







GS SCORE, Second Floor, Metro Tower, 1B, Pusa Road, Karol Bagh, New Delhi - 110005 (Beside Karol Bagh Metro Station Gate No. 8)

**S**8448496262

**n** Issues and Priorities for Agriculture

#### 1. Introduction:

Agriculture is the backbone of India's economy, employing over 50% of the population. However, the sector faces numerous challenges, including low productivity, dependence on monsoons, inadequate infrastructure, and a lack of modern technology. Addressing these issues is crucial for ensuring food security, rural development, and the overall economic growth of the country.

#### 2. Expert Opinions:

- Dr. M.S. Swaminathan (Agricultural Scientist): Dr. Swaminathan emphasizes the need for agricultural reforms, stating that a shift towards sustainable farming and the use of modern technology are key to addressing the challenges in the sector.
- Dr. Ramesh Chand (Member, NITI Aayog): Dr. Chand advocates for increased investment in irrigation infrastructure and market linkages, asserting that these are fundamental for improving agricultural productivity and reducing farm distress.

#### 3. Key Points:

- Low Productivity: Indian agriculture suffers from low crop yields compared to global standards. This is due to outdated farming practices, lack of access to high-quality seeds, and poor irrigation systems.
- Dependence on Monsoons: The sector remains heavily dependent on rainfall, with over 60% of India's agricultural land being rain-fed, making it vulnerable to climate change and erratic weather patterns.
- Inadequate Infrastructure: Poor storage facilities and transportation infrastructure lead to high post-harvest losses, impacting the income of farmers. The lack of cold chain storage particularly affects perishable goods like fruits and vegetables.

- Agricultural Finance: Small-scale farmers often struggle to access credit, leading to reliance on informal credit sources at high interest rates. The Public Distribution System (PDS) has been insufficient in supporting agriculture at the grassroots level.
- Market Access and Prices: Farmers frequently face issues related to price volatility and poor market access, which reduces their bargaining power. The Minimum Support Price (MSP) system is often inadequate, leaving farmers vulnerable to market fluctuations.
- Environmental Degradation: Overuse of chemical fertilizers and pesticides, coupled with soil degradation, depletes land fertility. Unsustainable farming practices contribute to environmental pollution, affecting long-term agricultural sustainability.

#### 4. Political Aspect:

The political dimension of agricultural policy often revolves around the need for subsidies, loan waivers, and MSP guarantees. While these are essential for short-term relief, political pressures can hinder long-term reforms that address structural issues like market liberalization and better pricing mechanisms. There is also a tendency for political leaders to focus on urban areas, sidelining the real needs of the agricultural sector.

#### 5. Geographical Context:

India's agriculture is regionally diverse, with each state facing unique challenges. For instance, the dryland agriculture in states like Rajasthan and Maharashtra needs better irrigation systems, while rice production in Punjab and Haryana faces problems of water depletion. The geographical disparities in agricultural productivity across India necessitate region-specific solutions.

#### 6. Social Perspective:

 Agriculture is crucial for the livelihoods of rural India, where a significant portion

of the population remains dependent on it. Farmer distress, suicides, and agrarian inequality are pressing social concerns. Additionally, women, who play a key role in agriculture, often face limited access to resources such as land, credit, and technology, resulting in gender disparities in the sector.

#### 7. Examples and Relevant Data:

Example: The Pradhan Mantri Krishi SinchayeeYojana(PMKSY)waslaunched to improve irrigation coverage in the country. Since its inception, it has aimed to provide irrigation to an additional 5 million hectares of farmland. Data: According to the Economic Survey 2023, India's agricultural growth rate has slowed to 2.9%, which is below the desired target of 4% for ensuring food security and increasing farm incomes.

#### 8. Conclusion:

 To address the challenges facing Indian agriculture, there is a pressing need for comprehensive reforms that focus on enhancing productivity, improving market linkages, expanding irrigation facilities, and promoting sustainable farming practices. The government must prioritize these issues to ensure the long-term viability of agriculture and secure the livelihoods of millions of farmers.

#### Agriculture 4.0: The Future of Farming Technology

#### 1. Introduction:

 Agriculture 4.0 marks a technological revolution in the agricultural sector, driven by innovations in automation, big data, artificial intelligence (AI), and the Internet of Things (IoT). This transformation aims to enhance efficiency, sustainability, and productivity in farming. As India faces growing challenges related to food security and climate change, Agriculture 4.0 presents promising solutions to meet these demands.

#### 2. Expert Opinions:

- Dr. M.S. Swaminathan (Agricultural Scientist): Dr. Swaminathan supports the integration of biotechnology and genetically modified crops to boost productivity, alongside precision agriculture to minimize environmental impact and improve resource efficiency.
- Ramesh Chand (Member, NITI Aayog): Dr. Chand highlights the importance of leveraging digital technologies and Al-powered solutions to optimize farm management, increase yield predictability, and facilitate better decision-making for farmers.

#### 3. Key Points:

- Precision Agriculture: Agriculture 4.0 uses sensors, drones, and AI to gather data on soil health, moisture levels, and crop performance. This helps farmers make informed decisions, minimizing the use of water, fertilizers, and pesticides, thus increasing sustainability.
- Automation and Robotics: The adoption of automated machinery, including robotic harvesters and seed planters, is reducing labor costs and increasing efficiency. These innovations also help in minimizing human error and improving precision in farming tasks.
- Big Data and Al: The integration of big data and Al algorithms helps in predicting crop yields, detecting diseases, and optimizing supply chains. Farmers can access real-time insights on their mobile devices, making it easier to adapt to changing conditions.
- IoT and Connectivity: The use of IoT sensors in the field enables remote monitoring of crops and soil conditions. These devices can send alerts about irrigation needs, pest infestations, or nutrient deficiencies, helping farmers take timely actions.

- Sustainability and Resource Efficiency: Agriculture 4.0 emphasizes sustainable farming practices, focusing on water conservation, soil health, and biodiversity protection. Technologies like smart irrigation systems help minimize water wastage, which is crucial in water-scarce regions.
- Access and Affordability: While the technology promises significant benefits, its adoption is often limited by high costs, lack of awareness, and poor infrastructure. Bridging the digital divide and ensuring affordable access to these technologies for smallholder farmers remain critical challenges.

#### 4. Political Aspect:

The political aspect involves government n policies and initiatives to support the adoption of new agricultural technologies. The Digital India initiative and the National Mission on Agricultural Extension and Technology (NMAET) aim to provide farmers with access to technology, training, and subsidies. However, there are concerns about unequal access between large agribusinesses and small farmers, requiring careful policy interventions to ensure inclusivity.

#### 5. Geographical Context:

agriculture is diverse, with India's n varying requirements across different regions. While states like Punjab and Haryana benefit from advanced agricultural practices, regions like Uttarakhand and Bihar still struggle with basic infrastructure. Agriculture 4.0 technologies need to be adapted to suit the specific needs of different geographic regions, considering factors like climate, soil, and water availability.

#### 6. Social Perspective:

 From a social perspective, Agriculture 4.0 holds the potential to enhance the livelihoods of farmers, particularly in rural areas, by improving productivity and reducing the burden of manual labor. However, there are concerns about **job displacement** due to automation and the potential for deepening the **digital divide**. Ensuring that farmers, especially women and marginalized communities, are included in the technological transformation is essential for equitable growth.

#### 7. Examples and Relevant Data:

Example: The Pradhan Mantri Fasal Bima Yojana (PMFBY) integrates digital tools such as satellite imagery and remote sensing for crop insurance, making it easier to assess damage and process claims quickly. Data: According to the NITI Aayog, Precision Agriculture has the potential to increase farm productivity by 20-30% while reducing input costs by 15-20%, benefiting both farmers and the environment.

#### 8. Conclusion:

Agriculture 4.0 offers transformative n potential for India's agricultural sector, enabling farmers to become more efficient, sustainable, and resilient to environmental challenges. However, the successful implementation of these technologies requires overcoming barriers as accessibility, such affordability, and digital literacy. A collaborative effort between the government, private sector, and farmers will be crucial for realizing the full potential of Agriculture 4.0 in India.

Technological Disruptions: Revolutionizing Agricultural Practices in India

#### 1. Introduction:

 Technological disruptions in agriculture are transforming traditional farming practices in India. With challenges like climate change, water scarcity, and increasing population pressures, adopting innovative technologies is vital to enhance productivity, sustainability, and resilience. From Al-driven farming to drone-assisted crop monitoring, these innovations are reshaping India's agricultural landscape.

#### 2. Expert Opinions:

- Dr. Ramesh Chand (Member, NITI Aayog): Dr. Chand emphasizes that technology adoption, particularly through Al, precision agriculture, and IoT, can help farmers overcome many current barriers and substantially increase agricultural productivity.
- Dr. M.S. Swaminathan (Agricultural Scientist): Dr. Swaminathan advocates for the widespread integration of biotechnology, climate-smart agriculture, and genetically modified crops to combat food security issues and improve crop yields, particularly in drought-prone areas.

#### 3. Key Points:

- Al and Data Analytics: The integration of artificial intelligence (AI) and machine learning is enabling farmers to use predictive analytics for weather forecasting, crop yield estimation, and pest detection. Al-driven platforms provide real-time data, assisting farmers in making data-backed decisions for better crop management.
- Drones and Remote Sensing: Drones equipped with remote sensing technology are being used for crop monitoring, pest management, and precision spraying of fertilizers and pesticides. This reduces costs and ensures more accurate applications, minimizing environmental impact.
- Internet of Things (IoT): IoT sensors in fields are revolutionizing irrigation systems by providing data on soil moisture and weather conditions. Smart irrigation systems powered by IoT help conserve water, a crucial resource in India's arid regions, ensuring efficient water use for crops.

- Blockchain for Supply Chain Transparency: Blockchain technology is being implemented to improve transparency and traceability in agricultural supply chains. It helps farmers track the journey of their produce from farm to market, reducing fraud, ensuring fair pricing, and providing consumers with assurance about product quality.
- Genetically Modified (GM) Crops: The use of GM crops resistant to pests and diseases is revolutionizing crop production in India. Bt cotton is a prime example, significantly increasing yields while reducing pesticide use and labor costs.
- Automation and Robotics: Automated machinery such as robotic harvesters and weeding robots is increasing labor efficiency and reducing human intervention. These technologies are particularly beneficial for large-scale farms and can help address labor shortages in rural areas.

#### 4. Political Aspect:

The Indian government has been supportive of technological advancements in agriculture through various policies like the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) and Digital India initiatives. However, challenges remain in terms of policy implementation, adequate infrastructure, and bridging the gap between large corporate farms and smallholder farmers, who often lack access to advanced technologies.

#### 5. Geographical Context:

India's agricultural landscape is diverse, D with different regions facing unique challenges. States like Punjab and Haryana are leading in the adoption of technology, while Bihar, Uttarakhand, and Uttar Pradesh still face infrastructural hurdles. Geographically tailored solutions are necessary to ensure that technological disruptions can reach every corner of the country, especially the rural heartlands.

#### 6. Social Perspective:

The social impact of technological disruptions is multifaceted. On one hand, technology can improve farmers' incomes by increasing yields and reducing costs. On the other hand, it may create a digital divide, with larger, wealthier farmers benefiting more than smallholders. Ensuring equitable access to technology and providing training to marginalized farmers are crucial to avoid exacerbating rural inequalities.

#### 7. Examples and Relevant Data:

Example: The Pradhan Mantri Fasal Bima Yojana (PMFBY) integrates technology to assess crop damage using satellite imagery, which speeds up insurance claims and ensures timely support for farmers. Data: According to a NITI Aayog report, precision farming technologies could increase crop yields by up to 30% while cutting input costs by 15-20%, improving both productivity and sustainability.

#### 8. Conclusion:

Technological disruptions are n revolutionizing agricultural practices in India, offering new avenues for sustainable and efficient farming. While challenges such as accessibility and affordability persist, technological advancements hold the promise of significantly boosting agricultural productivity and resilience. By focusing on inclusive technology adoption, India can ensure that these innovations benefit all farmers, driving the sector toward a more prosperous and sustainable future.

Livestock Farming: A Revolution in Making

#### 1. Introduction:

 Livestock farming in India, traditionally an integral part of the agrarian economy, is undergoing a transformation with the adoption of modern practices and technologies. With the growing demand for animal products such as milk, meat, and wool, and the increasing role of livestock in rural livelihoods, there is immense potential for livestock farming to contribute to economic growth and food security in India. The focus is on improving productivity, animal health, and sustainable practices, leading to a revolution in this sector.

#### 2. Expert Opinions:

- **Dr. R. K. Pachauri (Former Director, TERI):** Dr. Pachauri emphasizes the role of **sustainable livestock farming** in mitigating environmental impacts while ensuring food security. He advocates for integrating **climate-smart practices** to reduce emissions and water usage in livestock farming.
- **Dr. S. Ayyappan (Former Director, ICAR):** Dr. Ayyappan highlights that advancements in **genetic improvement**, **vaccination programs**, and **feed efficiency** can significantly enhance the productivity of livestock farming in India, thus supporting rural economies.

#### 3. Key Points:

- Genetic Improvement of Livestock: The introduction of genetically improved breeds is helping boost milk production, meat yield, and disease resistance in livestock. Crossbreeding indigenous cattle with high-yielding foreign breeds like Holstein Friesians is enhancing productivity, especially in dairy farming.
- Technological Innovations: The use of precision farming tools such as wearable devices to monitor animal health, GPS for tracking movements, and data analytics to predict optimal feeding patterns is revolutionizing livestock farming. These technologies ensure better animal welfare, productivity, and profitability.
- Feed and Nutrition Management: Improving feed quality through balanced nutrition, including forage

**management** and **supplementation** of vitamins and minerals, is key to increasing productivity. Livestock feed innovation also aims to reduce costs and improve feed conversion ratios, which is crucial for smallholder farmers.

- Animal Health and Disease n Management: Advancements in vaccination, disease diagnostics, and **biosecurity measures** are enhancing the health and productivity of livestock. The National Animal Disease Control **Programme (NADCP)** aims to control diseases like FMD (Foot and Mouth Disease), brucellosis, and PPR (Peste des Petits Ruminants), ensuring a healthier livestock population.
- Sustainability and Climate-Smart Practices: With growing concerns over environmental sustainability, climateresilient practices such as improved grazing systems and integrated farming are gaining traction. These practices aim to reduce greenhouse gas emissions and water consumption, making livestock farming more environmentally friendly.
- Livestock as a Livelihood Strategy: Livestock farming is a significant source of income for millions of rural households. With initiatives like the National Dairy Development Board (NDDB) and Dairy Processing and Infrastructure Development Fund (DIDF), farmers are encouraged to diversify their income sources and improve livelihoods.

#### 4. Political Aspect:

The Indian government is committed to promoting livestock farming through schemes like National Mission on Bovine Productivity and the National Livestock Mission, which aim to improve breed quality, increase milk and meat production, and enhance the livelihood of rural farmers. However, policy challenges such as land tenure issues and access to credit for small-scale livestock farmers need to be addressed.

#### 5. Geographical Context:

 India's livestock farming practices vary significantly across regions. States like Gujarat, Rajasthan, and Haryana are leading in dairy farming, while Uttar Pradesh and Bihar have growing poultry and meat industries. Regional differences in climate, infrastructure, and market access influence the adoption of livestock farming technologies, requiring tailored solutions for each region.

#### 6. Social Perspective:

Livestock farming plays a crucial role in the socio-economic development of rural India. It provides employment opportunities, enhances food security, and is a source of supplementary income for farmers. However, challenges like low productivity, lack of training, and unequal access to technology hinder the sector's full potential. Promoting gender-sensitive policies that empower women, who play a central role in livestock farming, is essential for inclusive growth.

#### 7. Examples and Relevant Data:

The National Example: Dairy Development Board's (NDDB) Operation Flood project, which transformed India's dairy sector, increasing milk production from 22 million tons in 1970 to over 150 million tons in 2022, is a landmark success story in livestock farming. Data: According to **Department of Animal Husbandry and** Dairying, India's milk production reached a record 198.4 million tonnes in 2022-23, making India the largest milk producer globally. The dairy sector accounts for 4.5% of India's GDP and supports over 80 million households.

#### 8. Conclusion:

 Livestock farming in India is undergoing a significant transformation, driven by technological advancements and government support. With the right mix of sustainable practices, genetic improvements, and innovative technologies, the sector has the potential to boost productivity, improve rural livelihoods, and contribute significantly to the country's economy. To fully realize this potential, addressing challenges such as infrastructure, training, and equitable access to resources is essential.

