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RESTRUCTURING OF SKILL INDIA PROGRAMME

Relevance for Exam:

- **Prelims and Mains:** Key Components of the Skill India Programme (SIP), Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0), Pradhan Mantri National Apprenticeship Promotion Scheme (PM-NAPS), Jan Shikshan Sansthan (JSS) Scheme, Impact of the Skill India Programme, Challenges in Implementation.

Why in the News?

- The Union Cabinet has approved the **continuation and restructuring of the Central Sector Scheme 'Skill India Programme (SIP)' till 2026.**
- **Financial Outlay:** ₹8,800 crore for the period **2022-23 to 2025-26.**
- The initiative aims to **strengthen workforce development, integrate demand-driven training, and enhance industry alignment.**

Key Components of the Skill India Programme (SIP):

- **The restructured Skill India Programme combines the following three major schemes:**
 - Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0)
 - Pradhan Mantri National Apprenticeship Promotion Scheme (PM-NAPS)
 - Jan Shikshan Sansthan (JSS) Scheme
- These initiatives focus on **structured skill development, on-the-job training, and community-based learning.**
- **Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0):**
 - Key Features:
 - ◆ Provides National Skills Qualification Framework (NSQF)-aligned training for individuals aged **15-59 years.**
 - ◆ Includes Short-Term Training (STT), Special Projects (SP), and Recognition of Prior Learning (RPL).
 - ◆ Integration of On-the-Job Training (OJT) within short-term skilling programs.
 - ◆ 400+ new courses introduced on AI, 5G, Cybersecurity, Green Hydrogen, Drone Technology, etc.
 - ◆ Micro-credential & National Occupational Standards (NoS)-based courses (7.5 to 30 hours).
 - ◆ Blended learning model with digital delivery, making training flexible.
 - ◆ Skill Hubs established in IITs, NITs, Jawahar Navodaya Vidyalayas (JNVs), Kendriya Vidyalayas, Sainik Schools, EMRS, PM Shri Schools, Toolrooms, NILET, and CIPET.
- **Pradhan Mantri National Apprenticeship Promotion Scheme (PM-NAPS):**
 - Key Features:
 - ◆ Targets individuals aged **14-35 years.**
 - ◆ 25% stipend support (₹1,500 per month per apprentice) through Direct Benefit Transfer (DBT).
 - ◆ Encourages apprenticeships in emerging fields such as:
- **AI, Robotics, Blockchain, Green Energy, and Industry 4.0 technologies.**
 - ◆ Focus on MSMEs & underserved areas (Aspirational Districts & North-East Region).
- **Jan Shikshan Sansthan (JSS) Scheme:**
 - Key Features:
 - ◆ Community-centric skill development program.
 - ◆ Focuses on **women, rural youth, and economically disadvantaged groups.**

- ◆ **Age Group:** 15-45 years.
- ◆ Provides **low-cost, doorstep training with flexible schedules.**
- ◆ Aims to **promote self-employment & wage-based livelihoods.**

Impact of the Skill India Programme

Area of Impact	Details
Total Beneficiaries	2.27 crore+ across all schemes
Budget Outlay	₹8,800 crore (2022-23 to 2025-26)
Industry-Aligned Training	400+ new courses on emerging technologies
Employment Generation	Apprenticeships & job placement through Recruit-Train-Deploy (RTD) model
Infrastructure Expansion	Skill Hubs in IITs, NITs, JNVs, PM Shri Schools, Toolrooms, etc.
International Mobility	MMPAs, sectorial skill gap studies, language training
Compliance Simplification	"Ease of Doing Business" approach

Challenges in Implementing the Skill India Programme:

Challenges	Description
Skill-Job Mismatch	Need for better alignment between training and industry needs .
Low Awareness	Lack of awareness & participation among rural youth and marginalized communities.
Infrastructure Gaps	Insufficient training centers in remote areas .
Employment Linkages	Placement rates remain low despite training programs.
Funding & Execution Issues	Delays in fund allocation & implementation of skill programs.

NAKSHA SCHEME

Relevance for Exam:

- **Prelims and Mains:** What is the NAKSHA Scheme?, Why was the Program Needed?, Key Details.

Why in the News?

- The **NAtional geospatial Knowledge-based land Survey of urban HAbitations (NAKSHA) scheme** was officially launched on **February 18, 2025**, by **Union Rural Development Minister** in Raisen, Madhya Pradesh. This initiative, first proposed in the **Union Budget 2024**, aims to **modernize urban land records using geospatial technology**.

What is the NAKSHA Scheme?

- NAKSHA is a **city survey initiative** under the **Digital India Land Records Modernization Programme (DILRMP)**. It is led by the **Department of Land Resources (DoLR)**, Ministry of Rural Development.
- **Objectives:**
 - **Digitization of urban land records with GIS mapping.**

- o Creation of an **IT-based system** for **property record administration, tax collection, and urban governance**.
- o **Modernization of land records** to improve financial health of urban local bodies.

Why was the Program Needed?

- **Outdated urban land records:** Unlike rural areas, urban land records remain **incomplete, outdated, or unstructured** in many states.
- **Limited urban mapping:** Many cities **lack proper cadastral maps** for governance and property taxation.
- **Urban sector reforms:** The initiative aligns with Union **Finance Minister's 2025 Budget speech**, which emphasized urban governance, land reforms, and digital infrastructure.
- **Improving tax collection & property transactions:** Accurate land records will lead to **better urban planning, efficient taxation, and reduced land disputes**.

Key Details:

• Pilot Project Scope:

- o **Covers 152 urban local bodies in 26 states.**
- o Cities with **less than 35 sq km area and under 2 lakh population** are selected.
- o **Total coverage:** 4,142.63 sq km (out of India's 1.02 lakh sq km urban area).
- o **Budget:** ₹194 crore (100% centrally funded).

• Survey & Mapping Process:

- o **Drones equipped with cameras & LiDAR sensors** will conduct aerial surveys.
- o **Ground verification** will link properties with tax, ownership, and registration details.
- o **2D/3D models of urban areas** will be created for final land records.
- o A **grievance redressal mechanism** will handle objections before final records are published.

• Expected Benefits:

- o **Reduction in land disputes** and easier property transactions.
- o **Improved urban planning & infrastructure development.**
- o **Higher property tax collection** and better municipal governance.
- o **Enhanced credit access** as clear property records will aid in loan approvals.



BHARATPOL PORTAL

Why in the News?

- Union Home Minister Amit Shah inaugurated the **BHARATPOL Portal**, developed by the **Central Bureau of Investigation (CBI)**, in New Delhi.
- This initiative aims to enhance India's international cooperation on criminal investigations by leveraging **INTERPOL's global network of 195 countries**.

What is the BHARATPOL Portal?

- BHARATPOL is a state-of-the-art portal developed by the Central Bureau of Investigation (CBI) that enables **real-time collaboration** between Indian law enforcement agencies and their international counterparts via INTERPOL.
- It will streamline processes like issuing **Red Notices** and other INTERPOL color-coded notices to track and apprehend fugitives globally.
- **The portal is designed to address crimes such as:**
 - Drug trafficking
 - Human trafficking
 - Arms smuggling
 - Cross-border terrorism
 - Cybercrime

Features of BHARATPOL:

- **Key Modules:**
 - **Connect:** Enables Indian law enforcement to act as an extension of **INTERPOL's National Central Bureau (NCB-New Delhi)**.
 - **INTERPOL Notices:** Facilitates quick and secure transmission of requests for global alerts like **Red Corner Notices**.
 - **References:** Simplifies international assistance in criminal investigations.
 - **Broadcast:** Shares requests for assistance from 195 member countries in real time.
 - **Resources:** Enhances capacity building by sharing documents and best practices.
- **Access to Databases:**
 - BHARATPOL integrates with **19 types of INTERPOL databases**, improving crime analysis, prevention, and investigation.
- **Trial in Absentia:**
 - **Under new Indian criminal laws**, fugitives can be tried and sentenced even in their absence, facilitating easier extradition processes.
- **Real-Time Interface:**
 - Speeds up responses to domestic and international requests for law enforcement assistance.

Role of the CBI in BHARATPOL:

- The **CBI**, as India's National Central Bureau (NCB-New Delhi) for INTERPOL, plays a critical role in facilitating **international criminal investigations**.
- **Key Responsibilities:**
 - Coordinate between central, state, and Union Territory law enforcement agencies.
 - Manage **INTERPOL Liaison Officers (ILOs)** and **Unit Officers (UOs)**.
 - Ensure smooth communication, replacing traditional methods like emails and faxes with modern, efficient systems.

What is INTERPOL?

- The International Criminal Police Organization (INTERPOL) is an inter-governmental organization with 196 member countries.
- It serves as a global platform for law enforcement agencies to collaborate and share information on criminals and crimes to ensure a safer world.

