expansion. More than 500 startups and a large number of Farmer Producer Organisations are now engaged in the processing and packaging of various millet-based nutri-foods for direct sales in super-markets and malls.
- India organised the **Global Millets Conference** (March 2023) in New Delhi.

### Food Production and storage in India

- On the front of food production, the country set a new record for both food grain and horticultural produce in 2022-23 with an estimated production of 330 million tonnes and 352 million tonnes respectively.
- In line with the Government's policy of fixing Minimum Support Price (MSP) at a level of at least 1.5 times the all-India weighted average cost of production, the Government announced the increase in MSP for mandated Rabi crops for marketing season 2024-25.
  - The pattern of increase in MSP reflects the intent of the Government to promote crop diversification towards oilseeds and pulses to strengthen food security, increase farmers' income, and reduce dependence and imports.
- The Government has announced the facilitation of the **World's Largest Grain Storage Plan in the Cooperative Sector** this year.
  - The plan entails setting up various types of agri-infrastructure, such as warehouses, custom hiring centres, processing units, etc. at the level of Primary Agricultural Credit Societies (PACS).
  - With a far-reaching network of over one lakh PACS and more than 13 crore member farmers, the plan envisages a substantial reduction in food wastage, a strengthening of food security, and a boost to farmers' income.

### Initiatives for Growth

- As per Budget Proposal (2023-24), the Government has approved the 'PM Programme for Restoration, Awareness Generation, Nourishment, and Amelioration of Mother-Earth' (PM-PRANAM) scheme.
- The initiative aims to save the health of Mother Earth by promoting sustainable and balanced use of fertilisers, adopting alternate fertilisers, promoting alternate farming, and implementing resource conservation technologies.

- Further, the Government has also approved market development assistance @Rs 1500/MT to promote the field application of organic fertilisers, specifically manure produced at plants under the **GOBARdhan initiative**.
- The govt also launched **the world's first Nano-DAP** liquid (D Ammonium Phosphate) in April 2023.
  - The effect of one bottle of 500 ml on the crop is equivalent to that of a 45 kg bag of granular urea!
  - Enhanced use of liquid fertilisers will reduce quantum of fertiliser imports, thus saving the country's valuable revenue and foreign currency.
- The Government has recently approved Rs 22,303 crore subsidy for nutrient-based phosphatic and potassic fertilisers for the Rabi season.
- This year, the Government launched some specific IT-based initiatives.
  - The first among these, called the **Kisan Rin Portal**, is designed to facilitate access to credit services under the Kisan Credit Card (KCC).
  - It will also assist farmers in availing of **subsidized agriculture credit through the Modified Interest Subvention Scheme (MISS)**.
  - The Government initiated a special drive called '**Ghar Ghar KCC Abhiyaan**' from 1 October to 31 December 2023.
    - It aims to connect around 1.5 crore beneficiaries of PM Kisan Samman Nidhi who are not yet connected to the KCC scheme.
  - A comprehensive **WINDS (Weather Information Network Data Systems)** manual was launched.
    - WINDS is an effort to establish a network of automatic weather stations and rain gauges at the taluk/block and gram panchayat levels.
    - Weather data will help improve crop management, resource allocation, and risk mitigation.
- During prestigious Presidency of G20 this year, India organised a G20 Agriculture Ministers' Meeting in Hyderabad.
- The two key outcomes of the meeting:
  - *Deccan High Principles on Food Security and Nutrition 2023*, and
  - *International Millets and Other Ancient Grains Research Initiative (MAHARISHI)*.

### Path of Prosperity for Rural India

- The Ministry of Rural Development has launched a special drive under its flagship programme, '**Deendayal Antyodaya Yojana- National Rural Livelihoods Mission' (DAY-NRLM)**.
  - The drive aims to enable two crore 'Lakhpati Didis - SHG Didis' who can earn a sustainable income of at least Rs 1 lakh per annum per household.
  - During the drive, each SHG household is being encouraged to take up multiple livelihood activities coupled with value chain additions.
- **Sangathan Se Samridhhi: Leaving no rural woman behind** was another national campaign under DAY-NRLM' that aimed at mobilizing an additional one crore women from vulnerable and marginalised rural households under the lap of SHGs.
- As a digital step towards strengthening market support for products made by women SHGs, DAY-NRLM launched an innovative **eSARAS mobile app**.
  - It will be used for processing, packaging, and shipping of products that customers purchase through the eSARAS portal and eSARAS mobile app.

- It will handle the logistics required to bring an online order to a customer's doorstep.
- the Ministry of Rural Development has launched a campaign Promoting Digital Transactions in 50,000 Gram Panchayats.
- **Banking Correspondent or BC Sakhis** is making significant contributions in this endeavour and is accelerating the empowerment of women in villages.
- Government has revamped its '**Rashtriya Gram Swaraj Abhiyan**'.
  - Its nine themes include poverty- free, healthy, child-friendly, water-sufficient, clean and green, self-sufficient infrastructure, socially secured, good governance, and women-friendly villages.
- Among welfare schemes, the **Jal Jeevan Mission** achieved the milestone of providing tap water connections to 13 crore households.
- This year, the Government has approved an extension of the **PM Ujjwala Yojana** for the release of 75 lakh LPG connections over three years (2023-24 to 2025-26). This will take the total number of beneficiaries to 10.35 crore.
- The **PM Gram Sadak Yojana** has helped create 1,77,119 number of roads measuring 7,45,780 km under all its verticals/interventions.
- **Mahatma Gandhi National Rural Empowerment Guarantee Act**, 2005 has created 201.96 crore person days and 14.35 crore active workers during 2023-24.
- With a view to conserving water for the future, **Mission Amrit Sarovar** is aiming for the rejuvenation and development of 75 water bodies in each district of the country.
- This year marks nine years of the **Swachh Bharat Mission (SBM)**, and the achievement of 75% ODF (Open Defecation Free) Plus villages is a significant milestone in this regard.
- The nation observed **Swachhata Hi Seva campaign** from 15 September to 2 October 2023 with the theme 'Garbage-Free India'.

### Conclusion

- The Government continued its emphasis on improving the quality of life in rural areas to ensure more equitable and inclusive development.
- It aims to 'transform lives and livelihoods through proactive socio-economic inclusion, integration, and empowerment of rural India'.