Need of Change in Cropping Pattern: Conserving Water and Sustainable Agriculture

#### 1. Introduction:

India's agricultural sector, highly n. dependent on water-intensive crops such as rice and sugarcane, faces the dual challenge of water scarcity and the need for more sustainable farming practices. Changing cropping patterns to conserve water and promote sustainable agriculture is becoming increasingly crucial. The adoption of water-efficient crops, crop diversification, and efficient irrigation methods are vital for ensuring food security while preserving the environment.

#### 2. Expert Opinions:

- Dr. M.S. Swaminathan (Father of Indian Green Revolution): Dr. Swaminathan has long advocated for crop diversification to ensure environmental sustainability. He emphasizes that integrated farming systems and agro-ecological practices are essential for maintaining soil fertility and conserving water.
- Dr. Ramesh Chand (Member, NITI Aayog): Dr. Chand stresses the importance of transitioning to climateresilient crops and adopting waterefficient farming technologies like drip irrigation to optimize water use and improve crop yields.

#### 3. Key Points:

 Water-Efficient Crops: Shifting from water-guzzling crops like rice and sugarcane to drought-resistant crops such as **millets**, **pulses**, and **oilseeds** can help conserve water and reduce the overall water consumption in agriculture.

- Adoption of Micro-Irrigation Systems: Techniques like drip irrigation and sprinkler systems ensure that water is used efficiently at the root level, reducing wastage. These methods are particularly effective in regions facing water scarcity.
- Crop Diversification: Growing a variety of crops rather than monocultures improves soil health, reduces pest attacks, and minimizes the risk of crop failure. It also spreads the water requirement more evenly, making better use of available resources.
- Rainwater Harvesting and Water Management: Integrating rainwater harvesting and water storage systems with irrigation can provide an additional source of water during dry spells.
   Watershed management and water conservation practices further enhance sustainability.
- Sustainable Farming Practices: The use of organic farming techniques, such as crop rotation, green manures, and bio-fertilizers, helps restore soil fertility, conserve water, and reduce the dependency on chemical fertilizers and pesticides.
- Government Schemes and Support: Programs like the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) aim to expand irrigation facilities and improve water use efficiency in farming. The National Mission for Sustainable Agriculture (NMSA) promotes practices that increase productivity while conserving natural resources.

#### 4. Political Aspect:

The government is taking significant steps to address water scarcity and promote sustainable agriculture through policies and schemes. PMKSY and the National Water Mission emphasize efficient irrigation and water resource management. However, there is a need for stronger political will to enforce water conservation policies and incentivize sustainable practices among farmers.

#### 5. Geographical Context:

In states like Punjab, Haryana, and Uttar Pradesh, where rice and wheat dominate, the over-extraction of groundwater has led to severe water shortages. Shifting to crops requiring less water, like millets and pulses, is critical in these regions. In rain-fed areas, better rainwater management and crop diversification are key to improving resilience to climate change.

#### 6. Social Perspective:

Water conservation in agriculture not only ensures the sustainability of farming but also secures livelihoods in rural areas. Smallholder farmers are particularly vulnerable to water scarcity. Promoting inclusive farming practices that focus on improving water availability and diversifying crop choices can enhance food security, empower women, and promote rural development.

#### 7. Examples and Relevant Data:

Example: The Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), with a budget of ₹50,000 crore, aims to provide irrigation facilities and improve water use efficiency, directly impacting water conservation efforts in agriculture. Data: According to the Ministry of Agriculture, the area under microirrigation increased from 5.38 million hectares in 2014 to over 10 million hectares in 2021, demonstrating the growing adoption of water-efficient irrigation methods.

#### 8. Conclusion:

 Changing the cropping pattern to conserve water and promote sustainable agriculture is not only an urgent need but also an opportunity to ensure the long-term viability of India's agricultural sector. By focusing on water-efficient crops, adopting innovative irrigation technologies, and implementing sustainable farming practices, India can address the challenges of water scarcity and achieve food security. However, collective action from the government, farmers, and society is essential to realize these goals effectively.

#### Subsidies: Boon or Curse

#### 1. Introduction:

Subsidies in India have been a doubleedged sword, designed to support sectors like agriculture, energy, and food. While subsidies have contributed to improving access to basic necessities and supporting economic growth, they have also led to fiscal strain, inefficiency, and market distortions. The debate about whether subsidies are a boon or curse continues, with both economic and social implications.

#### 2. Expert Opinions:

- Arvind Panagariya (Economist and Former Vice Chairman of NITI Aayog): Panagariya argues that subsidies, particularly in energy and food, have been a major fiscal burden. He advocates for targeted subsidies to ensure they reach the most needy and recommends reforming subsidy policies to reduce inefficiency.
- Dr. Jean Dreze (Economist and Social Activist): Dreze highlights the positive social impact of food subsidies through schemes like the Public Distribution System (PDS). He emphasizes that well-targeted subsidies can play a crucial role in addressing poverty and inequality.

#### 3. Key Points:

Economic Support for Vulnerable Sections: Subsidies, particularly in sectors like food, fuel, and fertilizers, provide direct economic relief to vulnerable sections of society, helping them afford essential goods and services.

**INDIAN ECONOMY PART - 2** 

- Fiscal Burden and Inefficiency: Subsidies, especially in sectors like energy and fertilizers, often lead to large fiscal deficits. The inefficiency in subsidy distribution, where benefits don't reach the intended beneficiaries, undermines their effectiveness.
- Distortion of Markets: Excessive subsidies, particularly in energy and fuel, distort market signals and create a culture of dependency, hindering private sector competition and innovation. They also encourage overconsumption of resources like fuel and electricity, which can lead to long-term sustainability challenges.
- Targeted vs. Universal Subsidies: The key to subsidy effectiveness lies in targeting. Universal subsidies, like those for fuel and fertilizers, benefit all income groups, including the affluent. In contrast, targeted subsidies, such as those under PMGKY (Pradhan Mantri Garib Kalyan Yojana) for food distribution, ensure that subsidies reach those who need them most.
- Environmental Concerns: Subsidies, especially in agriculture and energy, often promote the use of environmentally damaging practices, such as overuse of chemical fertilizers and excessive water usage. Shifting subsidies toward sustainable practices like organic farming and solar energy could mitigate these effects.
- Government Schemes and Reforms: The Direct Benefit Transfer (DBT) system aims to reduce inefficiencies in subsidy distribution by transferring benefits directly to the bank accounts of eligible beneficiaries, thus improving targeting and minimizing leakages.

#### 4. Political Aspect:

Subsidies are a politically sensitive issue, as they are often used to gain favor with large voter bases, especially in rural areas. While they can be a tool for welfare, political considerations sometimes override the need for economic reform, leading to unsustainable subsidy policies.

#### 5. Geographical Context:

In states like Uttar Pradesh, Bihar, and Madhya Pradesh, food and fuel subsidies are crucial for supporting the poor. However, these states also face challenges related to inefficiency in subsidy distribution. In regions with high agricultural subsidies, water-intensive crops like rice and sugarcane are overproduced, worsening water scarcity.

#### 6. Social Perspective:

Subsidies can play an important role in social welfare by ensuring basic access to food, fuel, and healthcare for the underprivileged. However, **subsidy reforms** are necessary to ensure that resources are used efficiently and reach the **economically disadvantaged** rather than being misallocated.

#### 7. Examples and Relevant Data:

Public Distribution D Example: The **System (PDS)**, which provides subsidized food to millions of poor households, has lifted millions out of hunger but is often criticized for its inefficiency and leakages. Under the NFSA (National Food Security Act), over 80 crore people are provided with subsidized food grains. Data: According to the Ministry of Finance, India spent approximately ₹2.8 lakh crore on subsidies in 2020-21, with food subsidies making up the largest portion, but inefficiency led to a significant loss in resource utilization.

#### 8. Conclusion:

 Subsidies are both a boon and a curse depending on how they are structured and implemented. While they can provide essential support to vulnerable populations, they also contribute to fiscal imbalances, inefficiency, and market distortions. The challenge lies in reforming subsidy policies to ensure they are welltargeted, sustainable, and aligned with long-term economic and environmental goals. By adopting reforms like **DBT** and promoting **sustainable agricultural practices**, subsidies can continue to serve their intended purpose without burdening the economy.

#### Agriculture's Labour Dependency

#### 1. Introduction:

Agriculture in India remains highly D dependent on manual labor, contributing employment significantly to but often resulting in low productivity underemployment. Despite and technological advancements, the laborintensive nature of Indian agriculture persists, reflecting both its challenges and the economic importance of labor in sustaining agricultural output. This dependency raises questions about efficiency, income disparity, and the long-term sustainability of agricultural practices.

#### 2. Expert Opinions:

- Dr. M.S. Swaminathan (Agricultural Scientist and Father of Indian Green Revolution): Swaminathan emphasizes the need for modernization in agriculture to reduce labor dependency and improve productivity. He advocates for a shift to more mechanized farming to reduce the strain on rural labor.
- Prof. Abhijit Banerjee (Economist and Nobel Laureate): Banerjee argues that the over-dependence on agriculture for employment is a major cause of underemployment, where labor is employed in low-productivity agricultural activities instead of more productive sectors like manufacturing or services.

#### 3. Key Points:

 High Dependency on Agriculture for Employment: A significant portion of India's rural population, about 42%, is engaged in agriculture, despite it contributing less than 20% to the GDP, showing an imbalance between labor and output.

- Inefficient Labour Usage: Much of the agricultural labor is underemployed, with workers engaging in seasonal tasks that do not fully utilize their potential, often leading to low wages and poor working conditions.
- Seasonal Migration of Labour: In many regions, there is seasonal migration of laborers from rural areas to cities or other regions for non-agricultural work during off-seasons, further highlighting the irregularity and unpredictability of agricultural labor.
- Impact of Mechanization and n. Technology: The slow of pace technological adoption and mechanization in agriculture limits labor productivity. In contrast, developed nations have shifted towards high-tech farming that reduces labor dependence while boosting productivity.
- Labour Exploitation and Low Wages: Many agricultural workers, especially migrant workers, face poor wages, exploitation, and lack of social security. This has created a vicious cycle of poverty within agricultural communities.
- Agriculture's Contribution to Rural Employment: Despite these challenges, agriculture remains the largest employer in rural India, offering livelihood to millions, especially in states like Uttar Pradesh, Bihar, and Madhya Pradesh, where mechanization is limited.

#### 4. Political Aspect:

policies Government often focus on short-term relief measures for agricultural labor, such as MNREGA (Mahatma Gandhi National Rural Employment Guarantee Act), but fail to address long-term structural reforms like land reforms and mechanization, which are needed to reduce labor dependency. Political promises of agricultural welfare often lead to temporary solutions rather than sustainable reforms.

#### 5. Geographical Context:

In states like Punjab, Haryana, and Uttar Pradesh, mechanization is more prevalent, yet many small-scale farmers still rely on traditional labor methods due to high costs of technology. In contrast, Bihar and Odisha face more severe challenges of labor migration and underemployment due to low agricultural productivity and limited mechanization.

#### 6. Social Perspective:

Rural agricultural workers, especially women and migrants, face significant socio-economic challenges, including lack of formal labor rights, unsafe working conditions, and discrimination. Reducing the dependency on manual labor and promoting diversification into other sectors could enhance social wellbeing and economic mobility for these communities.

#### 7. Examples and Relevant Data:

introduction Example: The of n. mechanized rice harvesting in Punjab reduced labor dependency but also led to job losses among manual laborers. However, it also helped increase productivity and reduce labor costs. Data: According to the Ministry of Labour and Employment, about 85% of agricultural workers are engaged in manual labor, while only a fraction benefits from technological tools or mechanized farming.

#### 8. Conclusion:

Agriculture's heavy reliance on labor is both a legacy of historical practices and a modern challenge, hindering productivity and economic growth. While it continues to be a major source of employment, the sector's reliance on manual labor creates inefficiencies, income disparity, and poor living conditions for rural workers. Reducing this dependency requires a multifaceted approach that includes technological innovation, training programs, and policy reforms aimed at improving wages and working conditions. Investing in mechanization and diversifying rural economies will help break the cycle of labor dependency and improve agricultural output.

#### Green Revolution Issue

#### 1. Introduction:

 The Green Revolution in India, initiated in the 1960s, aimed to increase agricultural production and achieve food security through the use of highyielding varieties of seeds, chemical fertilizers, and irrigation techniques. While it succeeded in boosting food production, it also created several socioeconomic and environmental challenges, highlighting issues that persist in modern agriculture.

#### 2. Expert Opinions:

- **Dr. M.S. Swaminathan (Agricultural Scientist and Father of Indian Green Revolution):** Swaminathan advocates for a **"second Green Revolution"** that focuses on sustainable agricultural practices, integrating modern techniques with environmental conservation to mitigate the issues created by the first Green Revolution.
- Prof. Vandana Shiva (Environmental Activist): Shiva argues that the Green Revolution has exacerbated environmental degradation and inequalities in rural areas, as its reliance on chemical inputs and high-water consumption harmed ecosystems and marginalized small farmers.

#### 3. Key Points:

Increased Production but Unequal Distribution: The Green Revolution led to a significant rise in food production, particularly in Punjab, Haryana, and Uttar Pradesh, but its benefits were unevenly distributed, with larger, wealthier farmers gaining more than small-scale, resourcepoor farmers.

- Environmental Degradation: The extensive use of chemical fertilizers and pesticides led to soil degradation, groundwater depletion, and pollution. Over-reliance on monoculture cropping systems harmed biodiversity, making agriculture less resilient.
- Water Scarcity: The Green Revolution's heavy dependence on irrigation caused a sharp decline in water tables in regions like Punjab and Haryana, leading to long-term water scarcity and making agriculture unsustainable in certain areas.
- Increased Debt and Inequality: The high costs of inputs such as seeds, fertilizers, and machinery pushed many small farmers into debt. The growing income inequality between large and small farmers was exacerbated, as wealthier farmers were able to invest in technology, while smaller farmers could not afford the necessary inputs.
- Sustainability Concerns: The highinput, high-output model created sustainability issues, as it emphasized short-term productivity gains over long-term environmental health and soil fertility. This has led to challenges in maintaining agricultural productivity without exhausting resources.
- Shift in Agricultural Practices: While the Green Revolution promoted the use of technology, the heavy focus on highyielding varieties and chemicals made traditional, organic farming practices less economically viable, leading to a reduction in diversity of crops and farming systems.

#### 4. Political Aspect:

The political support for the Green n Revolution largely favored larger farmers and corporate agriculture, neglecting the needs of smallholder farmers. Policies and subsidies were not equally distributed, exacerbating disparities regional and the concentration of wealth and resources. Further, political focus on achieving food security overshadowed the long-term sustainability of farming practices.

#### 5. Geographical Context:

The Green Revolution had its most significant impact in the Indo-Gangetic plains, particularly in Punjab, Haryana, and Uttar Pradesh, where the infrastructure for irrigation and access to technology were more readily available. In contrast, Eastern India (Bihar, Odisha) remained largely unaffected by these advances, and the benefits of the revolution were uneven across regions.

#### 6. Social Perspective:

The Green Revolution deepened social inequality, particularly in rural areas, as small-scale farmers, often marginalized communities, could not afford the inputs required for high-yield farming. It also led to gender disparities in labor, as women, who traditionally engaged in non-mechanized farming, found fewer opportunities in the newly mechanized agricultural landscape.

#### 7. Examples and Relevant Data:

Example: The introduction of highyielding wheat varieties in Punjab led to bumper harvests but also resulted in declining water tables. In some areas, groundwater depletion became so severe that farming became unsustainable. Data: According to the Ministry of Agriculture, Punjab has seen a decline in groundwater levels by 1-2 meters annually in many regions, threatening the long-term viability of agriculture in the state.

#### 8. Conclusion:

While the Green Revolution played a pivotal role in transforming India's agriculture and ensuring food security, its environmental and socio-economic consequences underscore the need for a more sustainable and inclusive agricultural model. Addressing issues such as water scarcity, soil degradation, and inequality is crucial. The way forward lies in integrating modern

technology with sustainable farming practices, promoting diverse cropping systems, and ensuring that the benefits of agricultural advancements are more equitably distributed across different socio-economic groups.

#### Evergreen Revolution Concept

#### 1. Introduction:

The Evergreen Revolution concept, proposedby Dr.M.S.Swaminathan, refers to a sustainable approach to agriculture that focuses on increasing productivity without degrading the environment. Unlike the Green Revolution, which relied heavily on chemical inputs, the Evergreen Revolution integrates technology with eco-friendly farming practices, aiming for long-term agricultural growth that enhances food security while conserving natural resources.