Key Features of INTERPOL:

- **Global Network:** INTERPOL connects member countries through its secure communication system, I-24/7, enabling real-time access to databases, criminal records, and operational support.
- **General Secretariat:**
 - Coordinates day-to-day activities to combat transnational crimes.
 - Operates from its headquarters in Lyon, France, and has regional offices, including a global innovation hub in Singapore.
- **National Central Bureaus (NCBs):**
 - Each country has an NCB, which acts as the main contact point for the General Secretariat and other NCBs.
 - The CBI, as India's National Central Bureau (NCB-New Delhi) for INTERPOL, plays a critical role in facilitating international criminal investigations.
- **Focus on Four Crime Areas:**
 - Counter-terrorism
 - Cybercrime
 - Organized and Emerging Crimes
 - Financial Crimes and Anti-Corruption

SMART CITIES MISSION

Relevance for Exam:

- **Prelims and Mains:** What is Smart Cities Mission?, Objectives of the Mission, Status of the Smart Cities Mission, Challenges Faced by the Mission, Comparison with Global Smart City Models, Way Forward.

Why in the News?

- The Smart Cities Mission, launched to create models of urban development, has faced significant challenges, particularly in Shimla, where projects failed to deliver tangible outcomes. With the Mission nearing its completion, debates around its governance and implementation have intensified.

What is Smart Cities Mission?

- Launched in June 2015, the Smart Cities Mission (SCM) is a flagship program of the Indian government aimed at improving urban infrastructure and governance using technology, sustainability, and citizen-centric solutions.
- **Smart Cities Mission extended till March 2025.**
- **Core Idea:** Integrating technology through the Internet of Things (IoT) for efficient urban management.
- **Components:**
 - **Pan-City Initiatives:** IT-enabled services like mobility, waste management, and governance.
 - **Area-Based Development (ABD):** Focus on retrofitting, redevelopment, and greenfield projects in selected zones.
- **Funding:**
 - Operated as a Centrally Sponsored Scheme.
 - Central government provides an average of Rs. 100 crores per city per year.
 - State governments and ULBs contribute an equal amount to the mission.



Objectives of the Mission:

- **Improve Quality of Life:** Ensure access to basic services such as water, sanitation, and electricity.
- **Sustainability:** Promote energy-efficient and green solutions.
- **Economic Growth:** Foster innovation and attract investments to boost urban economies.
- **Citizen-Centric Governance:** Encourage participatory urban planning and smart technology solutions.

Status of the Smart Cities Mission:

- **Target:** 100 cities identified for smart city transformation.
- **Funding:** Estimated at **₹2.05 lakh crore** for pan-city and ABD projects.
- **Progress:**
 - o Only **24%** of the proposed budget has been spent in cities like Shimla.
 - o Many projects remain incomplete, including redevelopment plans and non-motorized mobility initiatives.

Challenges Faced by the Mission:

- **Bypassing Local Governance:**
 - o Implementation through **Special Purpose Vehicles (SPVs)** sidelined urban local bodies and citizens.
 - o Lack of accountability and public involvement led to poor project prioritization.
- **Funding and Resource Utilization:**
 - o Failure to generate funds through **PPP models, municipal bonds, and external borrowings.**
 - o Inefficient allocation of funds, with many projects underutilized or abandoned.
- **Technology Gaps:**
 - o Lack of preparedness to integrate **IoT-based solutions** in cities with inadequate basic infrastructure.
- **Poor Planning and Execution:**
 - o Unrealistic timelines and targets led to incomplete or irrelevant projects.
 - o Misaligned priorities, such as focusing on aesthetic projects over fundamental services.
- **Traffic and Urban Mobility Issues:**
 - o Despite plans, traffic congestion in cities like Shimla worsened, with no improvements in public or non-motorized transport.

Comparison with Global Smart City Models:

Parameter	Global Smart Cities (e.g., Singapore)	India's Smart Cities Mission
Governance	Decentralized, citizen-centric	SPV-driven, bypassing local governments
Focus	Advanced technology (IoT, AI) in governance	Basic urban amenities with limited tech use
Funding	Strong public-private partnerships (PPP)	Poor PPP implementation and fund mobilization
Outcomes	Tangible improvements in quality of life	Marginal impact, incomplete projects

Way Forward:

- **Strengthen Local Governance:** Empower **urban local bodies (ULBs)** to take ownership of projects and ensure citizen participation.
- **Better Resource Management:**

- o Focus on realistic budgeting and leveraging **PPP models** effectively.
- o Introduce mechanisms for **transparent fund utilization**.
- **Reassess Project Priorities:** Shift focus to critical areas like **public transport, affordable housing, and water management** over aesthetic projects.
- **Technology Integration:** Develop capacity for implementing **IoT-enabled solutions** in sync with local needs.
- **Performance Monitoring:** Implement a robust system for real-time monitoring of project progress, timelines, and impact.
- **Capacity Building:** Train ULB officials and SPV teams in project planning, execution, and citizen engagement.
- The **Smart Cities Mission**, while ambitious, highlights the gap between policy aspirations and ground realities. A re-evaluation of governance models, funding strategies, and citizen engagement is crucial to transforming these urban centers into truly "smart" cities.

NATIONAL CRITICAL MINERALS MISSION

Relevance for Exam:

- **Prelims and Mains:** What is the National Critical Minerals Mission?, Objectives, Key Features, Government's Recent Initiatives in Critical Minerals, Challenges in Implementing NCMM, Way Forward, Conclusion.

Why in the News?

- The **Union Cabinet** approved the **National Critical Minerals Mission (NCMM)** with an outlay of **₹16,300 crore** and an expected investment of **₹18,000 crore** from PSUs and private sector entities.
- The **2024-25 Union Budget** had announced the setting up of NCMM to **secure India's critical mineral supply chain**.

What is the National Critical Minerals Mission?

- Critical minerals are minerals that are essential for **clean energy technologies and manufacturing**.
- **Examples:** Lithium, nickel, cobalt, Rare earth elements, Gallium and germanium.
- The mission aims to **reduce dependence on imports, boost domestic and overseas mineral exploration, and support green technologies** as part of **Atmanirbhar Bharat**.
- Essential for **high-tech industries, clean energy transition, electric vehicles (EVs), semiconductors, defense, and telecommunications**.
- India imports over 80% of its critical minerals, making domestic production crucial for energy security.

Objectives:

- **Enhance Domestic Exploration:**
 - o **Intensify exploration of critical minerals within India and offshore areas.**
 - o Increase mining activities through a **fast-track regulatory approval process**.
- **Strengthen Critical Mineral Supply Chains:**
 - o Promote **financial incentives** for mineral exploration.
 - o Encourage **public & private sector** participation in mining projects.
 - o Establish **stockpiles** of critical minerals for strategic needs.
- **Boost Processing, Recycling & Research:**
 - o Develop mineral processing parks and promote **recycling technologies**.
 - o Set up **Centres of Excellence on Critical Minerals**.
 - o Support **R&D in advanced extraction and refining technologies**.
- **Global Collaborations & Acquisition of Mineral Assets:**
 - o Facilitate **acquisition of overseas critical mineral assets** by PSUs and private entities.

- Enhance trade with resource-rich nations to diversify supply sources.

Key Features:

- **Covers all stages of the mineral value chain:**
 - Exploration → Mining → Beneficiation → Processing → Recycling.
- Fast-track **regulatory approvals** for critical mineral projects.
- Establish **mineral processing parks** to reduce reliance on imports.
- Support for **startups & MSMEs** in critical minerals research via **S&T PRISM program**.

Government's Recent Initiatives in Critical Minerals:

- **2023 Amendments** to the **Mines & Minerals (Development & Regulation) Act, 1957** to boost exploration & mining.
- **24 blocks** of strategic minerals auctioned by the **Ministry of Mines**.
- **Geological Survey of India (GSI) undertook 368 exploration projects** in the past three years:
 - 195 projects in 2024-25.
 - 227 projects planned for 2025-26.
- **KABIL (Khanij Bidesh India Ltd.)** acquired **15,703 hectares** in Argentina for lithium exploration & mining.
- **Customs duties on critical minerals removed** in **Union Budget 2024-25** to encourage domestic processing.

Challenges in Implementing NCMM:

- **High Initial Investment:** Mining and processing facilities require large capital investments.
- **Geopolitical Risks:** India's dependency on **China, Australia, and African nations** for critical minerals poses supply chain risks.
- **Environmental Concerns:** Mining activities could lead to deforestation, habitat destruction, and pollution.
- **Technological Limitations:** India lags in advanced mineral extraction and refining technologies compared to **China and Western nations**.

Way Forward:

- **Enhance Domestic Production:** Fast-track mining projects and increase R&D investments.
- **Global Partnerships:** Collaborate with **Australia, Argentina, Canada, and African nations** for mineral security.
- **Sustainable Mining Practices:** Implement **eco-friendly technologies** to minimize environmental damage.
- **Skill Development:** Train professionals in **critical mineral exploration, extraction, and processing**.