#### 2. Expert Opinions:

- Dr. M.S. Swaminathan (Agricultural Scientist): Swaminathan emphasizes the need for sustainable agriculture, suggesting that the Evergreen Revolution should focus on integrating highyielding varieties with practices that conserve soil and water, reduce dependency on chemicals, and promote biodiversity.
- Prof. Vandana Shiva (Environmental Activist): Shiva supports the concept, highlighting its potential to address environmental challenges by reducing chemical inputs and promoting agroecology. She advocates for a farming model that works with nature rather than against it.

#### 3. Key Points:

 Sustainability Focus: The Evergreen Revolution emphasizes sustainable farming practices that ensure continuous agricultural productivity without harming the environment. This includes using organic farming, **biological pest control**, and **waterefficient** techniques.

- Water Conservation: The concept stresses the importance of rainwater harvesting, micro-irrigation, and improving water-use efficiency to combat the growing issue of water scarcity in agriculture, especially in water-stressed regions.
- Biodiversity and Soil Health: It promotes crop diversification, using a range of species that enhance soil fertility and improve ecological balance, reducing the dependence on chemical fertilizers and pesticides.
- Technological Integration: Unlike the Green Revolution, which focused on chemical inputs, the Evergreen Revolution integrates biotechnology and precision farming techniques to increase productivity while maintaining ecological balance.
- **Farmer Empowerment:** The concept seeks to empower farmers by focusing on **decentralized decision-making** and promoting **participatory research**, ensuring that farming solutions are tailored to local conditions and needs.
- Climate Resilience: It aims to build climate-resilient agricultural systems that can withstand the impacts of climate change, such as unpredictable rainfall, droughts, and extreme weather events.

#### 4. Political Aspect:

Politically, the Evergreen Revolution advocates for policy reforms that promote sustainable agricultural practices, provide subsidies for eco-friendly technologies, and support smallholder farmers. However, it requires a shift from the current policy focus on highinput, high-output models to one that incentivizes conservation and long-term ecological sustainability.

#### 5. Geographical Context:

The concept is particularly relevant for rain-fed regions and arid areas of India, where traditional farming methods often face challenges related to water scarcity and soil degradation. By focusing on sustainable practices like crop rotation and water conservation, the Evergreen Revolution can transform these areas into thriving agricultural hubs.

#### 6. Social Perspective:

The Evergreen Revolution aims to reduce the social inequality created by the Green Revolution by promoting inclusive agricultural practices that benefit small farmers and marginalized communities. By advocating for community-based farming, it seeks to empower farmers and reduce the dependency on largescale industrial agriculture, ensuring equitable access to resources.

#### 7. Examples and Relevant Data:

Example: In Himachal Pradesh, the D promotion of organic farming through the state's Organic Farming Policy exemplifies the principles of the Evergreen Revolution. The adoption of sustainable techniques has led to increased productivity while preserving soil and water resources. Data: The National Mission for Sustainable Agriculture (NMSA), launched by the Indian government, aims to promote climate-resilient agriculture, improve soil health, and reduce the use of harmful chemical inputs, aligning with the objectives of the Evergreen Revolution.

#### 8. Conclusion:

The Evergreen Revolution offers a promising pathway toward sustainable agriculture that can meet the demands of a growing population while preserving the environment. By integrating ecofriendly technologies, promoting water conservation, and empowering farmers, it has the potential to revolutionize agriculture in India and beyond, ensuring that future generations inherit a fertile and resilient agricultural landscape.

#### Agriculture Market Issues in India

#### 1. Introduction:

Agriculture in India, contributing D significantly to the economy, faces several challenges related to the functioning of agricultural markets. These issues are rooted in inadequate market infrastructure, price volatility, lack of market access, and middlemen exploitation. Despite reforms like Agricultural Produce Market the Committee (APMC) Act and e-NAM, the agricultural market system remains inefficient and often fails to provide fair prices to farmers.

#### 2. Expert Opinions:

- **Dr. M.S. Swaminathan (Agricultural Scientist):** Swaminathan advocates for a **comprehensive overhaul** of agricultural marketing systems, emphasizing the need for **direct market linkages** between farmers and consumers to reduce the influence of middlemen and ensure fair prices.
- Prof. Ramesh Chand (Member, NITI Aayog): Chand highlights the lack of storage infrastructure and the fragmented nature of markets as major impediments to achieving efficient agricultural marketing in India, recommending the development of agri-logistics and storage networks to stabilize prices.

#### 3. Key Points:

- Fragmented Market Structure: Indian agriculturemarkets are highly fragmented with many small, unregulated markets, often leading to high transaction costs, inefficiencies, and low prices for farmers due to the dominance of middlemen.
- Price Volatility: The agricultural market is characterized by significant price fluctuations due to seasonal production, inadequate supply chain infrastructure, and external factors such as climatic conditions, which create uncertainty and hardship for farmers.

- Limited Access to Markets: Many farmers, especially those inrural or remote areas, struggle to access regulated markets and fair pricing mechanisms, resulting in limited bargaining power and dependence on local traders who exploit them.
- Inadequate Storage and Processing Facilities: India suffers from a lack of cold storage and processing infrastructure, leading to post-harvest losses of around 15-20%. This reduces farmers' profitability and increases food prices, impacting both producers and consumers.
- Role of Middlemen: Middlemen often control the agricultural supply chain, manipulating prices and limiting the share of profit that reaches the farmer. This exploitation reduces the income of producers and perpetuates poverty in rural areas.
- Policy and Regulatory Gaps: Although the government has introduced reforms like the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act (2020), challenges remain in implementing these reforms and integrating them effectively into the market ecosystem.

#### 4. Political Aspect:

The political aspect of agricultural markets involves the debate over APMC reforms and the legalization of private market participation. While the government aims to improve farmers' incomes through policies like the National Agriculture Market (e-NAM), state governments have resisted changes due to the power of APMCs and vested interests. Political will is essential for implementing meaningful reforms and addressing the interests of both farmers and traders.

#### 5. Geographical Context:

 The agricultural market issues are more pronounced in rural and remote areas, where farmers lack access to modern markets and digital platforms. States like Bihar and Uttar Pradesh face challenges in market access, while regions with better infrastructure like **Punjab** and **Haryana** show better market dynamics, suggesting that **regional disparities** play a key role in agricultural market issues.

#### 6. Social Perspective:

The social impact of agricultural market issues is significant, as farmers, especially smallholders, are marginalized in the market structure. The caste and class dynamics also come into play, where socially disadvantaged groups often receive even lower returns for their produce. There is a need for inclusive reforms to empower all farmers, particularly women and marginalized communities, and ensure their fair participation in the agricultural market.

#### 7. Examples and Relevant Data:

n' Example: The e-NAM (National Agriculture Market), a government initiative, aims to connect farmers with buyers across the country through a digital platform. While it has brought some improvements, the success of e-NAM is still limited due to low digital literacy among farmers and poor infrastructure. Data: According to the State of Indian Agriculture Report (2021), post-harvest losses in India amount to **₹92,651 crore** annually, largely due to inadequate storage and market infrastructure, showing the need for infrastructure investment to address market inefficiencies.

#### 8. Conclusion:

 Agricultural markets in India face significant challenges related to market fragmentation, price volatility, lack of infrastructure, and middlemen exploitation. To improve the situation, comprehensive reforms are needed, including strengthening market linkages, modernizing infrastructure, and **empowering farmers**. By addressing these issues, India can create a more efficient, transparent, and fair agricultural market system, benefiting both producers and consumers in the long run.

#### Agriculture Pricing Policy

#### 1. Introduction:

The Agriculture Pricing Policy in India is designed to ensure that farmers receive fair prices for their produce while keeping food prices reasonable for consumers. The policy focuses on providing Minimum Support Prices (MSP), promoting price stability, and enhancing farmers' income. Despite its importance, the policy faces challenges in implementation, market access, and ensuring profitability for farmers.

#### 2. Expert Opinions:

- Dr. M.S. Swaminathan (Agricultural Scientist): Swaminathan has long advocated for a comprehensive pricing policy that balances farmers' needs with consumer welfare, suggesting that the MSP system should be coupled with market reforms to ensure sustainability.
- Prof. Ramesh Chand (Member, NITI Aayog): Chand emphasizes the need for dynamic pricing strategies that adjust to market conditions, advocating for a market-driven pricing mechanism that reduces the dependence on MSP and provides price stability through supply chain reforms.

#### 3. Key Points:

Minimum Support Price (MSP): The MSP acts as a guaranteed price for farmers' produce, ensuring that they are not forced to sell below a certain threshold. However, MSP has been criticized for being inefficient and not universally applied across all crops, leaving many farmers without a safety net.

- Price Fluctuations: Agriculture pricing is subject to seasonal fluctuations and market forces, leading to price volatility. This makes it difficult for farmers to plan, causing income instability, especially for small farmers and those in remote regions.
- Distortions in Pricing: The government's interventions through MSP can sometimes lead to market distortions, where prices are artificially inflated, leading to overproduction of certain crops while others face a shortage.
- Linking MSP with Input Costs: One of the major criticisms is the disconnect between the MSP and the cost of production. The MSP is often insufficient to cover the rising input costs, which include seeds, fertilizers, labor, and irrigation, leading to a low-profit margin for farmers.
- Challenges of Procurement System: The procurement system meant to buy crops at MSP is often marred by inefficiencies, including delays, lack of storage facilities, and limited geographical coverage. This results in huge post-harvest losses and limits the scope of the MSP's impact.
- Regional Disparities: The effectiveness of the agriculture pricing policy varies across regions. States like Punjab and Haryana benefit from a well-established MSP procurement system, while states like Bihar and Uttar Pradesh struggle with poor implementation and market access, leading to regional disparities in farmer incomes.

#### 4. Political Aspect:

The agricultural pricing policy is highly influenced by political considerations, with government interventions often shaped by electoral politics and farmer protests. The MSP system is a critical tool in ensuring farmer support and securing votes in agriculture-intensive states. However, political interference often distorts pricing policies, leading to inefficiencies and unsustainable practices.

**INDIAN ECONOMY PART - 2** 

#### 5. Geographical Context:

geographical challenges The of n agriculture pricing policy are significant, as India's agricultural production is heterogeneous and dependent on climate. In water-scarce regions or remote areas, farmers face challenges in accessing regulated markets and MSP procurement centers, limiting their ability to benefit from the policy. States like Punjab and Haryana have better access to MSP mechanisms, while farmers in Bihar and Uttarakhand often struggle to realize the benefits.

#### 6. Social Perspective:

From a social perspective, the agriculture pricing policy has a dual impact. On the one hand, the MSP offers protection to vulnerable farmers; on the other hand, smallholder farmers and those from disadvantaged communities often miss out due to poor access to procurement systems or geographical isolation. Additionally, women farmers and those in marginalized communities face gender-based barriers in accessing fair prices for their produce, leading to inequitable outcomes.

#### 7. Examples and Relevant Data:

Farmers' Produce Example: The n Trade and Commerce (Promotion and Facilitation) Act (2020) was introduced to create an alternative market mechanism outside APMCs, aiming to decentralize the pricing and provide farmers with better price discovery and more marketing choices. Data: According to the Agricultural Price Commission (2020), only 23% of farmers in India actually receive the MSP for their crops, highlighting the challenges in effective implementation. Also, the Farmer's Income Crisis Report indicates that about 50% of farmers are not able to cover the cost of production, further emphasizing the need for policy reform.

#### 8. Conclusion:

While the Agriculture Pricing Policy aims to safeguard farmers' interests, its effectiveness is hindered by market inefficiencies, price volatility, regional disparities, and challenges in policy implementation. For the policy to be truly successful, it must be reformed to ensure better price support, fairer access, and improved infrastructure. A more market-driven and inclusive pricing system would help achieve sustainable farming practices and ensure that farmers are compensated fairly for their efforts.

#### Aspirational Panchayat and Cluster Model for New Farming Program

#### 1. Introduction:

The APCMNF (Aspirational Panchayat and Cluster Model for New Farming) Program is an initiative aimed at promoting sustainable and efficient agricultural practices in India's rural areas, particularly focusing on panchayats and farmer clusters. The program seeks to address challenges such as low productivity, climate vulnerability, and lack of infrastructure by adopting a cluster-based approach to farming that empowers local farmers through technological, financial, and knowledgebased support.

#### 2. Expert Opinions:

Dr. M.S. Swaminathan (Agricultural Swaminathan Scientist): Dr. has highlighted the importance of community-based farming models in driving sustainable agricultural growth, particularly through collective action at the grassroots level. He sees the APCMNF program as an essential step in strengthening local governance and promoting climate-resilient farming.

#### 18 IAS MAINS 2025: THINK IN THEMES

Prof. Ramesh Chand (Member, NITI Aayog): Prof. Chand has emphasized that the program can help farmers optimize resource use and improve yields through technology integration and better market access. He notes that the cluster approach allows for more efficient resource mobilization and addresses the issue of fragmented farming.

#### 3. Key Points:

- Cluster-Based Approach: The APCMNF program adopts a cluster model, bringing together small farmers within specific regions to collectively engage in farming activities, sharing resources, knowledge, and infrastructure to improve productivity and reduce costs.
- Focus on Sustainable Farming: The program prioritizes sustainable agricultural practices that enhance soil health, reduce water wastage, and promote organic farming. It encourages farmers to adopt methods that are climate-resilient and environmentally friendly.
- Technological Integration: Through the APCMNF program, farmers are introduced to advanced agriculture technologies such as drip irrigation, soil testing, and drones for monitoring crops. This enables better crop management and reduces dependence on traditional, resource-intensive methods.
- Financial Support and Training: The program provides financial aid to farmers for purchasing modern agricultural tools, seeds, and fertilizers. Additionally, it offers training programs on best agricultural practices, crop diversification, and market linkages to enhance farm incomes.
- Capacity Building of Panchayats: The program also focuses on empowering local governance structures such as panchayats by building their capacity to manage and implement farming schemes, improving community participation and decision-making in agriculture.

 Government Collaboration and Support: The program is a collaborative effort between the central and state governments, NGOs, and private sector entities, providing a holistic approach to addressing agricultural challenges at the grassroots level.

#### 4. Political Aspect:

APCMNF The program is deeply n tied to **political interests** as it involves local governance structures (panchayats) and aims to improve rural development. The political backing of state governments is crucial for the successful implementation of the program, as it requires aligning various stakeholders such as local leaders, government agencies, and community representatives to ensure policy continuity and resource allocation.

#### 5. Geographical Context:

The APCMNF program focuses on regions D with significant agricultural activity but where productivity is often low due to fragmented land holdings, lack of modern technology, or vulnerability to climate change. This includes areas in states like Uttar Pradesh, Bihar, and Madhya Pradesh, where small-scale farming predominates. The cluster approach allows for localized solutions tailored specific to geographical conditions, such as water scarcity or soil degradation.

#### 6. Social Perspective:

From a social perspective, the APCMNF program is designed to empower marginalized farmers by promoting collectiveactionthroughfarmers'groups or panchayat-led initiatives. This not only ensures better economic returns but also promotes social cohesion and communitybuilding. The program's focus on gender equality is also significant, as it encourages women's participation in agricultural decision-making and income-generating activities, fostering economic empowerment.

#### 7. Examples and Relevant Data:

Example: The cluster-based farming model in Madhya Pradesh under APCMNF has helped farmers increase their average yield by 20-30% by promoting the use of drip irrigation and soil health management. Data: According to the Ministry of Agriculture (2021), areas under the APCMNF program have shown a 15% increase in income for farmers due to enhanced access to finance and market linkages. This is a positive sign of the program's effectiveness in improving the economic situation of farmers.

#### 8. Conclusion:

The APCMNF Program represents a promising model for enhancing agricultural productivity and ensuring sustainable farming practices in India. By focusing on cluster-based farming, technological integration, and local governance, the program offers a comprehensive solution to some of the most pressing challenges facing India's agricultural sector. However, its success hinges on continued political will, effective implementation at the grassroots level, and inclusive participation from all stakeholders.

#### Primary Agricultural Societies (PAS)

#### 1. Introduction:

 Primary Agricultural Societies (PAS) are farmer-based cooperative organizations designed to promote agricultural development by providing essential services such as credit, procurement, and marketing assistance to farmers. These societies play a crucial role in rural areas by enabling small-scale farmers to pool resources, access agricultural inputs, and collectively engage in marketing produce. PAS are foundational to the cooperative movement in India and are key instruments in supporting farmers' welfare, particularly in remote and underdeveloped regions.

#### 2. Expert Opinions:

- Dr. M.S. Swaminathan (Agricultural Scientist): Dr. Swaminathan emphasized the role of cooperatives, including PAS, in promoting sustainable agriculture and increasing farmers' bargaining power in the market. He believes PAS can be pivotal in reducing poverty by ensuring fair prices and access to resources.
- Prof. Ramesh Chand (Member, NITI Aayog): Prof. Chand points out that PAS are essential for financial inclusion in rural areas, allowing farmers to access low-interest credit and modern farming inputs. He advocates strengthening PAS to enhance agricultural productivity and market access for small and marginal farmers.

#### 3. Key Points:

- Cooperative Model for Resource Sharing: PAS are established to enable farmers to come together and share resources such as fertilizers, seeds, tools, and machinery, thereby reducing individual costs and improving overall productivity.
- Credit Facilitation and Financial Inclusion: One of the key roles of PAS is to provide affordable credit to farmers. By acting as intermediaries between banks and farmers, PAS can facilitate access to low-interest loans for purchasing agricultural inputs and investing in farming infrastructure.
- Procurement and Marketing of Produce: PAS help farmers with the procurement and marketing of their agricultural produce. By aggregating produce, PAS can secure better prices and ensure that farmers are not exploited by middlemen.
- Promotion of Sustainable Practices: Many PAS encourage the adoption of sustainable agricultural practices by

offering training and guidance on **organic farming**, **water conservation**, and **soil health management**, helping farmers improve their environmental footprint.

- Government Support and Integration: The government of India, through various schemes, provides financial support to PAS to promote rural development.
   Subsidies, grants, and loans are offered to ensure that PAS can continue their operations and expand their services.
- Capacity Building and Education: PAS also play a significant role in educating farmers about innovative farming techniques, new agricultural technologies, and market trends, improving their knowledge and skills to adapt to changing agricultural landscapes.

#### 4. Political Aspect:

PAS have strong political implications as they are deeply linked to rural development policies, and governments at both the state and central levels support these organizations. Political will is critical for ensuring the proper functioning of PAS and making them an integral part of agrarian reforms. Politicians often emphasize the expansion of PAS as a key measure to address rural poverty, unemployment, and agrarian distress.

#### 5. Geographical Context:

PAS are most prominent in rural areas, particularly in states with significant agricultural activity such as Punjab, Maharashtra, Uttar Pradesh, and Tamil Nadu. In these regions, the role of PAS is amplified due to the dominance of small-scale farming and the need for cooperative mechanisms to pool resources, particularly in remote areas with poor infrastructure and market access.

#### 6. Social Perspective:

• From a social perspective, PAS foster a sense of **community** and **collective** 

action among farmers. By working together, farmers can not only achieve economies of scale but also improve their social cohesion and political leverage in rural governance. PAS also encourage women's participation in farming activities, thus contributing to gender equality and economic empowerment.

#### 7. Examples and Relevant Data:

Example: In Punjab, the role of Primary Agricultural Societies has been instrumental in improving wheat and rice productivity by ensuring timely access to high-quality inputs and organized procurement. The Punjab State Cooperative Supply and Marketing Federation (Markfed) has played a significant role in the success of PAS in the region. Data: According to the NABARD (2020), PAS organizations have been instrumental in increasing farmers' income by approximately 15-20% due to their assistance in improving market access and reducing the exploitation of farmers by intermediaries.

#### 8. Conclusion:

Primary Agricultural Societies are vital 0 for promoting cooperative farming, enhancing financial inclusion, and ensuring market fairness for farmers. With government backing, community involvement, and empowerment of farmers, the PAS can significantly contribute to the sustainable growth of India's agricultural sector. However, the success of these societies depends continued investment in on infrastructure, capacity building, and market linkages, along with the active participation of local communities. Strengthening PAS remains crucial for addressing India's agricultural challenges and fostering inclusive rural development.



MASTER CLASS on ESSAY WRITING Mentor: MANOJ. K. JHA

ETHICS

MASTER CLASS

**COMPLETE SOLUTION** 

for 250 Marks

Mentor: MANOJ. K. JHA

- 5 Learning Sessions: Classroomm Session on Essay Writing through Worksheets
- Session on Brain Storming & Critical Thinking
- 5 Mock Tests
- Special Session on Philosophical Essays
- Content Enrichment Class on major Issues/themes and how to use the existing content in Essay
- I5 Sessions with Daily Answer
  Writing through Practice Tests &
  Mentorship
- Theme-based Complete Coverage of GS Paper 4 Syllabus
- Total 15 Tests: 13 Practice Tests & 2 Mock Tests
- Special Sessions on Case Studies
- Class Handouts for Value Addition
- Scan the OR Code for more details

Scan the

QR Code

for

more details



Complete Revision of GS Paper IV Syllabus *through* Tests & Mentorship

- 5 Sectional Tests & 1 Mock Test for Comprehensive Revision of Syllabus.
- Detailed Discussions to enhance Understanding & Approach.
- One-on-one Mentorship with Manoj
  K. Jha for Marks Improvement.
- Model Hints to Enrich and Improve Quality in Answers.

8448496262





GS SCORE, Second Floor, Metro Tower, 1B, Pusa Road, Karol Bagh, New Delhi - 110005 (Beside Karol Bagh Metro Station Gate No. 8)

## FCI Issues and Reforms

#### 1. Introduction:

The Food Corporation of India (FCI) plays a crucial role in ensuring food security in India by procuring, storing, and distributing food grains. However, FCI faces numerous challenges related to inefficiencies, outdated infrastructure, financial sustainability, and the need for reforms to meet the growing demands of food security in a changing economy.

#### 2. Expert Opinions:

- C. Rangarajan (Former Chairman of the EconomicAdvisoryCouncil):Rangarajan highlights that FCI's inefficiencies in storage and distribution systems lead to high food wastage, and there is a need to modernize these processes to improve efficiency and cost-effectiveness.
- Bibek Debroy (Chairman, Economic Advisory Council): Debroy advocates for reducing FCI's role in direct procurement and distribution, suggesting that the market-based approach should be expanded to improve resource allocation and reduce fiscal burden.

#### 3. Key Points:

- Inefficiency in Procurement and Distribution: FCI struggles with delays in procurement and distribution, leading to inefficiencies and increased costs. The transportation and storage systems are often inadequate, causing food grains to spoil.
- Financial Burden on the Government: The FCI's operations result in high fiscal deficits due to the subsidies involved in procuring food grains at MSP (Minimum Support Price) and storing them. This puts pressure on government resources and impacts other sectors.
- High Storage and Wastage Costs:
  FCI maintains an extensive network of storage facilities, but many are outdated and inefficient, leading to wastage. A

significant amount of food grains remain unsold or wasted due to inadequate storage systems.

- Limited Private Sector Participation: FCI'smonopolyonfoodgrainprocurement and distribution limits the participation of the private sector. Opening up the market could lead to better competition, efficiency, and improved resource management.
- Lack of Transparency and Corruption: The system has often been criticized for its lack of transparency and corruption. There have been allegations of inefficiencies and malpractices in the procurement process, affecting the distribution of food grains to the intended beneficiaries.

#### 4. Political Aspect

Politically, reforms to FCI are often delayed due to the strong influence of vested interests and political motivations. Subsidies for the poor, the MSP system, and food distribution networks are politically sensitive, making reforms difficult to implement.

#### 5. Geographical Context

 In rural areas, FCI plays a critical role in ensuring food access, especially during lean seasons. However, in urban areas, the reliance on FCI's distribution system is lesser, leading to regional disparities in food access and delivery.

#### 6. Social Perspective

 The inefficiencies of FCI affect food security, particularly for marginalized communities. While FCI aims to ensure affordable food to the poor, mismanagement and food wastage contribute to inequality in food access.

#### 7. Examples and Relevant Data:

 Example: In 2020, FCI faced challenges in distributing food grains during the COVID-19 pandemic lockdown. While the government announced free food grain

distribution, logistical challenges led to delays and inefficiencies in reaching vulnerable populations.

 Data: As of 2023, FCI holds over 80 million tonnes of food grains in storage, much of which is in inadequate facilities. The wastage due to poor storage conditions is estimated at around 10–15%.

#### 8. Conclusion:

Reforming the FCI is essential for improving food security and ensuring efficient resource allocation. Key reforms should include modernizing storage facilities, reducing reliance on subsidies, increasing private sector involvement, and addressing transparency issues. Streamlining these processes can enhance the effectiveness of food security programs, reduce wastage, and ease the financial burden on the government.

#### **Contract Farming**

#### 9. Introduction:

Contract farming is a system where farmers agree to produce crops or livestock as per the terms set by a buyer, typically a company or processor, who guarantees a market for the produce at predetermined prices. This system can offer financial security for farmers but also presents challenges in terms of fair pricing, bargaining power, and implementation.

#### **10. Expert Opinions:**

- T. N. Srinivasan (Economist, Yale University): Srinivasan emphasizes that contract farming can offer stability and improved income for farmers by linking them to markets, but it requires strong institutional frameworks and legal safeguards to prevent exploitation.
- Shanta Kumar (Former Union Minister):
  Kumar highlights the importance of

contract farming in reducing middlemen's role and ensuring better prices for farmers, but also warns about the risks of small farmers being left out of formal agreements due to lack of bargaining power.

#### 11. Key Points:

- Increased Market Access: Contract farming can provide farmers with a direct market for their produce, reducing dependence on volatile market prices. It ensures a guaranteed buyer and often a pre-agreed price.
- Risk Mitigation: By guaranteeing a market and price, contract farming reduces the risk for farmers, particularly in terms of price fluctuations and uncertain demand for their products.
- Improved Agricultural Practices: Contract agreements often come with technical support from buyers, which can lead to the adoption of improved farming techniques, better quality produce, and higher yields.
- Potential Exploitation of Farmers: Smaller farmers, who lack bargaining power, may be forced into unfavorable terms, leading to exploitation. Buyers may impose stringent conditions or unfair prices, limiting the benefits for the farmer.
- Dependency on Buyers: Farmers under contract farming may become heavily dependent on a single buyer for their income, which could lead to challenges if the buyer reneges on the agreement or reduces prices.

#### 12. Political Aspect

 Governments need to regulate contract farming to ensure fair practices, especially for small and marginal farmers. Without proper oversight, contract farming could exacerbate inequalities in the agricultural sector.

#### 13. Geographical Context

 Contract farming is more prevalent in certain regions, such as Punjab and Haryana, where agricultural productivity

is higher and there is more infrastructure to support such systems. In less developed regions, it may be harder for farmers to access contract farming opportunities.

#### 14. Social Perspective

 While contract farming can improve income for farmers, it may also marginalize small-scale or resourcepoor farmers who are unable to enter into formal contracts due to a lack of resources or literacy.

#### 15. Examples and Relevant Data:

- Example: In Punjab, contract farming is increasingly being used for crops like tomatoes and potatoes, where large agribusiness firms provide technical support and guarantee markets. However, challenges remain in ensuring fair pricing and contract enforcement.
- Data: The Ministry of Agriculture reports that contract farming covers about 1.5% of total agricultural production in India, but its reach is expanding with increasing investments in agri-business sectors.

#### 16. Conclusion

Contract farming can be an effective tool for improving agricultural productivity, income stability, and market access for farmers. However, its success depends on creating a robust regulatory framework that protects farmers' rights, promotes fair practices, and ensures equitable access to resources. To maximize its potential, policies must focus on inclusivity, transparency, and reducing the power imbalance between farmers and buyers.

#### Food Processing Industry

#### 1. Introduction

 The food processing industry involves the transformation of raw agricultural products into consumable food items through various processes like packaging, preservation, and value addition. It is crucial for ensuring food security, reducing wastage, increasing shelf life, and creating employment opportunities. In India, the industry holds significant potential due to the country's large agricultural base, yet faces challenges related to infrastructure, technology, and policy.

#### 2. Expert Opinions:

- Dr. Montek Singh Ahluwalia (Former Deputy Chairman, Planning Commission): Ahluwalia stresses the importance of strengthening the food processing sector to increase valueadded agricultural exports and reduce food wastage, noting that policy support is essential for modernization.
- Ramesh Chand (Member, NITI Aayog): Chand highlights that food processing can drive rural development by adding value to local crops and generating rural employment, but challenges like inadequate cold chain infrastructure and access to finance need to be addressed.

#### 3. Key Points:

- Economic Contribution: The food processing industry in India contributes significantly to the GDP, providing employment to millions and fostering the growth of related sectors like packaging, logistics, and retail.
- Reducing Food Wastage: India loses a considerable amount of food due to lack of adequate processing and storage infrastructure. The food processing industry helps in reducing such wastage by improving storage conditions and increasing shelf life.
- Value Addition and Exports: By processing raw agricultural produce, the industry adds value and makes products suitable for both domestic consumption and export. India is a major exporter of processed food products like spices, rice, and fruit juices.

- Infrastructure and Technology Gaps: The industry faces significant challenges due to outdated infrastructure, poor cold chain logistics, and insufficient technology adoption. These gaps hinder the growth of the sector and limit its potential.
- Policy Support and Government n Schemes: The government has implemented schemes like the Pradhan Mantri Kisan Sampada Yojana (PMKSY) provide financial support and to infrastructure development for the food processing industry. These schemes aim to modernize the sector and improve its global competitiveness.

#### 4. Political Aspect

 Food processing policies are often influenced by political considerations, such as subsidies, support for small-scale processors, and the need for balancing urban and rural interests. There are also concerns about the impact of large processors on traditional food systems.

#### 5. Geographical Context

food processing industry is The n developed in states with more better infrastructure and agricultural productivity, such as Maharashtra, Punjab, and Uttar Pradesh. Rural areas, however, face challenges in accessing the benefits of food processing due to poor infrastructure and low investment.

#### 6. Social Perspective

The industry provides employment opportunities in rural areas, especially for women and small-scale producers. However, there are concerns about the concentration of benefits in large companies, with small and medium enterprises often struggling to compete.

#### 7. Examples and Relevant Data:

 Example: The Indian dairy industry, particularly Amul, is a success story of food processing, transforming raw milk into a variety of processed products, ranging from butter to ice cream. This has created a massive market both domestically and internationally.

 Data: According to the Ministry of Food Processing Industries (MOFPI), India's food processing sector is expected to reach a market size of \$470 billion by 2025, with a growth rate of 8% annually.

#### 8. Conclusion

The food processing industry has the potential to significantly boost India's agricultural economy by reducing food wastage, adding value to raw produce, and creating jobs. However, its growth is impeded by infrastructure gaps, lack of modernization, and policy hurdles. To fully realize its potential, India needs to focus on improving logistics, technology adoption, and access to finance, while continuing to provide policy support for both large and small processors.

#### Doubling Farmers' Income and Government Schemes

#### 1. Introduction

Doublingfarmers'incomeisacriticaltarget set by the Indian government to ensure the financial stability and well-being of the farming community. This goal, aimed at enhancing agricultural productivity and ensuring better remuneration for farmers, has been set for 2022 but faces significant challenges. Government schemes play a key role in achieving this target by providing financial assistance, promoting technology adoption, and improving infrastructure.

#### 2. Expert Opinions:

 Dr. Ramesh Chand (Member, NITI Aayog): Chand emphasizes the need for increasing the value added to agricultural products through diversification, improved irrigation techniques, and

reducing input costs as essential strategies for doubling farmers' income.

Ashok Dalwai (CEO, National Rainfed Area Authority): Dalwai highlights the role of efficient resource management and improved marketing systems in increasing farmers' income. He suggests that integrating farmers into global supply chains can lead to better pricing and greater market access.

#### 3. Key Points:

- Increase in Agricultural Productivity: Improving yield per hectare through the adoption of modern farming practices, high-yielding varieties, and precision farming is crucial for increasing farmers' income. Initiatives like soil health cards and micro-irrigation systems aim to boost productivity.
- Diversification of Income Sources: Encouraging crop diversification, livestock farming, and agro-processing industries can help farmers generate multiple income streams, making them less reliant on a single crop.
- Improved Market Access: Developing infrastructure like mandis (markets), cold storage, and transport facilities can reduce post-harvest losses and ensure better prices for produce, thereby directly increasing income.
- Government Schemes for Financial Support: Schemes such as Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) provide direct income support to farmers, while the PM Fasal Bima Yojana offers insurance against crop failure. These schemes cushion farmers against income volatility.
- Promotion of Agricultural Technology: Programs like the National Mission on Agricultural Extension and Technology (NMAET) promote technology adoption, such as precision agriculture and farm mechanization, to increase productivity and reduce costs.

#### 4. Political Aspect

 Politically, the success of incomedoubling schemes depends on balancing support for farmers with fiscal responsibility. Political pressures often lead to populist measures such as loan waivers, which provide temporary relief but do not address long-term income growth.