Conclusion:

- The **National Critical Minerals Mission** is a crucial step toward securing India's mineral supply chain and achieving self-reliance in critical sectors. Strengthening domestic capabilities, forming global partnerships, and investing in R&D will ensure India's long-term energy security and technological leadership in the global economy.

PRAGATI

Why in the News?

- The Pro-Active Governance and Timely Implementation (PRAGATI) platform, launched under the **Digital India Initiative**, has been lauded by an **Oxford University study** for its significant role in **fast-tracking infrastructure projects**. It has facilitated the execution of **340 critical projects** worth ₹17.05 lakh crore (\$205 billion), catalyzing **economic growth** and **inclusive development** in India since its inception in 2015.

About PRAGATI:

- **Objective:**
 - Enhance **proactive governance** and ensure the **timely implementation** of public projects, government programs, and grievance redressal mechanisms.
- **Core Functions:**
 - **Grievance Redressal:** Addresses grievances of citizens effectively.
 - **Programme Implementation:** Monitors and reviews central and state government programs.
 - **Project Monitoring:** Tracks critical infrastructure projects to resolve bottlenecks and ensure efficient execution.

Unique Features of PRAGATI:

- **Integration of Technologies:**
 - Combines **digital data management**, **video conferencing**, and **geo-spatial technology** for real-time project monitoring.
 - Enables stakeholders to address grievances and project delays simultaneously.
- **Cooperative Federalism:**
 - Brings together **Central Government Secretaries**, **State Chief Secretaries**, and the **Prime Minister** on a single platform, fostering collaboration between the Centre and States.
- **Three-Tier System:**
 - Involves the **PMO**, **Union Secretaries**, and **State Chief Secretaries** to ensure accountability at all levels.

Impact of PRAGATI:

- **Economic Gains:**
 - Accelerated **340 major projects**, boosting sectors like **roads**, **railways**, **power**, and **urban development**.
 - For every ₹1 spent on infrastructure under PRAGATI, it generates ₹2.5-₹3.5 in **GDP contribution**.
- **Social Transformation:**
 - Fast-tracked **health**, **education**, and **energy projects**, enhancing the **quality of life** for millions of citizens.
 - Addressed **public grievances** on critical issues, including **land acquisition**, **environmental clearances**, and **resettlement concerns**.
- **Sustainability:**
 - Promotes the use of **green technologies** and ensures alignment with **Sustainable Development Goals (SDGs)** such as **Goal 7 (Clean Energy)** and **Goal 9 (Infrastructure Development)**.
- **Efficiency and Accountability:**
 - Minimizes **bureaucratic inertia** by fostering a **Team India approach**, ensuring faster decision-making and issue resolution.

PM SURYA GHAR MUFT BIJLI YOJANA

Why in the News?

- The Government of India has launched a **landmark central scheme** aimed at providing **free electricity** for **one crore households** by utilizing **rooftop solar installations**.
- This initiative aligns with India's **sustainability**, **energy independence**, and **cost-efficiency goals** while supporting its transition toward clean energy.

Key Features:

- **Free Electricity:**
 - Offers **up to 300 units per month** for eligible households, significantly reducing their financial burden.
- **Subsidy Support:**
 - **60% subsidy** for systems up to **2 kW**.
 - **40% subsidy** for systems between **2-3 kW**, capped at **₹78,000**.
- **Collateral-Free Loans:**
 - Loans available at **Repo Rate + 0.5% interest**, currently around **7%**, providing affordable financing for beneficiaries.
- **Savings:**
 - Households can save approximately **₹15,000** annually with a **3 kW solar system** installed.

Eligibility:

- **Indian citizens** owning homes with **suitable rooftops** for solar installations.
- Must have a valid **electricity connection**.
- Households that have **not availed** prior subsidies for solar installations are eligible.

Achievements and Milestones:

- **Registrations and Installations:**
 - Over **1.45 crore registrations** and **14.84 lakh applications** have been received.
 - **6.34 lakh** rooftop systems were installed by mid-2024.
- **Solar Capacity Expansion:**
 - Expected to add **30 GW** of residential **solar capacity**, significantly contributing to renewable energy goals.
- **Environmental Impact:**
 - Projected to reduce **720 million tonnes of CO₂ emissions** over 25 years.
 - Expected to generate **1,000 billion units (BUs)** of electricity during system lifetimes.
- **Job Creation:**
 - Estimated to create **17 lakh direct jobs** across manufacturing, logistics, installation, operations, and maintenance.

What are Model Solar Villages?

- This initiative aims to establish **one solar-powered village per district** to promote rural energy **self-reliance** and set an example for broader adoption.
- **Key Features:**
 - **₹800 crore allocated**, providing **₹1 crore per village** achieving the highest renewable energy capacity.
 - Villages are selected through a **competitive process** and evaluated six months post-identification.
 - Implementation is overseen by **State/UT Renewable Energy Development Agencies** under **District-Level Committees (DLCs)**.

- **Benefits:**

- Promotes **community energy independence**.
- Acts as a **model** for widespread solar adoption across rural regions.
- Encourages **sustainability** and significantly reduces **carbon emissions**.

Challenges:

- **Low Awareness:**

- Limited knowledge about the scheme, especially in rural areas, slows adoption.

- **Slow Processes:**

- Delays in **approvals** and **subsidy disbursements** hinder progress.

- **Integration Issues:**

- **DISCOMs** face challenges managing surplus power generated by rooftop systems.

- **Vendor Gaps:**

- Fewer vendors in remote areas restrict installation opportunities.

- **Financing Barriers:**

- Households face difficulties accessing loans due to a lack of financial literacy.

- **Maintenance Issues:**

- Post-installation support is often inadequate, especially in rural regions.

JALVAHAK SCHEME

Why in the News?

- The **Central Government** launched the **Jalvahak Scheme** to incentivize long-haul cargo movement via **National Waterways (NWs)**. This initiative aims to make inland waterways a sustainable, efficient, and economical alternative for logistics in India.

What is the Jalvahak Scheme?

- Launched by the **Ministry of Ports, Shipping & Waterways (MoPSW)** to promote cargo movement on:
 - **NW-1 (Ganga River)**.
 - **NW-2 (Brahmaputra River)**.
 - **NW-16 (Barak River)**.
- Encourages trade through waterways with a **35% reimbursement on operating costs**.

Key Features:

- **Scheduled Sailing Services:**

- Fixed schedules for vessels ensure timely cargo delivery.

- **Incentives:**

- Reimbursement of **up to 35%** of operational expenses for cargo owners and vessel operators.

- **Economic Focus:**

- Targets industries like cement, gypsum, coal, and bulk cargo to leverage waterways.

- The scheme is valid for **three years**.

- **Collaborating Agencies:**

- **Inland Waterways Authority of India (IWAI)**: Nodal agency for waterways development.

- **Inland & Coastal Shipping Limited (ICSL)** a **fully owned subsidiary of the Shipping Corporation of India Limited (SCIL)**: Operates vessels under the scheme.

Objectives of the Jalvahak Scheme:

- **Boost Cargo Movement via Waterways:**

- Reduce congestion on railways and roadways.
- Provide a cost-effective logistics alternative.



- **Encourage Modal Shift:**
 - Shift **17% of current cargo** (800 million tonne-km) to waterways by 2027.
 - Expected investment: ₹95.4 crore by 2027.
- **Leverage Blue Economy:**
 - Unlock the potential of inland waterways for economic growth.
 - Promote **ecological sustainability** by reducing carbon emissions.
- **Logistics Optimization:**
 - Create efficient supply chains for shipping companies, freight forwarders, and bulk cargo operators.

Significance of Inland Waterways:

- **India's Inland Waterway Network:**
 - Total navigable length: **20,236 km**, including **17,980 km of rivers** and **2,256 km of canals**.
 - National Waterways are under-utilized compared to global leaders like the USA, China, and EU nations.
- **Sustainable Transport Alternative:**
 - Inland waterways are energy-efficient and eco-friendly.
 - Offer significant cost savings over rail and road logistics.
- **Growth Trends:**
 - Cargo transported via waterways registered a **700% growth**.
 - Target: **200 million tonnes by 2030** and **500 million tonnes by 2047**.

Challenges in Inland Waterways Development:

- **Infrastructure Gaps:**
 - Limited infrastructure like jetties, terminals, and dredging capabilities.
 - Lack of first and last-mile connectivity with rail and road networks.
- **Seasonal Navigation Issues:**
 - River navigability fluctuates with seasonal changes, affecting year-round operations.
- **Low Adoption Rate:**
 - Industries still prefer traditional rail and road transport due to familiarity and established networks.

SOVEREIGN GOLD BOND SCHEME

Why in the News?

- The government is considering discontinuing the Sovereign Gold Bond (SGB) Scheme due to **high financing costs and reduced demand**, as the 2024-25 Budget cut import duties on gold.

What is the Sovereign Gold Bond Scheme?

- Government-issued securities **representing 1 gram of gold per bond**, aimed at reducing reliance on physical gold purchases.
- **Key Features:**
 - **Tenure:** Eight years, with an early redemption option after five years.
 - **Interest Rate:** 2.5% per annum, paid semi-annually.
 - **Market Linkage:** Redemption price tied to the average market value of gold.
 - **Tradability:** Bonds are tradable in the secondary market.
 - **Tax Benefits:** Capital gains on redemption are exempt from tax.

Why was SGB introduced?

- Reduce gold imports to address the current account deficit.

- Provide citizens with a safer and more profitable alternative to physical gold.
- Promote financial investments and curb excessive reliance on non-productive assets.

Benefits of the SGB Scheme:

- **Storage and Security:** No risks or costs associated with storing physical gold.
- **Fixed Returns:** Provides a steady 2.5% interest along with potential market-linked capital appreciation.
- **Flexibility:** Investors can redeem after five years or trade bonds in the secondary market.
- **Liquidity:** Unlike physical gold, SGBs offer easier liquidity options.
- **Hedging Against Inflation:** Tracks the value of gold, serving as a hedge during economic uncertainty.

Challenges faced by SGBs:

- **High Fiscal Costs:** The government incurs substantial costs for interest payouts and redemption.
- **Reduced Demand:** Lowered gold import duties (from 15% to 6%) reignited demand for physical gold, lessening the need for SGBs.
- **Limited Issuances:** Annual tranches have reduced from 10 to 2 in recent years.
- **Investment-Oriented:** SGBs are now seen more as investment tools rather than strategic instruments to manage gold imports.

Performance of SGBs:

- **Strong Returns:** Bonds issued in 2016 yielded a 126% return over their eight-year tenure.

Future Considerations:

- **Policy Review:** Evaluate whether SGBs remain relevant for managing gold imports and fiscal sustainability.
- **Cost Optimization:** Reduce administrative and interest costs to enhance fiscal efficiency.
- **Alternatives:** Promote exchange-traded funds (ETFs) and other investment instruments as viable gold-linked options.



NATIONAL CLEAN AIR PROGRAMME (NCAP)

Relevance for Exam:

- **Prelims and Mains:** What is the National Clean Air Programme (NCAP), Key Interventions under NCAP, Key Data Points.

Why in the news?

- Delhi ranks among the bottom five cities in fund utilization under the NCAP, using only 32% of allocated funds.

What is the NCAP?

- **Objective:** A MoEFCC initiative launched in 2019 to reduce air pollution in Indian cities.
- **Targets:**
 - Achieve a **40% reduction in PM10 levels by 2025-26** or meet National Ambient Air Quality Standards (NAAQS).
 - Prioritize 132 cities, especially 19 non-attainment cities that failed NAAQS between 2011 and 2015.
 - Conduct Source Apportionment Studies to target pollution sources effectively.

Key Interventions under NCAP:

- **Dust Control Measures:** Use of road sweepers and water sprinklers.
- **Source-Specific Actions:** Target emissions from transport, industry, and construction.
- **Public Awareness and Capacity Building:** Educate the public on pollution and governance improvements.

Key Data Points:

- **Fund Utilization:** Delhi used only 32% of NCAP funds, with 68% remaining unused.
- **Top Performing Cities:** Amritsar (99%), Jhansi (98%), Pune (96%), Jharkhand (94%), and Navi Mumbai (92%).
- **Delhi's Pollution Sources:**
 - PM10 Sources: 17.5-30.6% from soil, road dust, and construction; 12-37% from coal and fly ash.
 - Other Primary Contributors: Road dust, vehicular emissions, and industry.

PM-VIDYALAXMI SCHEME

Relevance for Exam:

- **Prelims:** What is the PM-Vidyalaxmi Scheme?, Eligibility, Loan Amount and Credit Guarantee, Funding and Reach, Supplementary Schemes.

Why in the news?

- The Union Cabinet approved the **PM-Vidyalaxmi scheme**, a landmark initiative aimed at supporting **meritorious students** by providing them with **accessible and affordable education loans**. The scheme aligns with the government's commitment to **expanding higher education** access across socio-economic backgrounds.

What is the PM-Vidyalaxmi Scheme?

- **Central Sector Scheme:** This scheme is designed to provide **collateral-free** and **guarantor-free** loans to students pursuing higher education, covering both government and private institutions.
- **Alignment with NEP 2020:** The scheme aligns with the **National Education Policy (NEP) 2020**, which emphasizes **equitable and inclusive access** to quality higher education.

Eligibility:

- **Institutions Covered:** Students admitted to the **top 860 Quality Higher Education Institutions (QHEIs)** ranked by the **National Institutional Ranking Framework (NIRF)** are eligible, promoting high academic standards.
- **Scope of Expenses:** The scheme covers **tuition fees**, accommodation, **study materials**, and other course-related expenses, easing the financial burden on students.

Loan Amount and Credit Guarantee:

- **Loan up to ₹7.5 lakh:** Loans are eligible for a **75% credit guarantee** by the Government of India, reducing the risk for banks and facilitating easier access to loans.
- **Interest Subvention:** Students from families with an income up to ₹8 lakh, not availing any other scholarship or subsidy, can receive a **3% interest subsidy** on loans up to ₹10 lakh during the moratorium period.

Funding and Reach:

- **Total Outlay:** The scheme has an allocation of ₹3,600 crore from **2024-25 to 2030-31**.
- **Expected Beneficiaries:** It aims to benefit **22 lakh students** across India, with around **7 lakh new students** estimated to benefit each year.

Supplementary Schemes:

- **PM-USP (PM Unique Scholarship Program):** This program provides full interest subvention for students from families with an income of up to ₹4.5 lakh, covering loans of up to ₹10 lakh for **technical and professional courses**.

INNOVATIONS FOR DEFENCE EXCELLENCE (iDEX) INITIATIVE

Relevance for Exam:

- Prelims: What is the iDEX Initiative?, Objectives of iDEX, Details related to the Scheme.

Why in the news?

- Recently, an **autonomous surface vessel** developed by **Sagar Defence Engineering** completed a 1,500-km journey from Mumbai to Thoothukudi **without human intervention**. This achievement, facilitated by the **Indian Navy's iDEX initiative**, showcases India's advancements in autonomous defence technology.

What is the iDEX Initiative?

- **Launched by the Ministry of Defence (MoD):** The iDEX initiative aims to promote **indigenous innovations** in defence and aerospace technology, fostering a self-reliant defence ecosystem in India.

Objectives of iDEX:

- **Promote Self-Reliance (Aatmanirbharta):** By developing indigenous solutions, iDEX seeks to reduce India's dependence on foreign defence technology.

- **Collaborative Engagement:** The initiative encourages partnerships among **industries, research organizations, academic institutions**, and the government to foster an **innovation-driven defence ecosystem**.

Scheme Details:

- **Support for Startups and MSMEs:** iDEX provides funding and mentorship to startups, encouraging them to develop defence technologies and enabling smaller firms to contribute to India's defence sector.
- **Enhancing National Security:** By advancing indigenous R&D and manufacturing capabilities, iDEX plays a crucial role in improving the **Indian Armed Forces' operational efficiency** in areas like coastal surveillance and anti-piracy efforts.

ATAL INNOVATION MISSION 2.0

Relevance for Exam:

- **Prelims and Mains:** What is AIM?, Objectives of AIM, Enhancements in AIM 2.0, Key Data Points, Achievements of AIM so far, Impact of AIM.

Why in the News?

- The Union Cabinet has approved the continuation of the **Atal Innovation Mission (AIM)**, implemented by **NITI Aayog**, for its second phase.
- This initiative has been allocated **₹2,750 crore** for the next phase, extending till **March 31, 2028**, with a focus on strengthening India's global innovation capabilities.

What is AIM?

- The **Atal Innovation Mission (AIM)** is a flagship initiative launched by **NITI Aayog** in 2016.
- It aims to foster a culture of **innovation** and **entrepreneurship** across India, addressing key gaps in the innovation ecosystem.

Objectives of AIM:

- **Promote Innovation:**
 - Encourage innovation at the grassroots level, from **schools** to **startups** and **industries**.
 - Provide infrastructure and platforms for ideation, research, and development.
- **Build Ecosystems:**
 - Establish a robust innovation ecosystem through collaboration between **academia, industries, and government agencies**.
- **Support Startups:**
 - Develop an environment conducive to **entrepreneurship** by addressing funding gaps, scalability challenges, and mentorship.
- **Enhance Global Competitiveness:**
 - Make India a global hub for **innovation** and **technology-led enterprises**.
- **Capacity Building:**
 - Equip young minds with innovation-centric skills through programs like **Atal Tinkering Labs (ATLs)**.

AIM 2.0 Enhancements:

- **Addressing Ecosystem Gaps:**
 - Pilot new initiatives to tackle existing challenges in India's **innovation landscape**, such as inadequate funding and limited mentorship opportunities.
- **Higher Collaboration:**

- Foster stronger collaboration between **industry, academia, and government** to accelerate research and development.
- **Job Creation Focus:**
 - AIM 2.0 emphasizes creating **high-quality jobs** through **innovation-driven programs**, addressing unemployment concerns.