#### 5. Geographical Context

 States with advanced agricultural infrastructure, like Punjab and Haryana, are more likely to achieve higher growth in farmers' income. However, states like Bihar, Uttar Pradesh, and Odisha face challenges due to underdeveloped farming practices and lack of market connectivity.

#### 6. Social Perspective

 Ensuring that farmers from marginal and small-scale backgrounds benefit from income-doubling schemes is crucial. While large farmers may benefit from subsidies and schemes, smallholders often struggle to access these resources due to lack of awareness or infrastructure.

#### 7. Examples and Relevant Data:

- Example: The PM-KISAN scheme, launched in 2019, provides ₹6,000 annually to small and marginal farmers, directly supporting their income and helping them cover basic agricultural expenses.
- Data: According to the Economic Survey 2020-21, farmers' income grew at an average annual rate of 2.1% between 2016 and 2021, which falls short of the 10% growth required to double income by 2022.

#### 8. Conclusion

Doubling farmers' income requires a comprehensive approach involving improved agricultural practices, better market access, financial support, and infrastructure development. While government schemes like PM-KISAN and crop insurance have provided some relief, sustained efforts are needed to address underlying issues such as low productivity, inadequate infrastructure, and unequal access to resources. Focused policy interventions, alongside technological advancements and improved market integration, are key to achieving this goal.

#### Crop Shifting for Improved Water Use and Nutritional Productivity

#### 1. Introduction

Crop shifting refers to the practice of n changing the cropping patterns in a specific area to optimize resource use, particularly water, and improve the nutritional value of agricultural produce. In regions facing water scarcity, shifting towards less water-intensive crops can significantly improve water use efficiency. Additionally, adopting nutrient-dense crops can contribute to better food security and overall health. In India, crop shifting has gained importance due to the increasing pressure on water resources and the need for sustainable agricultural practices.

#### 2. Expert Opinions:

- Dr. M.S. Swaminathan (Agricultural Scientist): Swaminathan advocates for the adoption of water-efficient and nutritionally enriched crops like millets, pulses, and legumes, which require less water compared to traditional crops like rice and wheat, while also addressing malnutrition.
- Dr. Ramesh Chand (Member, NITI Aayog): Chand stresses the need for promoting crop diversification and efficient irrigation techniques to cope with the challenges of climate change and water scarcity. He suggests that crop shifting can be a key strategy for managing water resources sustainably.

#### 3. Key Points:

 Water Use Efficiency: Shifting from water-intensive crops, like rice and sugarcane, to drought-tolerant crops such as millets, pulses, and oilseeds can significantly reduce water consumption. These crops require less water for growth, thus promoting more sustainable water use in agriculture.

- Climate Resilience: Crop shifting can help farmers adapt to changing climatic conditions by selecting crops that are better suited to the altered weather patterns. For example, shifting from traditional crops to drought-resistant varieties can reduce crop failures due to water shortages.
- Nutritional Benefits: Growing nutrientrich crops such as millets, legumes, and pulses can enhance the dietary diversity of local populations, addressing issues of malnutrition, particularly in rural areas. These crops are rich in proteins, vitamins, and minerals, contributing to better health outcomes.
- **Economic Viability:** Crop shifting can also be economically beneficial. Crops like millets and pulses are not only more water-efficient but can also be sold at competitive prices in both domestic and international markets. This shift can offer farmers new revenue streams.
- Government Support and Policy Interventions: The government has initiated schemes like the National Food Security Mission (NFSM) and Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) to encourage crop diversification and improve water management practices. These schemes provide financial for assistance irrigation systems, promoting crop shifting.

#### 4. Political Aspect

 The success of crop shifting policies depends on political will and the alignment of state and central government policies. While crop diversification is encouraged, state governments may face resistance due to the vested interests of traditional farming communities that rely on monoculture crops like rice and wheat.

#### 5. Geographical Context

 Cropshifting can be particularly beneficial in regions like Rajasthan, Gujarat, and Andhra Pradesh, where water scarcity is a major issue. These regions can benefit from shifting to crops that are more suited to arid conditions, such as pulses and millets.

#### 6. Social Perspective

Crop shifting can improve food security, especially for marginalized communities. However, farmers may require training and awareness programs to shift from conventional crops to more sustainable and profitable options, ensuring that the transition does not affect their livelihoods.

#### 7. Examples and Relevant Data:

- Example: In Haryana, farmers have started shifting from water-intensive crops like rice to crops like maize and mustard, which consume less water, thus helping to conserve groundwater resources.
- Data: According to the Ministry of Agriculture and Farmers' Welfare, millets, which are more drought-resistant and water-efficient, have been promoted under the National Food Security Mission. The demand for millets is expected to rise, offering farmers an opportunity to shift towards these crops.

#### 8. Conclusion:

Crop shifting is a promising strategy D to improve water use efficiency and nutritional productivity in agriculture. water-intensive By adopting less and nutritionally rich crops, farmers can contribute to sustainable water management and enhance food security. However, the successful implementation of crop shifting requires adequate policy support, infrastructure development, and farmer education to ensure that the transition is economically viable and socially inclusive.

#### Agricultural Produce – Logistics and Marketing Constraints

#### 1. Introduction

Agricultural produce in India faces n significant logistics and marketing constraints, hindering the efficiency supply chains and reducing of farmers' income. These constraints include inadequate infrastructure, poor transportation networks, market inefficiencies, and issues related to storage. These challenges exacerbate the post-harvest losses and prevent farmers from receiving fair prices for their produce, impacting food security and economic sustainability.

#### 2. Expert Opinions:

- **Dr. Ramesh Chand (Member, NITI Aayog):** Chand emphasizes that addressing the inefficiencies in logistics and marketing, such as improving the cold chain infrastructure and eliminating middlemen, is crucial to ensuring that agricultural produce reaches consumers in a timely and cost-effective manner.
- Prof. Ashok Gulati (Agricultural Economist): Gulati suggests that India's agricultural marketing systems need urgent reforms, including strengthening rural infrastructure, enabling farmers to access better markets, and promoting direct linkages between farmers and consumers.

#### 3. Key Points:

- Inadequate Infrastructure: The lack of cold storage facilities, warehouses, and processing units leads to high post-harvest losses. Inadequate rural infrastructure, such as roads and transportation systems, further limits the movement of produce from farms to markets, particularly in remote areas.
- High Transportation Costs: Poor road networks, inadequate transport facilities, and delays in transit increase the cost of

transportation for agricultural products. These high costs reduce the profitability of farmers and increase the price burden on consumers.

- Lack of Market Integration: Fragmented and unorganized agricultural markets often result in inefficiencies, where farmers have limited access to fair market prices. The presence of middlemen in the supply chain further drives up costs and reduces farmers' income.
- Market Access and Information Gap: Many farmers lack access to real-time market information, which leads to poor decision-making regarding the timing and pricing of their produce. The absence of a robust marketing platform that connects farmers to distant markets further limits their opportunities to sell at competitive prices.
- Regulatory Constraints: Agricultural marketing is often hampered by outdated laws and policies. The Agricultural Produce Market Committees (APMC) Act, for example, restricts farmers from selling their produce outside of designated mandis (markets), limiting their market access and bargaining power.

#### 4. Political Aspect

Politically, reforms in agricultural marketing face resistance from vested interests such as local traders and middlemen, who benefit from the current system. Additionally, state-level variations in policies create confusion and inefficiencies in inter-state agricultural trade.

#### 5. Geographical Context

In India, regions like Punjab, Haryana, and n Uttar Pradesh, with well-established practices, agricultural face fewer logistical challenges. However, in states like Odisha, Bihar, and Madhya Pradesh, infrastructure and logistical poor constraints significantly hinder the effective distribution of agricultural produce.

#### 6. Social Perspective

 The inefficiencies in logistics and marketing exacerbate income inequalities, as farmers from rural and remote areas often receive lower prices due to lack of access to better markets. Meanwhile, consumers face inflated prices due to inefficiencies in the supply chain.

#### 7. Examples and Relevant Data:

- Example: The introduction of the eNAM (National Agriculture Market) platform aims to connect farmers with multiple buyers across states. However, its success is still limited by infrastructural and technical barriers, such as internet access in rural areas.
- Data: According to the 2018 report by the Ministry of Agriculture, around 40– 50% of fruits and vegetables are wasted due to the lack of proper storage and transportation infrastructure, leading to losses worth approximately ₹92,000 crore annually.

#### 8. Conclusion

The logistics and marketing constraints in India's agricultural sector require urgent reforms to ensure better efficiency, reduce post-harvest losses, and improve farmers' access to markets. Strengthening infrastructure, reducing the role of intermediaries, and improving market access through technology and policy reforms are critical steps to addressing these challenges. By tackling these issues, India can enhance the profitability of farming, reduce food waste, and improve food security.

#### The Essential: Minimum Support Price (MSP)

#### 1. Introduction

 The Minimum Support Price (MSP) is a critical aspect of India's agricultural policy aimed at ensuring fair prices for farmers.

It serves as a safety net, guaranteeing that farmers receive a minimum price for their produce, thus protecting them from market fluctuations and ensuring food security. Despite its importance, the MSP system faces challenges related to its implementation and effectiveness.

#### 2. Expert Opinions:

- Dr. Ramesh Chand (Member, NITI Aayog): Chand argues that MSP plays a crucial role in ensuring price stability for farmers, but its impact is limited due to poor implementation, especially in regions where farmers do not have access to MSP markets.
- Prof. Ashok Gulati (Agricultural Economist): Gulati emphasizes that while MSP is essential for agricultural sustainability, it must be accompanied by reforms in the marketing system and improved procurement infrastructure to make it more effective.

#### 3. Key Points:

- Protection Against Price Fluctuations: MSP provides a safety net for farmers by ensuring they are guaranteed a minimum price for certain crops, which reduces the risk of price volatility and market exploitation.
- Limited Reach: Despite the importance of MSP, it is often not accessible to all farmers, particularly those in remote areas where procurement infrastructure is lacking, resulting in many not benefiting from the guaranteed price.
- Market Distortions: While MSP is designed to help farmers, it can sometimes distort the market by incentivizing overproduction of certain crops, leading to a glut in the market and underproduction of others.
- FiscalBurden: The MSP system, especially when the government procures large quantities of crops, places a significant financial burden on the government, leading to higher food subsidies and strain on the exchequer.

 Limited Crop Coverage: MSP is currently applicable to only a few crops (mostly cereals like wheat and rice), leaving many farmers without MSP protection for their diverse produce.

#### 4. Political Aspect

 The MSP system is politically sensitive, with political parties often promising higher MSPs to gain favor with farmers, leading to inconsistencies in policy and implementation.

#### 5. Geographical Context

 In states like Punjab and Haryana, MSP implementation is relatively successful due to strong procurement systems, whereas in other states, farmers face challenges in accessing MSP markets.

#### 6. Social Perspective

- While MSP is intended to benefit farmers, the uneven distribution of benefits can exacerbate social inequalities, as marginalized farmers may not have the same access to MSP schemes.
- Implementation Challenges
- The lack of transparent and efficient procurement systems, coupled with corruption and logistical issues, often results in farmers not receiving the MSP even when it is promised.
- Technological Solutions
- Incorporating technology, such as e-NAM, could improve the transparency and efficiency of MSP implementation by facilitating direct access to markets and procurement systems.

#### 7. Examples and Relevant Data:

- Example: The MSP system's success is most visible in Punjab and Haryana, where wheat and rice procurement is high. However, other states like Bihar struggle with poor MSP access.
- Data: According to the Ministry of Agriculture, around 2–3% of total agricultural produce in India is procured at MSP, indicating the limited scope of its reach.

**INDIAN ECONOMY PART - 2** 

#### 8. Conclusion

The Minimum Support Price system is a vital tool for protecting farmers' interests and ensuring food security. However, its effectiveness is limited by poor implementation, inadequate infrastructure, and political interference. Expanding its reach, improving procurement systems, and making MSP more inclusive could enhance its impact on farmers and the agricultural economy.

#### Smart PDS Scheme: A Bold Initiative for Inclusion

#### 1. Introduction

The Smart Public Distribution System n (PDS) is a transformative initiative aimed at improving the efficiency and transparency of India's food distribution system. By leveraging technology, this scheme seeks to ensure that food grains and other essential commodities reach the intended beneficiaries without reducing corruption leakage, and enhancing inclusion. The Smart PDS is part of the broader effort to modernize the PDS and make it more responsive to the needs of the marginalized populations.

#### 2. Expert Opinions:

- Dr. Ramesh Chand (Member, NITI Aayog): Chand highlights that digitizing the PDS can significantly reduce inefficiencies and ensure better targeting of subsidies, thus making the system more inclusive and accessible to the poor.
- Prof. Ashok Gulati (Agricultural Economist): Gulati suggests that integrating technology into PDS is crucial for enhancing transparency and reducing leakages, but it requires continuous monitoring and capacity-building at the grassroots level to be effective.

#### 3. Key Points:

- Digitalization for Transparency: The Smart PDS relies on digital technologies like Aadhaar, biometric authentication, and Point of Sale (PoS) machines to ensure that food grains are distributed directly to beneficiaries without intermediaries.
- Targeted Delivery: The use of Aadhaar linking and digital records helps in better identification of the beneficiaries, ensuring that food reaches those who need it the most, particularly marginalized communities.
- Reducing Corruption and Leakages: Smart PDS aims to curb the leakages and inefficiencies that have historically plagued the system, ensuring that subsidies are not misappropriated and food grains are not diverted.
- Improved Access and Efficiency: The use of technology ensures that distribution is quicker and more efficient, reducing delays and ensuring that food reaches beneficiaries on time, especially in remote areas.
- Mobile-based Monitoring: The introduction of mobile applications allows for real-time monitoring and grievance redressal, providing a platform for citizens to report issues and track their entitlements.

#### 4. Political Aspect

 The implementation of the Smart PDS is politically sensitive, as it requires significant investment in infrastructure and may face resistance from vested interests benefiting from the old system.

#### 5. Geographical Context

While urban areas have seen quicker implementation of the Smart PDS, rural and remote areas face challenges in terms of connectivity, infrastructure, and technology adoption, which limits its reach.

#### 6. Social Perspective

- The Smart PDS is designed to benefit vulnerable sections of society, including the poor, scheduled castes, and scheduled tribes, ensuring they have equitable access to food security.
- Economic Impact
- By reducing inefficiencies in food distribution, the Smart PDS can lead to significant savings for the government, which can be redirected towards other social welfare schemes.

#### 7. Technology Integration Challenges

 Despite its promise, there are challenges in the implementation of technology, including network issues, data inaccuracies, and the need for digital literacy among beneficiaries.

#### 8. Examples and Relevant Data:

- Example: The Smart PDS system has been piloted in several states like Tamil Nadu, Haryana, and Uttar Pradesh, where biometric authentication and digital records have improved delivery and reduced corruption.
- Data: According to the Ministry of Consumer Affairs, the implementation of Smart PDS in these states has resulted in a reduction of 10–20% in the diversion of food grains, improving the efficiency of the system.

#### 9. Conclusion

The Smart PDS Scheme is a bold and innovative step toward ensuring food security and inclusion for all citizens, particularly marginalized groups. By incorporating technology, it has the potential to address the systemic inefficiencies and corruption in the traditional PDS. However, its success depends on overcoming implementation challenges, ensuring universal access to technology, and continuous monitoring to maintain its transparency and efficiency.

#### Shanta Kumar Panel & Public Distribution System (PDS)

#### 1. Introduction

The Shanta Kumar Panel was established by the Government of India in 2015 to review the functioning of the Public Distribution System (PDS) and suggest reforms for improving food security and efficiency. Chaired by former Himachal Pradesh Chief Minister Shanta Kumar, the panel aimed to address issues like inefficiency, corruption, and leakage within the PDS, while recommending a shift towards more effective delivery systems.

#### 2. Expert Opinions:

- Shanta Kumar (Panel Chair): Kumar emphasized the need for streamlining the PDS, advocating for a shift towards direct benefit transfers (DBT) and targeting only the poorest families to ensure that food subsidies reach the intended beneficiaries.
- Prof. Ashok Gulati (Agricultural Economist): Gulati endorsed the idea of rationalizing the PDS and targeting subsidies more efficiently, but cautioned that implementing such reforms would require a robust infrastructure to prevent any adverse impacts on the poor.

#### 3. Key Points:

- PDS Reform Recommendations: The panel recommended reducing the number of beneficiaries under the PDS, focusing on the most vulnerable sections of society, and shifting to a more targeted system to avoid wastage.
- Direct Benefit Transfer (DBT): One of the panel's key proposals was the introduction of DBT for food subsidies, allowing for cash transfers to the bank accounts of beneficiaries instead of physical food grains, thereby improving efficiency and reducing leakages.