Key Data Points:

- **Allocation:**
 - ₹2,750 crore for the next phase (2023–2028).
- **Achievements of AIM (So Far):**
 - Over **10,000 Atal Tinkering Labs (ATLs)** established in schools across India.
 - Supported more than **100 Atal Incubation Centers (AICs)**, facilitating startups and entrepreneurs.
 - Over 200 **startups** supported through AIM initiatives.
 - Established **Atal Community Innovation Centers (ACICs)** to promote inclusive innovation in underserved regions.
- **Impact:**
 - Created a community of over **8 lakh student innovators** through ATLs.
 - Facilitated the development of **1,000+ startups** addressing sectoral challenges in areas like **health, agriculture, and education**.
 - Enhanced India's global standing as an **innovation-driven economy**.

AYUSHMAN BHARAT SCHEME

Relevance for Exam:

- **Prelims and Mains:** Features of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY), Benefits and Coverage, Funding Model, Expansion Plans, Challenges and Way Forward.

Why in the News?

- The Delhi Government announced its readiness to implement the **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY)** in the national capital, signaling a significant step toward expanding healthcare access for vulnerable populations.

What is Ayushman Bharat PM-JAY?

- **Largest Government-Financed Health Insurance Scheme:**
 - Aims to cover over **55 crore people**, representing approximately **40% of India's population**.
 - Provides **₹5 lakh annual health insurance** for secondary and tertiary care services at public and private empanelled hospitals.
- **Targeted Beneficiaries:**
 - Focuses on poor and vulnerable families identified using **Socio-Economic Caste Census (SECC) data**.
- **Nationwide Portability:**
 - Beneficiaries can access healthcare services at any empanelled hospital across India, ensuring portability for migrants and travelers.

Key Features and Benefits:

- **Cashless Healthcare:**
 - Beneficiaries avail of **cashless treatment** at the point of care, significantly reducing out-of-pocket expenses for medical emergencies.
- **Comprehensive Coverage:**
 - Covers **pre-existing diseases** from the day of enrollment.

- o Includes **3 days of pre-hospitalization** and **15 days of post-hospitalization** services, including diagnostics and medications.
- **Inclusive Framework:**
 - o No restrictions on **family size, age, or gender**, ensuring widespread accessibility.
- **Equal Reimbursement:**
 - o Both public and private hospitals receive equitable reimbursement for services, bridging gaps in healthcare delivery across sectors.

Funding Model:

- **Central-State Partnership:**
 - o Jointly funded by the **central and state governments**, with a **60:40 split** in most states.
 - o For **Northeastern states, Jammu & Kashmir, Himachal Pradesh, and Uttarakhand**, the split is **90:10**.
 - o **100% central funding** for Union Territories without legislatures.
- **Transparent Financial Allocation:**
 - o Designed to ensure the financial sustainability of both the central and state contributions, balancing efficiency with equity.

PM-JAY in Numbers:

- **Hospital Admissions:**
 - o **6.11 crore hospital admissions** authorized since inception, with expenses exceeding **₹78,188 crore**.
 - o In 2023 alone, **1.7 crore admissions** worth **₹25,000 crore** were processed.
- **Ayushman Cards:**
 - o Approximately **28.45 crore Ayushman cards** issued, including **9.38 crore in 2023**.
- **Women's Participation:**
 - o Women account for **49% of Ayushman cards** and **48% of hospital admissions**, indicating equitable healthcare access.

Expansion Plans:

- **Senior Citizens' Inclusion:**
 - o The Union Cabinet approved the extension of Ayushman Bharat to cover **senior citizens aged 70+**.
 - o Offers **free ₹5 lakh health insurance** irrespective of income, benefiting **6 crore senior citizens** from **4.5 crore families**.
- **Focus on Urban Areas:**
 - o Encouraging states like Delhi to join ensures improved urban healthcare access under PM-JAY.
- **Strengthening Infrastructure:**
 - o Empanel more private hospitals to improve accessibility and reduce service delivery bottlenecks.

Challenges in Implementation:

- **Awareness Gaps:**
 - o Many eligible beneficiaries remain unaware of the scheme's provisions, particularly in rural and underserved areas.
- **Under-Utilization:**
 - o Despite its comprehensive coverage, the scheme has seen underutilization in certain regions due to a lack of hospital empanelment.
- **Fraudulent Claims:**
 - o Cases of misuse and inflated claims by some private hospitals undermine the scheme's integrity.

- **Financial Sustainability:**
 - Ensuring sustained funding amidst rising healthcare costs remains a key concern for state and central governments.

Way Forward:

- **Enhancing Awareness:**
 - Launch targeted awareness campaigns to educate beneficiaries about their entitlements and how to access services.
- **Expanding Empanelment:**
 - Focus on empaneling hospitals in remote and underserved regions to ensure equitable healthcare access.
- **Strengthening Fraud Prevention:**
 - Use **AI-driven analytics** to monitor claims and detect fraudulent practices.
- **Leveraging Technology:**
 - Expand the use of digital platforms to streamline card issuance and hospital admissions.
- **Periodic Reviews:**
 - Conduct regular audits to assess the scheme's financial health and operational efficiency.



RICE FORTIFICATION INITIATIVE

Relevance for Exam:

- **Prelims and Mains:** What is Rice Fortification?, Process of Rice Fortification, Data on Rice Fortification.

Why in the News?

- The Union Cabinet has extended the universal supply of fortified rice under all central government schemes providing free food grains, including the National Food Security Act, 2021, until December 2028. This initiative aims to combat anaemia and micronutrient deficiencies, which are widespread public health concerns in India.

What is Rice Fortification?

- According to the **Food Safety and Standards Authority of India (FSSAI)**, rice fortification involves **deliberately increasing the content of essential micronutrients** in food to improve nutritional quality and provide **public health benefits**.
- **Need for Rice Fortification in India:**
 - India faces high levels of **malnutrition**. As per the **National Family Health Survey (NFHS-5) (2019-2021)**:
 - ◆ Every second woman in India is **anaemic**.
 - ◆ Every third child is **stunted**.
 - Since **rice** is a staple food for **two-thirds of India's population**, fortifying it with micronutrients such as **iron, Vitamin B12, and folic acid** can help address **nutrient deficiencies**.

Process of Rice Fortification:

- Fortification is carried out using methods like **coating, dusting, and extrusion**.
- **Extrusion Technology:**
 - Dry **rice flour** is mixed with a **premix of micronutrients**, water is added, and the mixture is passed through an **extruder machine** to produce **fortified rice kernels (FRKs)**.
 - These FRKs are blended with regular rice at a **10:1 ratio**.
 - The final fortified rice product contains **iron, folic acid, and Vitamin B12**. Additional nutrients such as **zinc, Vitamin A, and B-complex vitamins** may also be included.

Data on Rice Fortification:

- **The initiative was announced in 2015 and has been implemented in phases starting from April 2022:**
 - **Phase 1:** By March 2022, fortified rice was supplied under the **Integrated Child Development Services (ICDS)** and **PM POSHAN** schemes.
 - **Phase 2:** By March 2023, fortified rice was supplied through the **Public Distribution System (PDS)** in **112 Aspirational Districts**.
 - **Phase 3:** By March 2024, the program is set to cover all **remaining districts**.
- **Distribution and Production:**
 - Between **2019-2024**, approximately **406 lakh metric tonnes (LMT)** of fortified rice have been distributed through the PDS.
 - There are **925 manufacturers** across India with the capacity to produce **111 LMT** of **fortified rice kernels (FRKs)** annually.
 - Around **21,000 rice mills** across the country blend the fortified kernels with regular rice for distribution.

- **Financial Investments:**

- o The government has invested **₹11,000 crore** in developing the fortified rice supply chain.
- o The **annual cost of fortification** is **₹2,700 crore**.

AYUSHMAN VAYA VANDANA SCHEME

Relevance for Exam:

- **Prelims:** Details related to schemes.

Why in the news?

- The Ayushman Vaya Vandana Scheme, under the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY), now extends to all senior citizens aged 70 and above, irrespective of income level, aiming to alleviate healthcare expenses for elderly individuals.

Ayushman Vaya Vandana Scheme:

- **Purpose:** The scheme provides free health coverage to senior citizens, helping alleviate financial burdens associated with medical expenses.
- **Eligibility:** Open to all Indian citizens aged 70 and above, with no income restrictions. There are approximately 6 crore senior citizens aged 70 or above across about 4.5 crore families in India.
- **Benefits:** Offers hospital coverage of up to ₹5 lakh per year for eligible beneficiaries.
- **Ease of Access:** Beneficiaries receive an Ayushman Vaya Vandana Card for cashless treatments at empaneled hospitals.
- **Financial Relief:** Aims to reduce out-of-pocket healthcare expenses for the elderly.
- **Importance:** The scheme promotes financial relief, universal accessibility, reduced family burdens, and support for healthy aging.



DIGITAL AGRICULTURE MISSION

Relevance for Exam:

- **Prelims and Mains:** Understanding the Digital Agriculture Mission, its components, significance, challenges, and potential impact on the agricultural sector.

Why in the News?

- The Union Cabinet recently approved the **Rs 2,817-crore Digital Agriculture Mission** aimed at creating a robust Digital Public Infrastructure (DPI) in the agriculture sector.
- This initiative is expected to **revolutionize the way agricultural data and information are managed**, benefiting individual farmers and the broader farm economy.

What is the Digital Agriculture Mission?

- The Digital Agriculture Mission is a government initiative to develop **Digital Public Infrastructure (DPI) in the agriculture sector**, similar to other e-governance initiatives like Aadhaar, UPI, and DigiLocker.
- The mission aims to **create a digital ecosystem that integrates various data and information related to farm lands, crops, and yields**, thereby improving access to services for farmers and enhancing the overall efficiency of the farm sector.

Key Components of the Mission:

- **AgriStack:**
 - A farmer-centric DPI that includes three foundational registries: **Farmers' Registry, Georeferenced Village Maps, and Crop Sown Registry**.
 - Farmers will receive a digital identity ('Farmer ID') linked to land records, crops, livestock, and more, enabling easier access to government services.
- **Krishi Decision Support System (DSS):**
 - A **geospatial system** unifying remote sensing data on crops, soil, weather, and water resources.
 - It supports crop map generation, drought/flood monitoring, and yield assessment for crop insurance.
- **Soil Profile Maps:**
 - Detailed soil maps on a 1:10,000 scale covering 142 million hectares of agricultural land.
 - A detailed inventory of 29 million hectares has already been completed.
- **Digital General Crop Estimation Survey (DGCES):**
 - A **digital system to improve crop yield estimation** and make data more robust.
 - It will enhance the accuracy of crop production estimates and support efficient implementation of schemes like MSP-based procurement, crop insurance, and credit-linked crop loans.

Funding for the Mission:

- The total budget allocation for the Digital Agriculture Mission is Rs 2,817 crore, with **Rs 1,940 crore provided by the Central Government** and the **remainder by states and Union Territories (UTs)**.
- Additional Rs 5,000 crore has been earmarked for states to create the Farmers' Registry under the Scheme for Special Assistance to States for Capital Investment, 2024-25.

Impact on Farmers and the Farm Sector:

- **Efficiency:** The mission will streamline the process of accessing government services, reducing paperwork and the need for physical visits, thus saving time and effort for farmers.

- **Transparency:** Improved data accuracy will lead to more transparent and efficient implementation of schemes such as MSP procurement, crop insurance, and credit-linked loans, minimizing fraud and errors.
- **Data-Driven Decision-Making:** Farmers will have access to better decision-making tools based on accurate data on soil, weather, and crop patterns, leading to optimized farming practices and potentially higher yields.
- **Empowerment:** The creation of a Farmer ID will empower farmers by providing them with a unique digital identity, enabling easier access to subsidies, credit, and other government benefits.
- **Sustainability:** The use of Soil Profile Maps and Krishi DSS will promote sustainable farming practices by enabling precise use of fertilizers, water, and other inputs, reducing environmental impact.
- **Risk Management:** Enhanced data on crop patterns, weather, and soil conditions will enable better risk management for farmers, helping them mitigate the impact of natural disasters and climate change.

Challenges and Issues:

- **Digital Literacy:** A significant challenge will be ensuring that all farmers, especially those in remote and rural areas, have the digital literacy needed to effectively use the digital infrastructure and services provided.
- **Data Privacy and Security:** Protecting the sensitive personal, land, and crop data of millions of farmers from potential misuse or breaches will be critical. Ensuring robust cybersecurity measures is essential.
- **Infrastructure Limitations:** The success of the mission depends on the availability of reliable digital infrastructure, including internet connectivity and electricity, particularly in rural and remote regions where access may be limited..
- **Resistance to Change:** Farmers and local agricultural bodies may resist adopting new digital methods and technologies due to unfamiliarity, skepticism, or cultural factors.
- **Data Accuracy:** Ensuring the accuracy and reliability of the data collected and used by the digital systems, such as crop surveys and soil profiles, is crucial to avoid misinformed decisions and potential negative impacts on farmers.
- **Cost and Resource Allocation:** Managing the financial and human resources required to develop and maintain the digital infrastructure over time, especially in a vast and diverse country like India, could be challenging.

Some Notable International Examples:

- **Estonia's e-Agriculture:** Estonia has successfully implemented a digital agriculture platform that integrates various agricultural services, enhancing efficiency and transparency in the sector.
- **Netherlands' Precision Farming:** The Netherlands uses digital tools and data analytics to optimize agricultural practices, leading to higher yields and better resource management.

Way Ahead:

- **Capacity Building:** Invest in comprehensive digital literacy programs for farmers, including training sessions, workshops, and the use of local languages, to ensure that they can fully utilize the digital infrastructure and services.
- **Strengthening Data Security Measures:** Implement robust data protection frameworks, including encryption and access controls, to safeguard farmers' information and build trust in the digital systems.
- **Infrastructure Development:** Accelerate the development of digital infrastructure, such as high-speed internet and reliable electricity, in rural and remote areas to ensure that all farmers can access and benefit from the mission.
- **Promoting Public-Private Partnerships (PPPs):** Encourage collaboration between the government, private sector, and technology companies to bring in expertise, innovation, and investment in the development and maintenance of digital platforms.
- **Continuous Monitoring and Evaluation:** Establish mechanisms for continuous monitoring and evaluation of the mission's progress, including regular assessments of its impact on farmers' livelihoods and

- **Learning from International Best Practices:** Study successful digital agriculture models from other countries and adapt the best practices to the Indian context, ensuring that the mission is both innovative and locally relevant.

Conclusion:

- The Digital Agriculture Mission represents a transformative step in modernizing India's agricultural sector by leveraging technology and data. While challenges like digital literacy and data security must be addressed, the mission has the potential to significantly improve the efficiency, transparency, and productivity of Indian agriculture, benefiting millions of farmers and contributing to the overall growth of the sector.

BIO-RIDE SCHEME

Relevance for Exam:

- Prelims and Mains: Bio-RIDE Scheme, its objective and Key Component.

Why in the News?

- The Union Cabinet approved the **Biotechnology Research Innovation and Entrepreneurship Development (Bio-RIDE)** scheme to support cutting-edge research and development in biotechnology, including biomanufacturing and biofoundry.

What is the Bio-RIDE Scheme?

- The **Bio-RIDE** scheme is a unified biotechnology initiative aimed at fostering innovation, promoting bio-entrepreneurship, and strengthening India's global position in biotechnology and biomanufacturing.
- It merges two umbrella schemes under the **Department of Biotechnology (DBT)** and introduces a new component focused on **Biomanufacturing and Biofoundry**.
- The proposed budget for the Bio-RIDE scheme is **Rs. 9,197 crore** during the 15th Finance Commission period (2021-22 to 2025-26).

• Key Components:

- **Biotechnology Research and Development (R&D):**
 - ◆ Grants and incentives for cutting-edge R&D in synthetic biology, biopharmaceuticals, bioenergy, and bioplastics.
- **Industrial & Entrepreneurship Development (I&ED):**
 - ◆ Support for startups through seed funding, incubation, and mentorship to promote bio-entrepreneurship.
- **Biomanufacturing and Biofoundry:**
 - ◆ Focus on sustainable biomanufacturing aligned with India's green goals, fostering innovations in healthcare, agriculture, and bioeconomy.

• Objectives:

- Promote Bio-Entrepreneurship:
- Advance Innovation:
- Industry-Academia Collaboration:
- Sustainable Biomanufacturing:
- Extramural Funding for Researchers:
- Human Resource Development:

Significance of the Bio-RIDE Scheme:

- **Boost to Biotechnology Sector:**
 - The scheme will accelerate research and development in **biotechnology**, advancing India's global competitiveness in fields like biopharmaceuticals, bioenergy, and bioplastics.
- **Promoting Bio-Entrepreneurship:**

- By providing seed funding, incubation, and mentorship, **Bio-RIDE** fosters a thriving ecosystem for startups, encouraging innovation and growth in the bio-economy.
- **Sustainable Development:**
 - The focus on **Biomanufacturing and Biofoundry** promotes environmentally sustainable practices, aligning with India's **green goals** and global climate change mitigation efforts through the **Life-style for Environment (LiFE)** initiative.
- **Industry-Academia Collaboration:**
 - The scheme facilitates partnerships between academic institutions and industries, bridging the gap between research and commercial applications, thus expediting **product development**.
- **Capacity Building and Human Resource Development:**
 - **Bio-RIDE** will help train and support students, researchers, and scientists, enhancing India's **skilled workforce** in biotechnology.
- **Economic Impact:**
 - The scheme aims to contribute significantly to India's target of becoming a **US\$300 billion bioeconomy** by 2030, boosting economic growth through innovation in healthcare, agriculture, and energy.
- **Circular Bioeconomy:**
 - Promoting sustainable biomanufacturing and biofoundry practices contributes to a **circular economy**, focusing on resource efficiency and waste minimization.