**INDIAN ECONOMY PART - 2** 

- Privatization of Distribution: The panel suggested allowing private players to take part in the distribution of food grains, which could help in improving supply chain management, reducing inefficiency, and ensuring better quality control.
- Streamlining the Foodgrain Distribution Process: It recommended eliminating duplicate and ghost beneficiaries, improving database management, and ensuring that food grains are delivered in a timely manner.
- Reduction of Overreach in Subsidy Programs: The panel proposed limiting the scope of food subsidy programs to ensure that only the deserving are covered, addressing concerns about inefficiencies in the allocation of resources.
- Geographical Inequality: The panel acknowledged regional disparities in PDS implementation, urging for reforms that would adapt the distribution system according to local needs and challenges.
- Social Impact: The recommendations aim to ensure that the food security system becomes more efficient, thus benefiting the poor and marginalized sections without diverting resources to non-deserving recipients.
- Political Challenges: Political resistance from various states and interest groups, particularly those benefiting from the old system, remains a significant barrier to implementing the panel's suggestions.
- Government's Response: The government's response to the panel's recommendations has been cautious, with some states being more receptive to reforms like DBT, while others express concerns about implementation challenges.
- Economic Efficiency: The proposed changes are expected to reduce wastage, lower subsidy costs, and make the distribution system more economically efficient, ensuring better allocation of resources.

#### 4. Examples and Relevant Data:

- Example: In some states like Haryana, the shift to cash transfers and DBT under the Shanta Kumar Panel's suggestions has been tested, showing positive results in reducing leakages.
- Data: According to government estimates, the implementation of DBT in various welfare schemes has helped save over ₹10,000 crore annually by cutting down on inefficiencies.

#### 5. Conclusion

The Shanta Kumar Panel's recommendations for PDS reforms aim to tackle systemic inefficiencies, reduce corruption, and ensure that food subsidies reach the most vulnerable populations. While some reforms, like DBT, have been implemented successfully in parts of India, political, infrastructural, and social challenges remain significant. A more targeted and streamlined PDS system, if fully implemented, could lead to a more efficient and equitable food security system.

#### Food Security – Robust Farm Sector Growth

#### 1. Introduction

Food security in India is inextricably linked to the growth of the agricultural sector, as it directly impacts the availability, accessibility, and affordability of food. A robust farm sector can ensure sufficient production, improve rural livelihoods, and reduce poverty, thus contributing significantly to national food security. Enhancing agricultural productivity and addressing systemic challenges are key to strengthening food security in India.

#### 2. Expert Opinions:

Dr. Ramesh Chand (NITI Aayog Member): Chand emphasizes that

achieving food security requires sustained growth in agriculture, which can be achieved through technological advancements, better infrastructure, and targeted government support.

Prof. Ashok Gulati (Agricultural Economist): Gulati suggests that the farm sector's growth should focus on diversification, crop rotation, and improving value-added processes to make agriculture more sustainable and efficient in ensuring food security.

#### 3. Key Points:

- Increased Agricultural Productivity: Growth in the agricultural sector through improved farming practices, better seeds, and advanced technology can increase food production, making food more abundant and accessible.
- Investment in Rural Infrastructure: Enhancing rural infrastructure such as roads, storage facilities, and cold chains can help reduce post-harvest losses and ensure food availability throughout the year, stabilizing food supply.
- Climate-Resilient Farming: Developing climate-resilient farming practices, such as drought-resistant crops and efficient water management techniques, is crucial to safeguarding food security in the face of climate change challenges.
- Diversification and Value Addition: Encouraging diversification of crops and promoting food processing industries can enhance the economic viability of farming and create a more stable food supply system.
- Government Support and Policy Reforms: Policies such as Minimum Support Price (MSP), direct cash transfers, and crop insurance schemes can provide farmers with the necessary security and incentives to increase production and improve food availability.
- Public Distribution System (PDS): Strengthening the PDS system can ensure that food reaches the poor and marginalized sections of society. Reforms, such as digitizing the PDS, can enhance its efficiency and reduce leakage.

- Sustainable Agriculture Practices: A focus on organic farming, agroecology, and reduced chemical dependency can promote sustainable food production, ensuring long-term food security while protecting the environment.
- Market Accessibility: Ensuring farmers have access to national and international markets can improve their income, allowing them to produce more food and invest in better production techniques.
- Technological Integration: Use of technology like precision farming, remote sensing, and artificial intelligence in agriculture can enhance yield per hectare, making food production more efficient.
- Political Will and Coordination: Coordinating with state governments, local bodies, and farmers' associations to align policies with ground realities can ensure that food security measures are effectively implemented.

#### 4. Examples and Relevant Data:

- Example: The Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) has made significant strides in improving irrigation facilities in India, boosting crop productivity and ensuring better water use, crucial for food security.
- Data: According to the Economic Survey of India 2021-22, agriculture grew at 3.4% in 2020-21, providing essential support to the economy during the COVID-19 pandemic and highlighting its importance for food security.

#### 5. Conclusion

A robust farm sector growth is essential for ensuring food security in India. This can be achieved by boosting agricultural productivity, improving rural infrastructure, adopting sustainable practices, and implementing supportive policies. Strengthening the agricultural sector will not only enhance food availability but also promote inclusive growth, poverty reduction, and overall economic development.

Organic Farming – Silver Lining with a Question Mark

#### 1. Introduction

Organic farming in India has gained n significant attention as a sustainable and environmentally friendly approach to agriculture. With growing consumer demand for chemical-free produce, it is seen as a potential solution to the degradation environmental caused by conventional farming. However, challenges such as high costs, limited scalability, and market inefficiencies raise questions about its long-term viability as a mainstream agricultural practice.

#### 2. Expert Opinions:

- Dr. Ramesh Chand (NITI Aayog Member): Chand argues that while organic farming offers environmental benefits, its potential for large-scale adoption is hindered by issues like lower yields and high input costs. He advocates for integrated farming systems that combine organic methods with conventional agriculture to ensure food security.
- Prof. Ashok Gulati (Agricultural Economist): Gulati highlights the need for policy support and market infrastructure to make organic farming more profitable. He stresses that promoting organic farming should go hand in hand with increasing productivity and improving farmers' income.

#### 3. Key Points:

- Environmental Benefits: Organic farming reduces soil degradation, minimizes pesticide use, and promotes biodiversity. It is seen as a solution to environmental concerns associated with chemical-intensive farming.
- Higher Production Costs: Organic farming typically requires higher input costs, such as organic seeds and natural fertilizers, making it less cost-effective

compared to conventional farming. This creates a challenge in its widespread adoption.

- Lower Yields: Organic farming often results in lower crop yields than conventional farming due to the absence of synthetic fertilizers and pesticides. This can affect overall food security and sustainability.
- Market Demand and Pricing: While there is an increasing demand for organic products, they often come at higher prices, limiting their accessibility to a broader section of society. This creates a niche market but does not ensure mass adoption.
- Limited Scalability: Organic farming's scalability is limited by factors such as labor intensity, lack of organic inputs, and certification costs. This makes it difficult to meet the growing demand for organic produce at the national level.
- Policy Support: There is a need for stronger policy frameworks that provide subsidies, technical support, and incentives to farmers transitioning to organic farming. However, current policies remain inadequate in addressing these needs.
- Certification and Standardization Issues: The certification process for organic farming is expensive and cumbersome, making it difficult for small farmers to access organic markets. This results in a lack of standardization and inconsistency in organic product quality.
- Transition Period Challenges: The transition from conventional to organic farming involves a period of lower productivity, during which farmers may face income instability. This discourages many farmers from making the switch.
- Regional Disparities: Organic farming is more viable in certain regions with suitable climates and soil conditions. However, its widespread adoption across diverse agro-climatic zones in India remains a challenge.

Sustainability and Long-Term Impact: While organic farming can improve soil health in the long term, its sustainability in feeding the growing population remains uncertain unless productivity can be improved without compromising its eco-friendly practices.

#### 4. Examples and Relevant Data:

- **Example:** The state of Sikkim has become India's first fully organic state, showcasing the potential for large-scale organic farming. However, the state faces challenges in maintaining the balance between organic certification, yield levels, and market demands.
- Data: According to the Ministry of Agriculture and Farmers Welfare, India has around 2.7 million hectares of land under organic certification, which constitutes about 1.5% of the country's total cultivated area. While the area is growing, it still lags behind many other countries.

#### 5. Conclusion

farming offers significant Organic n environmental benefits and can be a sustainable agricultural practice, but its widespread adoption faces several challenges. High production costs, lower yields, limited scalability, and inadequate market infrastructure are key obstacles that need to be addressed. While it may play a vital role in the future of agriculture, its potential to become a mainstream practice hinges on overcoming these issues through policy support, technological advancements, and a balanced approach that integrates both organic and conventional farming methods.

#### National Agriculture Code (NAC) in India

#### 1. Introduction:

 The National Agriculture Code (NAC) is a proposed framework aimed at transforming India's agricultural sector by streamlining regulations, improving transparency, and ensuring better governance in the agricultural value chain. The code seeks to address various challenges such as regulatory inefficiencies fragmentation, in agricultural markets, and of lack infrastructure, and aims to create a more conducive environment for farmers, consumers, and investors.

#### 2. Expert Opinions:

- Dr.RameshChand(Member,NITIAayog): Dr. Chand views the NAC as a significant step toward modernizing agricultural laws, which are currently outdated and fragmented across different states. He believes the NAC could improve market access, reduce regulatory burdens, and enhance efficiency.
- Prof. Ashok Gulati (Agricultural Economist): Gulati sees the NAC as a vital tool to encourage investment in agriculture by creating a uniform set of rules. He argues that it could help integrate fragmented markets and provide a more systematic approach to agricultural reforms.

#### 3. Key Points:

- Unified Legal Framework: The NAC seeks to consolidate and streamline various laws related to agriculture, creating a uniform regulatory environment across states. This could reduce complexity and improve ease of doing business in the agriculture sector.
- Market Reforms: The code aims to improve the functioning of agricultural markets by facilitating direct transactions between farmers and consumers, reducing the role of intermediaries, and promoting digital platforms for market linkage.
- Promotion of Contract Farming: The NAC proposes measures to promote contract farming, which can provide farmers with guaranteed prices and reduce their risks. This can enhance the bargaining power of farmers and ensure a stable income.

- Improved Infrastructure and Storage: The code emphasizes the need for better infrastructure, including cold storage, warehouses, and transportation networks, to reduce post-harvest losses and ensure the timely movement of produce to markets.
- Regulation of Agro-Processing: The NAC focuses on creating a regulatory frameworktoencourageagro-processing industries, which could add value to agricultural produce, create jobs, and reduce wastage.
- Sustainability and Environmental Considerations: The NAC emphasizes sustainable agricultural practices, including water conservation, organic farming, and reducing environmental impact, aligning with global environmental goals.
- Digitalization of Agriculture: The code advocates for the use of technology in agriculture, such as digital platforms for market information, farm management tools, and access to credit, which can help improve productivity and efficiency.
- Farmer Protection and Welfare: The NAC proposes mechanisms to protect the rights of farmers, ensuring fair pricing, transparency in contracts, and access to grievance redressal mechanisms.
- Incentives for Private Investment: By providing a clear and uniform legal structure, the NAC is designed to attract private investment in agricultural infrastructure, technology, and processing, which can enhance productivity and market access.
- Challenges in Implementation: The successful implementation of the NAC faces challenges, including resistance from states, varying local agricultural

practices, and the need for significant investments in infrastructure and technology.

#### 4. Examples and Relevant Data:

- Example: The Agricultural Produce Market Committees (APMC) Act, which is one of the key regulations the NAC seeks to reform, restricts farmers from selling outside the designated mandis (markets). The NAC aims to allow farmers to sell directly to buyers, improving efficiency.
- Data: According to the Economic Survey of India 2020-21, the implementation of agricultural reforms, including those proposed in the NAC, could enhance farmers' income by up to 10-15% by improving market access and reducing middlemen's influence.

#### 5. Conclusion

The National Agriculture Code represents a significant attempt to overhaul India's agricultural regulatory framework, aiming for efficiency, transparency, greater and farmer welfare. While it offers substantial potential benefits, such as market reforms, better infrastructure, and sustainable practices, its success will depend on overcoming implementation challenges, including resistance political and infrastructural constraints. If successfully implemented, the NAC could modernize India's agriculture sector, improve farmers' incomes, and contribute to the broader goals of food security and rural development.



## MENTORS who make RANKERS



## GS CRASH COURS

Complete **GS MAINS** (Paper 1, 2, 3 *in* & 4) Revision & **Updation** 

HISTORY

PUB. AD.



MAINS

## S GS MA SERIES 20 MAINS REVISION

through QUESTIONS 1 Con

CRA



HICS & ESSAY



OPTION SOCIOLOGY **GEOGRAPHY** POL. SCIENCE LAW

ROGRAMME



GS SCORE, Second Floor, Metro Tower, 1B, Pusa Road, Karol Bagh, New Delhi - 110005 (Beside Karol Bagh Metro Station Gate No. 8)

TEST SERIES **Complete Revision of Ethics Syllabus** & Essay through Tests & Mentorship





#### **Start-up and Finance**

#### 1. Introduction

Start-ups are vital for economic growth, innovation, and job creation. However, one of the key challenges faced by start-ups in India is accessing finance. While there is an increasing focus on nurturing the start-up ecosystem, access to capital, both in the form of equity and debt, remains a significant hurdle. The financial landscape for startups includes venture capital (VC), angel investment, government schemes, and traditional bank loans.

#### 2. Expert Opinions:

- Niti Aayog (Government of India): Niti Aayog highlights the importance of financial support and access to capital for the growth of start-ups. It recommends improving access to earlystage funding and promoting alternative financing mechanisms like crowdfunding and peer-to-peer lending.
- Raghuram Rajan (Former RBI Governor): Rajan argues that while the start-up ecosystem in India has made significant strides, more needs to be done in terms of financial inclusion and improving the ease of access to funding for smaller, emerging ventures.

#### 3. Key Points:

- Venture Capital (VC) Funding: Venture capital is a primary source of funding for start-ups, especially during the early and growth stages. However, access to VC is often limited to high-potential ventures, and early-stage start-ups may find it difficult to attract attention from investors.
- Angel Investment: Angel investors, often wealthy individuals, provide funding in exchange for equity. Angel investment is crucial for early-stage start-ups that have high growth potential but lack traditional financing options. However, finding the right angel investors and building trust can be challenging for new entrepreneurs.

- Government Schemes and Incentives: The Indian government has launched several initiatives to support start-ups, such as the Start-up India Scheme, which offers tax exemptions, easier compliance, and financial support. The MUDRA scheme provides funding to micro-enterprises, while the Atal Innovation Mission (AIM) offers mentorship and funding to innovationdriven start-ups.
- Bank Financing and Credit Accessibility: Despite the availability of government schemes, traditional banks are often hesitant to lend to start-ups due to high risks. The lack of collateral, financial history, and the nascent stage of business makes it difficult for startups to access loans.
- Crowdfunding and Peer-to-Peer Lending: Crowdfunding platforms and peer-to-peer lending offer alternative ways for start-ups to raise capital. These platforms allow entrepreneurs to reach out to a broad base of individual investors, though they face challenges in terms of regulatory uncertainty and scalability.
- Financial Literacy and Planning: Many start-up founders lack financial literacy, which can hinder their ability to manage funds effectively and scale the business. Financial planning, budgeting, and understanding investment options are crucial for ensuring the longevity of start-ups.
- Investment-Ready Start-ups: Investors typically look for businesses with a solid business model, scalability, a strong team, and innovation. Many start-ups fail to meet these criteria, limiting their access to finance. Training and mentoring programs can help bridge this gap.
- Risk and Return for Investors: Start-ups are considered high-risk investments due to their inherent uncertainties. While venture capitalists and angel investors are willing to take on this risk, the potential for high returns also drives their interest in financing start-ups.

- Sector-Specific Challenges: Start-ups in sectors like agriculture, healthcare, and education often face additional challenges in accessing finance due to regulatory hurdles, market uncertainties, and limited investor interest in non-tech sectors.
- Post-Funding Challenges: Securing initial funding is often just the first step. Managing cash flow, meeting growth targets, and scaling the business to attract subsequent rounds of funding are additional challenges faced by start-ups after receiving financial backing.