Challenges of the Bio-RIDE Scheme:

- **Funding Utilization:** Efficient use of the ₹9,197 crore is essential. Mismanagement or delays could hinder project progress.
- **Industry-Academia Coordination:** Collaboration between academic institutions and industry may face execution challenges due to differing goals and timelines.
- **Skilling and Capacity Building:** Training in advanced biotechnology areas like synthetic biology may take time, and a shortage of skilled professionals could slow progress.
- **Infrastructure Constraints:** Developing biomanufacturing infrastructure requires significant investment and time.
- **Regulatory and Ethical Issues:** Navigating regulations and ethical concerns in biotechnology could slow innovation.

Conclusion:

- The **Bio-RIDE Scheme** holds tremendous potential to accelerate India's biotechnology sector, foster innovation, and promote sustainable biomanufacturing. However, addressing challenges like funding utilization, infrastructure, and human resource development will be crucial for the scheme's success and realizing the vision of a **US\$300 billion bioeconomy** by 2030.

WORLD FOOD INDIA 2024 & FOOD-PROCESSING SECTOR

Relevance for Exam:

- **Prelims and Mains:** Government Initiatives in Food Processing and Global Platforms.

Why in the News?

- Prime Minister Narendra Modi, at the **inauguration of World Food India 2024 in New Delhi**, highlighted the wide-ranging reforms implemented in India's food-processing sector over the past decade.

World Food India 2024:

- **World Food India 2024** is a flagship event organized by the Ministry of Food Processing Industries, Government of India. It **aims to position India as a global hub for food processing and value addition**, attracting investments, promoting innovation, and showcasing India's diverse and vibrant food sector to the world.

- **Key Objectives:**

- Attract Investments: Promote investment opportunities in India's food processing sector.
- **Showcase Indian Products:** Highlight India's food diversity and processing capabilities to global buyers and investors.
- **Foster Global Partnerships:** Facilitate B2B interactions through exhibitions, roundtables, and summits to encourage collaboration between Indian and international businesses.
- **Promote Innovation:** Focus on innovations in food technology, sustainability, and supply chain management to modernize the sector.

What is Food Processing?

- It refers to the **transformation of raw agricultural products**, such as grains, fruits, vegetables, meat, and dairy, into **consumable food products or ingredients**.
- This can involve **cleaning, sorting, grinding, cooking, freezing, fermenting, preserving, packaging, and other methods** to enhance shelf life, safety, and value of the food.
- **Benefits of Food Processing:**
 - **Increased Shelf Life:** Extends product life and reduces waste.
 - **Value Addition:** Enhances raw product value, boosting farmer income.
 - **Food Security:** Prevents spoilage, ensuring food availability.
 - **Employment Generation:** Creates jobs across the supply chain.
 - **Increased Farmer Income:** Higher demand for processed goods benefits farmers.
 - **Reduction of Post-Harvest Losses:** Minimizes food wastage.
 - **Export Potential:** Boosts international market demand and exports.
 - **Convenience for Consumers:** Provides ready-to-eat and packaged food options.

Key Reforms in the Food-Processing Sector:

- **Pradhan Mantri Kisan Sampada Yojana (PMKSY):** Aims to build modern infrastructure, reduce post-harvest losses, and enhance agricultural value.
 - *Sub-schemes:*
 - ◆ **Mega Food Parks:** Clusters with storage, processing, and packaging facilities.
 - ◆ **Cold Chain & Preservation:** Reducing perishability and linking farmers to markets.
 - ◆ **Operation Greens:** Price stabilization for tomatoes, onions, and potatoes (TOP).
- **Production Linked Incentive (PLI) Scheme:** Incentivizes food-processing companies to boost production and exports, focusing on ready-to-eat foods, marine products, and dairy.
- **Formalisation of Micro Food Processing Enterprises (FME):** Upgrades and supports micro food-processing units with financial and technical aid.
- **100% FDI in Food Processing:** Allows full foreign investment to attract global capital and expertise.
- **Food Processing Fund:** Financial assistance for cold chains and food parks.
- **Mega Food Parks Scheme:** State-of-the-art infrastructure for processing, packaging, and storage in clusters.

Challenges faced by Food Processing Industry in India:

- **Inadequate Infrastructure and Fragmented Supply Chain** lead to high post-harvest losses and inefficiencies, reducing farmer returns.
- **Limited access to finance and low technology adoption** hinder small and medium food processing enterprises from modernizing, reducing their efficiency and growth potential.
- **Skill gap and lack of awareness of value addition**, along with **weak market linkages**, reduce productivity, quality, and farmers' access to profitable markets.
- **Complex food safety standards and compliance challenges** for small units hinder smooth operations & branding, and global competition.
- **Poor logistics** cause wastage during transportation.



Committees Recommendations for Promotion of Food Industry:

- **Harsimrat Kaur Badal Committee (2019):** Focused on mega food parks, cold chains, and integrating farmers.
- **Niti Aayog (2017):** Advocated value addition, cold chain infrastructure, and market access to boost farmer income.
- **Proposed National Food Processing Policy:** Proposed innovation, investment, tax benefits, and streamlined regulations.

Way Forward:

- **Infrastructure Development:** Invest in cold chains, storage, and transportation to reduce post-harvest losses and **address the inadequate infrastructure** that currently leads to wastage of perishable goods.
- **Streamlining Supply Chains:** **Integrate** the fragmented supply chain by reducing intermediaries, improving efficiency, and ensuring higher returns for farmers, thus addressing the **fragmented supply chain** issues.
- **Ease of Doing Business:** Simplify **regulatory frameworks**, ensure **single-window clearances**, and reduce compliance burdens for food processing units.
- **Technology Adoption:** Promote **modern processing technologies** and automation to enhance efficiency and quality control for promoting circular food processing economy (eg. **irradiation**, plant based proteins and

Conclusion:

- India's comprehensive reforms in the food-processing sector, backed by initiatives like PMKSY, PLI, and global platforms like World Food India, reflect the country's commitment to transforming its agricultural landscape and ensuring a sustainable, innovative, and inclusive food ecosystem.



MGNREGA SCHEME

Relevance for Exam:

- **Prelims:** What is the MGNREGA Scheme?, Key Features, Implementation Issues.

Why in the News?

- The Only ₹90,000 has been released in the financial year 2023-24 as an allowance for workers who are not provided jobs under the Mahatma Gandhi National Rural Employment Guarantee (MGNREGA) Scheme.
-

What is the MGNREGA Scheme?

- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), enacted in 2005, provides a **legal guarantee of 100 days of wage employment** to adult members of rural households who demand work and are willing to engage in unskilled manual labor.
- The **Ministry of Rural Development** is responsible for policy formulation and monitoring of the scheme.

Key Features:

- **Employment Guarantee:** Ensures 100 days of wage employment per financial year to rural households.
- **Women Participation:** At least one-third of the beneficiaries must be women.
- **Unemployment Allowance:** Section 7(1) of the Act mandates that if an applicant is **not provided employment within 15 days** of their application, they are entitled to a daily unemployment allowance.
- **State Responsibility:** States are responsible for meeting the cost of the unemployment allowance.
- **Allowance Rates:** The allowance should be one-fourth of the wage rate for the first 30 days and half of the wage rate for the remaining period of the financial year.

Implementation Issues:

- Despite the robust framework of MGNREGA, the release of only ₹90,000 in 2023-24 as an unemployment allowance indicates substantial implementation gaps.
 - **Limited Payment:** In the fiscal years 2022-23 and 2023-24, only six states managed to pay the unemployment allowance, reflecting inadequate adherence to the scheme's mandates.
 - **Insufficient Funding:** The minimal amount released suggests that many eligible workers are not receiving their rightful compensation, undermining the scheme's objective of providing a safety net for rural laborers.
 - **Monitoring and Accountability:** There appears to be a lack of effective monitoring and accountability mechanisms to ensure that states fulfill their responsibilities under the Act.

Way Forward:

- To address these issues and strengthen the implementation of the MGNREGA Scheme, several steps can be taken:
 - **Enhanced Monitoring:** Strengthen the monitoring mechanisms at both the central and state levels to ensure compliance with the provisions of MGNREGA.
 - **Timely Payments:** Ensure timely release of funds for unemployment allowances and wages to build trust and reliability in the scheme.
 - **Capacity Building:** Train local administrative bodies and officials to efficiently manage and implement the scheme.



- **Transparency and Accountability:** Increase transparency through regular audits and public disclosure of fund allocation and usage.
- **Community Participation:** Encourage community participation in monitoring the scheme's implementation to ensure accountability and address grievances effectively.
- **Policy Reforms:** Review and reform policies to simplify the process of applying for and receiving unemployment allowances.