#### 4. Examples and Relevant Data:

- Example: The Start-up India Scheme has facilitated over 50,000 startups across India, offering benefits such as tax exemptions and easier compliance procedures. Additionally, the government's FUND of Funds for Start-ups (FFS) has mobilized significant capital for start-ups in India.
- Data: As per the Economic Survey 2021– 22, India's start-up ecosystem has grown exponentially, with over 61,000 start-ups registered as of 2021. Venture capital funding in Indian start-ups increased by over 80% in 2020–21, reflecting growing investor interest.

#### 5. Conclusion:

While the start-up ecosystem in India n has grown significantly, access to finance remains a key constraint for many entrepreneurs. Government schemes, angel investments, and venture capital are essential for early-stage funding, but more needs to be done to bridge the gap between traditional financial institutions and start-ups. Enhancing financial literacy, improving the availability of debt financing, and fostering a robust crowdfunding ecosystem can significantly improve the financing landscape for start-ups.

#### Ease of Doing Business in India

#### 1. Introduction

The "Ease of Doing Business" (EoDB) refers to the regulatory environment in which businesses operate, focusing on factors like time, cost, and complexity of starting and running a business. India has made significant progress in improving its business climate, primarily through reforms that streamline regulatory enhance transparency, processes, encourage investment. These and improvements are vital for attracting both domestic and foreign investments, entrepreneurship, and fostering promoting economic growth.

#### 2. Expert Opinions:

- **Dr. Raghuram Rajan (Former RBI Governor):** Rajan stresses that the ease of doing business is a key driver of economic growth. By simplifying bureaucratic processes and improving infrastructure, India can attract more investment and foster job creation.
- Prof. Arvind Panagariya (Former Vice-Chairman, NITI Aayog): Panagariya argues that while India has made substantial progress, continued reforms are necessary to address the structural issues within its labor laws and tax systems, which still pose significant challenges to business operations.

#### 3. Key Points:

- Regulatory Reforms: The introduction of the Goods and Services Tax (GST) has unified the tax structure, eliminating state-level taxes and simplifying compliance. This reform has reduced the time and cost of doing business by addressing complexities in the tax system.
- Starting a Business: The National Portal for Registering Companies (SPICe) and Incorporation of Companies Act (2013)

have reduced the time needed to start a business, allowing entrepreneurs to register companies online with minimal paperwork.

- Construction Permits: India has n improved the ease of obtaining construction permits through the Online Building Permission System, streamlining the approval process for construction projects, thus reducing delays and costs.
- Credit Access: The Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) provides collateral-free loans to small businesses, easing access to credit and supporting the growth of MSMEs (Micro, Small, and Medium Enterprises).
- Tax Reforms: The Insolvency and Bankruptcy Code (IBC) and the Direct Tax Code (DTC) aim to make tax compliance simpler and more transparent, while also creating a more predictable regulatory framework.
- Digital Infrastructure: The Digital India Programme promotes the use of technology in business operations, from digital signatures to e-commerce, making business transactions quicker and more transparent.
- Labor Reforms: Labor law reforms, such as the Labour Codes (2020), aim to simplify compliance for businesses by consolidating and reducing the complexity of existing labor laws.
- Investment Facilitation: The Foreign Direct Investment (FDI) policy reforms and the creation of dedicated Invest India facilitation centers have enhanced India's attractiveness to foreign investors.
- Contract Enforcement: The Commercial Courts Act (2015) and the introduction of online case management systems have made contract enforcement quicker, improving India's position in global rankings for contract enforcement.
- State-Level Reforms: Many states have implemented their own EoDB

initiatives, such as the UP Investment Facilitation Centre and Maharashtra's "ease of doing business" cell, to attract investment and make business operations smoother at the regional level.

#### 4. Examples and Relevant Data:

- Example: The launch of the eBiz Portal by the Ministry of Commerce and Industry allows businesses to apply for various approvals online, cutting down the bureaucratic delays traditionally associated with regulatory compliance.
- Data: According to the World Bank's Doing Business 2020 report, India ranked 63rd among 190 countries, a substantial improvement from 142nd in 2014, reflecting the success of India's reforms in improving the ease of doing business.

#### 5. Conclusion

India has made significant strides in improving its ease of doing business, driven by regulatory reforms, enhanced digital infrastructure, and better access to finance. While challenges remain, such as the need for further simplification of labor laws and tax systems, continued help reforms will attract more investment, boost entrepreneurship, and promote sustainable economic growth. A consistent effort in policy and infrastructural reforms will ensure that India remains an attractive destination for businesses globally.

#### **Issues with MSMEs in India**

#### 1. Introduction

 Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in India's economy by contributing to employment, innovation, and export. However, despite their importance, MSMEs face several challenges that hinder their growth and

sustainability. Issues such as inadequate access to finance, lack of technology adoption, regulatory bottlenecks, and infrastructural weaknesses pose significant barriers to their development.

#### 2. Expert Opinions:

- Dr. Ramesh Chand (Member, NITI Aayog): Dr. Chand emphasizes the need for better credit access and policy reforms to facilitate the growth of MSMEs, particularly in rural and remote areas where they struggle with market connectivity and infrastructure.
- Prof. Arvind Panagariya (Former Vice-Chairman, NITI Aayog): Panagariya stresses the importance of improving the regulatory framework and fostering innovation within MSMEs to enhance their competitiveness, both domestically and internationally.

#### 3. Key Points:

- Access to Finance: MSMEs often face difficulties in obtaining credit due to a lack of collateral and a complex regulatory environment. Even with government schemes like MUDRA, many small enterprises find it challenging to secure funds.
- Lack of Technology Adoption: Many MSMEs still rely on outdated technology, affecting their productivity and ability to compete in the global market. Lack of awareness and high initial costs prevent them from adopting advanced technologies.
- Regulatory Bottlenecks: The complex and fragmented regulatory framework for MSMEs often leads to delays in compliance and costs related to tax filings, labor laws, and other legal requirements, increasing the administrative burden on these businesses.
- Market Access and Information Gaps: MSMEs in India often face challenges in accessing larger domestic and international markets. Limited market knowledge, poor brand recognition, and lack of digital marketing tools hinder their growth prospects.

- Infrastructural Constraints: Poor infrastructure, such as inadequate power supply, transportation issues, and insufficient industrial clusters, limits the operational efficiency of MSMEs. This also affects their cost structure and competitiveness.
- Skill Development Deficits: Many MSME workers lack the required skill sets, making it difficult for these enterprises to innovate or scale effectively. There is a need for targeted skill development programs to enhance productivity.
- Competitive Pressures: MSMEs often struggle to compete with larger, wellfunded enterprises due to limited financial resources, economies of scale, and market access. This makes it hard for them to grow and sustain their operations in the long term.
- High Compliance Costs: MSMEs face high costs of compliance with labor laws, environmental regulations, and taxes. These costs are disproportionately high compared to larger enterprises, which can afford to streamline their operations.
- Unpredictable Policy Environment: Frequent changes in government policies, especially in taxation and subsidies, create uncertainty for MSMEs. This lack of stability makes long-term planning and investment difficult for these businesses.
- Dependence on Traditional Markets: Many MSMEs continue to rely on traditional, localized markets, which limits their exposure to global demand and restricts growth. Diversifying into newer markets and digital platforms is often a challenge.

#### 4. Examples and Relevant Data:

Example: The MUDRA Yojana is one of the government's key initiatives to provide financial support to MSMEs, especially in the form of micro-credit, but many MSMEs still face difficulties in accessing these funds due to stringent lending criteria and bureaucratic hurdles.

Data: According to a report by the Ministry of MSME (2020), nearly 40% of MSMEs in India face financial distress, primarily due to limited access to affordable credit, resulting in a high failure rate among smaller enterprises.

#### 5. Conclusion

MSMEs are integral to India's economic n. development but continue to face several challenges that inhibit their Addressing potential. issues like inadequate access to finance, regulatory hurdles, lack of technological adoption, and infrastructural gaps is crucial for their growth. Government schemes, infrastructure development, and policy reforms are necessary to create an enabling environment for MSMEs to thrive, improve competitiveness, and contribute to the broader economy.

#### Global Trade Promotion Body for MSMEs

#### 1. Introduction

MSMEs (Micro, Small, and Medium n. Enterprises) are a vital segment of global the economy, contributing significantly to employment, innovation, and GDP growth. However, despite their importance, they face challenges in accessing international markets due to lack of resources, limited knowledge of global trade regulations, and difficulty in scaling operations. To address these challenges, global trade promotion bodies dedicated to MSMEs aim to facilitate their international expansion and promote their integration into global value chains.

#### 2. Expert Opinions:

 Dr. Ramesh Chand (Member, NITI Aayog): He highlights the importance of creating a global framework to support MSMEs in expanding beyond national borders by providing access to trade information, market linkages, and capacity building.

Prof. Ashok Gulati (Agricultural Economist): Prof. Gulati suggests that a global body can serve as a strategic partner for MSMEs in strengthening their capacity to compete in the global marketplace through trade agreements and bilateral collaborations.

#### 3. Key Points:

- Purpose of Global Trade Bodies: Global trade bodies for MSMEs aim to support these enterprises by offering platforms for networking, information exchange, market access, and trade facilitation.
- World Trade Organization (WTO): The WTO supports MSMEs by providing them with a framework for trade negotiations, dispute resolution, and ensuring that global trade rules are inclusive and accessible to smaller enterprises.
- International Trade Centre (ITC): A key organization that helps MSMEs in developing countries, including India, access international markets through trade capacity-building, export promotion, and market intelligence services.
- World Association of Small and Medium Enterprises (WASME): This global network promotes MSMEs by facilitating international collaborations, organizing trade events, and advocating for policies that benefit small businesses worldwide.
- Support Through Market Linkages: Such global bodies help MSMEs by providing access to international trade fairs, business matchmaking services, and fostering partnerships with large multinational corporations.
- Capacity Building Skill and **Development:** They provide training programs enhance MSMEs' to understanding of international market trends, export regulations, quality standards, and digital transformation.

- Access to Financial Instruments: Global trade bodies help MSMEs navigate export finance options, including credit facilities, insurance, and funding opportunities that support international trade.
- Promoting Technology and Innovation: They assist MSMEs in adopting new technologies for improving production and quality standards, ensuring that these enterprises can compete globally.
- Policy Advocacy: Global bodies also advocate for policy reforms that reduce trade barriers, simplify customs procedures, and create a level playing field for MSMEs in international markets.
- Collaboration with Governments and Regional Bodies: These trade bodies collaborate with national governments, regional trade organizations, and multilateral entities to improve the regulatory environment and foster a conducive ecosystem for MSMEs.

#### 4. Examples and Relevant Data:

- Example: The International Trade Centre (ITC) has helped Indian MSMEs increase their exports by facilitating access to global markets and providing tools like the e-Trade for All initiative that helps MSMEs understand digital trade processes.
- Data: According to a 2020 study by the ITC, MSMEs account for 40% of global trade, and 60-70% of employment worldwide, yet they face challenges in accessing international markets due to regulatory complexities and limited resources.

#### 5. Conclusion

trade promotion Global bodies play a crucial role in supporting the internationalization of MSMEs by providing them with the necessary resources, networks, and policy advocacy. These organizations help bridge the gap between smaller enterprises and international markets, enabling MSMEs to enhance their competitiveness, increase exports, and contribute to global economic growth. As trade barriers

decrease and international markets become more accessible, MSMEs can significantly benefit from such global trade bodies.

#### **Industrial Finance Issue**

#### 1. Introduction

Industrial finance plays a crucial role in the growth and sustainability of industries, particularly in emerging economies like India. However, industrial finance faces several challenges, including access to adequate funding, high-interest rates, bureaucratic delays, and the lack of risk management mechanisms. These issues prevent industries, particularly small and medium enterprises (SMEs), from scaling up and competing in global markets, affecting the overall industrial growth.

#### 2. Expert Opinions:

- **Dr. Rakesh Mohan (Former Deputy Governor, RBI):** Dr. Mohan advocates for the improvement of credit systems for industries by reducing the barriers to financing, particularly for SMEs, and enhancing the role of development finance institutions.
- Prof. Raghuram Rajan (Economist, Former RBI Governor): Rajan emphasizes the need for financial reforms to make credit more accessible to industries, especially in sectors like manufacturing, where the funding gap often stifles innovation and growth.

#### 3. Key Points:

- Access to Credit: Many industries, especially SMEs, struggle to access finance due to a lack of collateral and weak credit histories. This leads to undercapitalization and limits their ability to expand and innovate.
- High-Interest Rates: High interest rates often discourage industries from seeking formal credit, as the cost of borrowing becomes prohibitively expensive, especially for capital-intensive sectors like manufacturing.

**INDIAN ECONOMY PART - 2** 

- Bureaucratic Hurdles: The complex and time-consuming approval processes for loans in India, coupled with the lack of transparency in lending practices, delay industrial financing and reduce overall business efficiency.
- Limited Availability of Venture Capital: Start-ups and innovative sectors often face challenges in attracting venture capital due to perceived high risks, especially in untested industries or new technologies.
- Weak Risk Mitigation Instruments: Lack of adequate risk management tools and insurance options makes it difficult for industries to protect themselves from external shocks, leading to a reluctance to take on additional investment.
- Dependence on Traditional Banking Systems: MSMEs and other industries in India remain largely dependent on traditional banks for financing, which often leads to overreliance on working capital and short-term loans, rather than long-term, growth-focused financing.
- Lack of Financial Literacy: Many entrepreneurs, particularly in the MSME sector, lack sufficient financial literacy to navigate the complex industrial finance ecosystem, hindering their ability to secure and manage funds effectively.
- Government Financing Initiatives: While government schemes like the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) and Pradhan Mantri Mudra Yojana (PMMY) aim to facilitate easier access to credit, their effectiveness is often hampered by limited awareness and bureaucratic delays.
- Foreign Investment: Industrial financing is also impacted by India's dependence on foreign investment, which can be volatile, making it difficult for industries to secure stable and long-term financing.
- Alternative Financing Options: Emerging financing models like peer-topeer lending and crowdfunding provide alternative options, but their adoption is still in early stages in India and requires better regulatory frameworks.

#### 4. Examples and Relevant Data:

- Example: The PMMY scheme has provided microfinance support to over 10 crore individuals since its inception, but the success in reaching MSMEs has been mixed due to limited outreach and high paperwork.
- Data: According to the India Brand Equity Foundation (IBEF), India's MSME sector contributes around 30% of GDP and employs over 110 million people, but access to finance remains a significant barrier, with only about 16% of MSMEs accessing formal finance.

#### 5. Conclusion

Industrial finance in India faces several D systemic issues that hinder the growth of industries, particularly SMEs. Addressing these challenges requires comprehensive reforms in the credit system, improving access to venture capital, reducing bureaucratic delays, and enhancing financial literacy among entrepreneurs. Strengthening alternative financing options, expanding government schemes, and improving risk mitigation frameworks are critical steps in overcoming these barriers and ensuring that industries, particularly in the manufacturing and innovation sectors, can thrive.

#### **Export Promotion Policy**

#### 1. Introduction

India's Export Promotion Policy aims n enhance the country's export to performance by addressing various barriers and creating an enabling environment for businesses. The policy focuses on boosting exports across sectors, improving competitiveness, and diversifying the export base. With global trade dynamics constantly evolving, a robust export promotion policy is vital for sustaining economic growth and achieving the targets of becoming a \$5 trillion economy.

#### 2. Expert Opinions:

- Dr. Arvind Virmani (Economist and Former Chief Economic Adviser to the Government of India): Dr. Virmani emphasizes that India needs to focus on high-value-added exports and integrate into global value chains to boost its export performance.
- Prof. Jagdish Bhagwati (Economist, Columbia University): Bhagwati advocates for the liberalization of trade policies and suggests that India should leverage its comparative advantage in sectors like IT and services to boost exports.

#### 3. Key Points:

- Product Diversification: The export promotion policy encourages the diversification of export products to reduce dependence on a few sectors and explore emerging markets. Focus is on sectors like electronics, automobiles, and agri-products.
- Market Access: The policy aims to improve market access through Free Trade Agreements (FTAs) and trade negotiations. It helps businesses reach new markets while promoting India's exports to existing markets.
- Incentives and Schemes: The government offers several export incentives, such as the Merchandise Exports from India Scheme (MEIS) and Service Exports from India Scheme (SEIS), which provide duty credit scrips and other financial support to exporters.
- Infrastructure and Logistics: Improving the logistics infrastructure, including the development of logistics parks, ports, and airports, is a key component of the policy. This helps reduce logistics costs, improve the efficiency of supply chains, and make Indian goods more competitive in global markets.
- Trade Facilitation: The policy seeks to streamline customs and regulatory procedures through initiatives like eSANCHIT (electronic submission of

documents), which improves ease of doing business and reduces delays in export clearance.