Conclusion:

- The MGNREGA Scheme is a crucial instrument for providing social security and employment to rural households in India. However, the release of only ₹90,000 as an allowance in 2023-24 underscores significant challenges in its implementation. Addressing these issues through enhanced monitoring, timely payments, capacity building, and increased transparency can ensure that the scheme fulfills its intended purpose of providing a robust safety net for rural laborers.

PRADHAN MANTRI MUDRA YOJANA

Relevance for Exam:

- **Prelims:** What is Mudra scheme, details related to Non-performing assets in the scheme.

Why in the News?

- Non-performing assets (NPA) associated with Mudra loans given out by public sector banks have come down in the current financial year.

What is PM Mudra Yojana?

- The Pradhan Mantri Mudra Yojana (PMMY) was launched by the Central Government in 2015. The scheme aims to provide financial support to micro and small enterprises by offering loans up to ₹20 lakh.

Key Features of PM Mudra Yojana:

- **Eligibility:** Any Indian citizen with a business plan for a non-farm income-generating activity.
- **Loan Categories:**
 - **Shishu:** Loans up to ₹50,000.
 - **Kishore:** Loans from ₹50,000 to ₹5 lakh.
 - **Tarun:** Loans from ₹5,00,000 to ₹20 lakh.
- The TARUN category loan limit has been doubled from ₹10 lakh to ₹20 lakh for those who have repaid their previous loans under the TARUN category.

Benefits of the Scheme:

- **Collateral-free loans:** Borrowers are not required to provide any security or collateral.
- **Lower interest rates:** Competitive interest rates to ease financial burden.
- **Flexible repayment terms:** Customizable repayment schedules to suit the cash flow of businesses.
- **Special focus:** Providing loans to Scheduled Caste (SC), Scheduled Tribe (ST), and women entrepreneurs.

Decline in NPAs:

- The NPAs on Mudra loans have declined to 3.4% in 2023-24 from 4.77% in 2020-21. This indicates better financial health and recovery of loans, showcasing the scheme's effectiveness.
- **Implications of the Decline in NPAs:**
- **Increased Confidence:** A reduction in NPAs boosts the confidence of financial institutions in extending credit to small businesses.



- **Economic Growth:** Lower NPAs contribute to the overall stability of the banking sector, promoting economic growth.
- **Increased Lending:** With reduced NPAs, banks have more funds available to extend further credit, encouraging more entrepreneurship and business growth.

Way Forward:

- **Enhanced Monitoring:** Continuous monitoring and evaluation of Mudra loans to ensure timely repayment and prevent future NPAs.
- **Financial Literacy:** Promoting financial literacy among beneficiaries to ensure they utilize loans effectively and maintain good credit health.
- **Support Systems:** Strengthening support systems, such as business training and mentorship, to help small entrepreneurs succeed.
- **Inclusivity:** Further promoting inclusivity by reaching out to marginalized sections and ensuring they benefit from the scheme.
- By fostering a robust ecosystem for micro and small enterprises, the Pradhan Mantri Mudra Yojana is poised to contribute significantly to India's economic growth and development.

CLEAN PLANT PROGRAMME

Relevance for Exam:

- **Prelims and Mains:** Clean Plant Programme for Horticulture, Farmer's welfare, challenges in development of horticulture, and its potential.

Why in the news?

- Centre's Clean Plant Programme (CPP): An initiative by the Government of India, approved by the Union Cabinet, aimed at boosting the production and quality of **horticulture crops**, particularly fruits.

What is CPP?

- The programme is designed to provide **virus-free, high-quality planting material to farmers**, thereby increasing crop yields and improving income opportunities.

Key Components:

- **Development of Clean Plant Centers (CPCs):**
 - Nine CPCs will be established to provide disease diagnostics, therapeutics, and the production of mother plants. These centers will quarantine domestic and imported planting materials to ensure they are disease-free.
- **Enhancement of Infrastructure:**
 - The programme will develop large-scale nurseries to multiply the mother plants obtained from the CPCs. These nurseries will distribute the clean planting material to farmers, ensuring widespread access.
- **Regulatory and Certification Processes:**
 - A regulatory framework will be established to ensure accountability and traceability in the production and sale of planting material, ensuring that farmers receive genuine and high-quality products.

Objectives of the Clean Plant Programme:

Desired Results:

- **Increased Horticulture Production:**
 - The programme is expected to significantly increase the production of horticulture crops, contributing to the overall agricultural output of the country.

- **Higher Quality and Export Potential:**

- By improving the quality of fruit crops, India can enhance its export potential, potentially increasing foreign exchange earnings.

- **Economic Benefits for Farmers:**

- With access to superior planting materials, farmers are likely to see higher yields and better-quality produce, leading to increased incomes and economic stability.

Issues and Challenges for the Development of Horticulture:

- **Fragmented Landholdings:**

- A large number of farmers in India (**85% small and marginal farmers, Agricultural Survey**) operate on small and fragmented landholdings, which limits economies of scale and the adoption of modern farming techniques.

- **Inadequate Infrastructure:**

- The lack of adequate **cold storage** facilities, **transportation**, and **supply chain infrastructure** leads to significant post-harvest losses.
- Approximately, 1/3rd harvest are lost due to inefficient management.

- **Limited Access to Quality Planting Material:**

- Access to high-quality, disease-free planting material is limited, which impacts crop yields and quality.

- **Water Management Issues:**

- Horticulture is a **water-intensive sector**, and many regions in India face water scarcity or inefficient water management.
- World Bank, about **63% of India's cultivated land is rainfed**, while 37% is irrigated

- **Pests and Diseases:**

- Horticultural crops are highly susceptible to pests and diseases, which can significantly reduce yield and quality.

- **Market Access and Price Fluctuations:**

- Poor market linkages and the absence of organized markets for horticulture produce limit farmers' ability to get fair prices.

- **Lack of Skilled Labor and Training:**

- The horticulture sector requires specialized knowledge and skills for activities like grafting, pruning, and post-harvest handling..

- **Climate Change and Environmental Factors:**

- Climate change poses a significant threat to horticulture due to changing weather patterns, increased frequency of extreme weather events, and shifting growing zones.
- Most ominous physiological responses that accrue in response to climate change is the shortened growing period, causing distinctive reduction in production of fruits and vegetables.

- **Credit and Financial Support:**

- Farmers often lack **access to affordable credit** and **insurance**, which limits their ability to invest in better inputs and technology.
- **High-interest rates**, complicated **loan processes**, and the lack of **financial literacy** hinder the growth of the horticulture sector.

- **Regulatory and Policy Challenges:**

- There are inconsistencies and gaps in policies related to horticulture, which create barriers for growth and investment.



Other Government Initiatives to Promote Horticulture in India:

- **Mission for Integrated Development of Horticulture (MIDH):**
 - MIDH is the flagship program to promote holistic growth of the horticulture sector.
 - It includes sub-schemes like the **National Horticulture Mission (NHM)**, **Horticulture Mission for North East and Himalayan States (HMNEH)**, **National Bamboo Mission (NBM)**, and others.
 - The scheme offers financial support for the development of nurseries, production of quality planting material, protected cultivation, and post-harvest management.
- **National Horticulture Board (NHB):**
 - NHB was set up to enhance the production and productivity of horticultural crops through area expansion, improving post-harvest infrastructure, and promoting export-oriented production.
 - The board provides subsidies for establishing cold storage units, pack houses, and market intelligence services.
- **Operation Greens:**
 - Launched in 2018, this scheme aims to **stabilize the supply of Tomato, Onion, and Potato (TOP) crops** and ensure their availability throughout the year without price volatility.
 - The scheme focuses on production clusters, processing, and agri-logistics to reduce wastage and ensure steady market supply.
- **Rashtriya Krishi Vikas Yojana (RKVY) – Raftaar:**
 - This is a **broader agricultural development program** under which states have the flexibility to choose schemes, including horticulture, based on their specific needs.
 - It **encourages states to undertake innovation and sustainable agriculture practices**, including investments in horticulture.
- **Paramparagat Krishi Vikas Yojana (PKVY):**
 - This scheme promotes **organic farming** in India, with a focus on **horticultural crops** among others.
 - The scheme supports farmers in transitioning to organic farming practices, which is particularly relevant for horticultural crops like spices, fruits, and vegetables.
- **National Agroforestry Policy:**
 - Introduced in 2014, this policy **promotes the integration of trees and crops on the same land, which includes horticultural crops**.
 - It aims to increase biodiversity, improve soil health, and provide additional income sources for farmers.
- **Pradhan Mantri Krishi Sinchay Yojana (PMKSY):**
 - This scheme aims to **extend the coverage of irrigation and enhance water use efficiency**, benefiting horticultural crops which often require efficient water management.

Conclusion:

The Clean Plant Programme represents a significant step towards modernizing India's horticulture sector by addressing critical challenges related to planting material quality. If implemented effectively, it has the potential to transform the horticulture industry, boost agricultural productivity, and improve the livelihoods of farmers across the country.