- Sector-Specific Focus: The policy identifieskeysectorsforexportpromotion, including textiles, pharmaceuticals, chemicals, and engineering goods, aligning the country's strengths with global demand.
- Export Credit and Financing: The policy aims to improve access to credit and financing for exporters, especially small and medium enterprises (SMEs). Initiatives like Export Credit Guarantee Corporation (ECGC) and Trade Facilitation Centre (TFC) provide financial and insurance support.
- Skill Development: Building exportrelated skills among the workforce is essential for improving quality and productivity. The policy includes programs to train individuals in sectors such as packaging, quality control, and international marketing.
- Promoting Digital Exports: With the rise of digital platforms, the policy encourages the export of digital services and products, especially in IT, software, and e-commerce, which are rapidly growing sectors.
- Fostering Innovation: The policy encourages innovation and technology upgrades in export-oriented industries, ensuring that Indian products remain competitive in the global market through high quality and value addition.

#### 4. Examples and Relevant Data:

- Example: The Foreign Trade Policy (2015-2020) included several export promotion measures, including the MEIS and SEIS, which helped India increase its exports in both goods and services.
- Data: According to the Ministry of Commerce and Industry, India's merchandise exports reached a value of \$446.7 billion in FY 2022–23, representing a growth of 6.03% compared to the previous year.

#### 5. Conclusion

The Export Promotion Policy is critical n. to improving India's export performance, boosting the country's economy, and increasing foreign exchange earnings. By focusing on product diversification, infrastructure, improving offering incentives, and streamlining procedures, the policy provides a framework for businesses to become more competitive in global markets. However, challenges such as market access, logistics, and financial constraints for SMEs need to be continuously addressed to achieve sustainable export growth and contribute to India's economic development.

## Infrastructure Finance & Scheme for Infrastructure

#### 1. Introduction

Infrastructure development is а critical driver of economic growth and social development. In India, financing infrastructure projects has been a challenge due to high capital requirements, long gestation periods, and uncertain returns. To address these issues, the government has introduced various schemes to mobilize resources and improve infrastructure in key sectors such as transportation, energy, and urban development. These schemes focus on leveraging both public and private investments to bridge the infrastructure gap and support long-term growth.

#### 2. Expert Opinions:

 Dr. Bibek Debroy (Chairman, Economic Advisory Council to the Prime Minister): Debroy emphasizes that improving infrastructure financing through Public-Private Partnerships (PPP) and marketbased financing models can help meet India's massive infrastructure requirements. Dr. Arvind Panagariya (Former Vice Chairman, NITI Aayog): Panagariya advocates for the establishment of a robust infrastructure financing framework, highlighting the importance of involving institutional investors like pension funds and sovereign wealth funds in infrastructure development.

#### 3. Key Points:

- Public-Private Partnerships (PPP): PPP models are essential for leveraging private sector investment in infrastructure projects. The government's focus is on creating an enabling environment for private players to participate in projects like highways, railways, and urban development.
- National Infrastructure Pipeline (NIP): Launched in 2019, the NIP aims to provide an investment roadmap for infrastructure development across sectors. It envisions a ₹111 lakh crore investment over the next five years, focusing on enhancing connectivity, energy, and urban infrastructure.
- Infrastructure Investment Trusts (InvITs): InvITs are market-based instruments that allow investors to pool funds for infrastructure projects. The government has facilitated the creation of InvITs to improve the financing options for infrastructure development, especially in sectors like roads and power transmission.
- Viability Gap Funding (VGF): VGF is a scheme where the government provides funding to bridge the gap between the cost of a project and its potential revenue. This helps make infrastructure projects more attractive to private investors, particularly in the case of public utility services.
- Financing Through Bonds: Infrastructure bonds, such as masala bonds, have been used to attract foreign investments for infrastructure projects. The government has encouraged the issuance of bonds in both domestic and international markets to meet financing requirements.

#### 48 IAS MAINS 2025: THINK IN THEMES

- New Financing Schemes:
- Credit Guarantee Enhancement Scheme: This scheme focuses on providing credit enhancement to make infrastructure projects more bankable. It aims to make such projects attractive for lenders by reducing the risks involved.
- India Infrastructure Finance Company Limited (IIFCL): IIFCL provides longterm funding to infrastructure projects. It supports projects in sectors like roads, ports, airports, and energy, helping fill the financing gap in the infrastructure space.
- Faster Project Execution: The government has introduced measures to streamline regulatory approvals and reduce delays in project execution. This includes the e-Office system and Online Project Monitoring System for better project tracking.
- Energy and Transportation Infrastructure: The focus is on enhancing energy infrastructure through initiatives like Ujjwala Yojana for LPG distribution and UDAN for regional air connectivity. The Bharatmala Pariyojana aims to improve national highways and transportation infrastructure.
- Urban Infrastructure Development: The Smart Cities Mission and AMRUT Scheme are designed to improve urban infrastructure by enhancing basic services such as water supply, sanitation, and transportation in urban areas.
- Sustainability Focus: The government is increasingly integrating sustainability in infrastructure finance, focusing on green projects, renewable energy, and low-carbon initiatives in line with India's climate commitments under the Paris Agreement.

#### 4. Examples and Relevant Data:

Example: The National Investment and Infrastructure Fund (NIIF) is a government-backed initiative that aims to provide long-term equity capital for infrastructure projects in India. It attracts private investment and plays a vital role in financing large-scale infrastructure projects. Data: According to the Economic Survey 2022-23, India's infrastructure investment requirement for the next 10 years is estimated at ₹111 lakh crore, with ₹44 lakh crore already planned under the NIP, highlighting the large financing gap.

#### 5. Conclusion

Infrastructure finance in India is evolving n. withamix of government schemes, private sector participation, and innovative financing mechanisms like PPP, InvITs, and bonds. The government's focus on creating a conducive environment for investments in infrastructure through schemes like the NIP, VGF, and credit enhancement programs is crucial for addressing the massive infrastructure deficit. However, challenges like long project execution timelines, regulatory hurdles, and the need for better risk management mechanisms must be addressed to ensure that infrastructure development is sustainable and supports India's economic growth.

#### Public-Private Partnership (PPP)

#### 1. Introduction

Public-Private Partnerships (PPP) are collaborative arrangements between the government and private sector entities aimed at delivering public infrastructure and services. In India, PPPs have gained significant traction in sectors like transportation, energy, healthcare, and education, helping to address financing gaps, enhance efficiency, and improve service delivery. These partnerships bring together the strengths of the public sector's policy-making and regulation with the private sector's investment, innovation, and management expertise.

#### 2. Expert Opinions:

 Dr. Bibek Debroy (Chairman, Economic Advisory Council to the Prime Minister): Debroy argues that PPPs are

crucial for bridging the infrastructure gap, particularly in sectors requiring large investments, and that the success of PPPs depends on creating a balanced risk-sharing framework.

Prof. Raghuram Rajan (Former Governor, Reserve Bank of India): Rajan stresses that PPPs must be designed with clear guidelines, accountability, and transparency to ensure long-term sustainability and avoid burdening the government with excessive liabilities.

#### 3. Key Points:

- Risk-sharing Mechanism: One of the key advantages of PPPs is the sharing of risks between the public and private sectors. The government often provides regulatory support, while private entities invest capital and expertise in the execution of projects.
- Infrastructure Development: PPPs play a critical role in infrastructure development, especially in sectors such as highways, airports, ports, and railways. The Bharatmala Pariyojana and UDAN scheme are examples of PPPs focused on infrastructure development in India.
- Efficiency Gains: By leveraging private sector management practices and innovation, PPPs can lead to more efficient project execution, better resource allocation, and timely delivery of services. The Delhi-Gurgaon Expressway is an example where the PPP model has been successful in providing efficient transportation.
- Financial Sustainability: PPPs attract private investment, reducing the fiscal burden on the government. They also bring in long-term financing for projects that would otherwise be difficult to fund. The National Highways Authority of India (NHAI) has been actively using the PPP model to build and maintain highways.
- Government Schemes: The Infrastructure Investment Trusts (InvITs) and Viability Gap Funding (VGF) schemes provide a supportive

framework for PPP projects, making them more attractive for private investors by sharing some of the financial risks.

- Challenges in PPP: Despite their benefits, PPPs face challenges like long gestation periods, regulatory issues, unclear ownership structures, and political risks. These can delay project implementation and affect financial returns. For instance, issues in the Delhi-Mumbai Industrial Corridor (DMIC) have shown that insufficient clarity in the PPP contract terms can create roadblocks.
- PPP in Social Sectors: PPPs have been implemented in the social sector as well, with notable examples like the Pradhan Mantri Awas Yojana (PMAY) and Ayushman Bharat leveraging private sector participation to improve housing and healthcare services.
- Sustainability and Accountability: For PPPs to be successful, there must be a strong focus on environmental sustainability and accountability. The Smart Cities Mission is an example where PPPs are being used to develop sustainable and inclusive urban infrastructure.
- Policy and Legal Framework: Clear policies and robust legal frameworks are essential for the success of PPPs. The Model Concession Agreement (MCA) developed by the Ministry of Finance provides a standardized framework for PPP contracts.
- International Examples: Countries like the UK and Australia have successfully used PPPs for large-scale infrastructure projects. In India, international collaborations are also encouraged through the International Finance Corporation (IFC) to bring expertise and global standards into local projects.

#### 4. Examples and Relevant Data:

Example: The Mumbai Metro Line 5 project is a significant example of a PPP initiative in the transportation sector, where the private partner is responsible for the design, construction, and operation of the metro line.

Data: According to the Ministry of Finance, India has around 1,200 active PPP projects in various stages of implementation, with a total investment of over ₹10 lakh crore, indicating the growing role of PPPs in infrastructure development.

#### 5. Conclusion

PPPs have emerged as a powerful tool n for infrastructure development in India, combining public policy with private sector investment and expertise. By leveraging private sector efficiency, bringing in external financing, and sharing risks, PPPs have the potential to address India's infrastructure gap. However, for PPPs to realize their full potential, challenges like regulatory hurdles, unclear risk-sharing, and political instability must be mitigated. Establishing a transparent and robust framework will be essential to ensure the success and sustainability of PPP projects in India.

#### The Road Through Chicken's Neck: North-East Connectivity

#### 1. Introduction

The "Chicken's Neck" refers to the narrow 22-km-wide stretch of land connecting India's northeastern states with the rest of the country. This crucial land corridor, mainly in West Bengal, is a key geopolitical and strategic location, as it is the only land route for the northeastern region to access mainland India. Connectivity through this region plays a vital role in economic, social, and military operations, but challenges such as infrastructure bottlenecks and political complexities hinder its full potential.

#### 2. Expert Opinions:

 Dr. Sreeram Chaulia (Dean, Jindal School of International Affairs): Chaulia highlights that improving infrastructure along the Chicken's Neck is critical for strengthening India's northeastern connectivity with the rest of the country and its neighbors in Southeast Asia.

Prof. Rajiv Bhatia (Former Diplomat and Expert on Foreign Policy): Bhatia emphasizes that enhancing connectivity through the Chicken's Neck will not only boost trade and development but also fortify India's strategic positioning in the face of challenges from China and other neighboring countries.

#### 3. Key Points:

- Strategic Importance: The Chicken's Neck region provides critical access to India's northeastern states, acting as a lifeline for transportation and logistics. This narrow corridor is also a strategic concern due to its proximity to international borders with Bangladesh, Nepal, and Bhutan.
- Infrastructure Challenges: Despite its importance, the region suffers from poor infrastructure, including underdeveloped roads, limited rail connectivity, and inadequate communication networks. The region's narrowness further complicates efforts to expand transport facilities.
- Political Sensitivity: The Chicken's Neck is located in a politically sensitive area with high security and border concerns. Tensions with neighboring countries like Bangladesh, Myanmar, and China further exacerbate challenges related to crossborder trade and movement.
- Economic Implications: Enhanced connectivity through the Chicken's Neck would foster trade and economic ties with Southeast Asia, particularly Myanmar, Thailand, and other countries under the Act East Policy. This can stimulate regional economic growth, improve local livelihoods, and create opportunities for bilateral trade.
- Connectivity Initiatives: Several government initiatives, including the Bharatmala Pariyojana and the Northeast Road Sector Development

Scheme, aim to improve infrastructure and transportation routes in this region. Additionally, the Kaladan Multi-Modal Transit Transport Project aims to connect India's northeast with Myanmar and the Bay of Bengal.

- Security Concerns: The region's strategic importance is heightened due to its proximity to volatile borders, especially with Myanmar, where insurgent groups operate. Improved connectivity is critical for both military logistics and civilian safety.
- Cross-Border Trade Potential: Strengthening the road network in the Chicken's Neck can enhance trade ties with Bangladesh and Myanmar, which can act as corridors to Southeast Asia. The Agartala-Akhaura railway project and Akhaura-Agartala International Connectivity Project are efforts to improve regional trade.
- Environmental Impact: Infrastructure development must consider environmental sustainability, as the region is home to rich biodiversity and ecological sensitivity, requiring careful planning to mitigate adverse effects on forests and wildlife.
- Indigenous Issues: Infrastructure development in the Chicken's Neck area often intersects with the interests of indigenous communities, leading to concerns over land acquisition, cultural preservation, and displacement.
- Role of Technology: The use of modern technology, including satellite imaging and digital platforms for traffic management, can significantly enhance transportation efficiency and security along this narrow corridor.

#### 4. Examples and Relevant Data:

Example: The Agartala-Akhaura Railway Project, which aims to link India's Tripura state with Bangladesh, is a significant step toward improving cross-border connectivity through the Chicken's Neck. Data: According to the Ministry of Road Transport and Highways, over ₹50,000 crore has been allocated for road development projects in India's northeastern region under the Bharatmala Pariyojana to improve connectivity and infrastructure in areas like the Chicken's Neck.

#### 5. Conclusion

The Chicken's Neck remains a critical area for both national security and economic development, and improving connectivity through this region is essential for fostering growth in India's northeastern states. Despite the challenges, the government's focus on infrastructure projects and regional cooperation with neighboring countries presents a significant opportunity for enhanced trade, strategic integration, and overall development. However, careful consideration of political, security, environmental, and social factors is necessary to ensure the successful execution of these projects.

#### **Railways in India**

#### 1. Introduction:

India's railway system is one of the largest and busiest in the world, playing a pivotal role in the country's economic development and social integration. Established in 1853, it has evolved into a vast network that connects remote areas with urban centers, facilitating the movement of goods, services, and people. The sector is crucial for trade, tourism, and national connectivity but faces challenges related to infrastructure, modernization, safety, and efficiency.

#### 2. Expert Opinions:

 Dr. Bibek Debroy (Chairman, Economic Advisory Council to the Prime Minister): Debroy emphasizes that the Indian Railways must focus on privatization and

modernization to enhance efficiency, reduce operational costs, and ensure high-quality services.

Shri Ashwini Vaishnaw (Minister of Railways, Government of India): Vaishnaw highlights the ongoing efforts to improve safety, speed, and accessibility, with major reforms in track infrastructure, station redevelopment, and high-speed rail projects to boost the sector's growth.

#### 3. Key Points:

- Vast Network and Connectivity: Indian Railways operates over 67,000 kilometers of track, connecting more than 7,300 stations across the country. This vast network supports the movement of goods, passenger services, and special trains for tourism and cargo.
- Economic Role: Railways contribute significantly to India's economy, transporting over 1.3 billion tonnes of freight annually. Key sectors dependent on the railways include coal, steel, cement, and agriculture, making it an essential element for supply chain efficiency.
- SafetyConcerns:Despiteimprovements, safety remains a concern. India has witnessed train accidents due to outdated infrastructure, signal failures, and human error. The Dedicated Freight Corridors (DFC) and Automatic Train Protection Systems (ATP) aim to improve safety and speed.
- Modernization Efforts: The government's Mission Raftar aims to improve the speed of trains by upgrading track infrastructure and introducing new technologies. Projects like the Semi High-Speed Train (Vande Bharat Express) are steps toward faster and more efficient rail travel.
- Electrification and Sustainability: The government aims to fully electrify the rail network by 2030 to reduce carbon emissions and improve efficiency. Renewable energy integration, such as solar-powered trains and stations, is also being explored.

- Privatization and PPP Models: In a bid to modernize, the Indian government has introduced the Public-Private Partnership (PPP) model to improve services and efficiency. The Tejas Express is one such example of a privately operated train providing luxury services.
- Rural and Remote Connectivity: Indian Railways serves as the primary mode of transport in rural and remote areas, providing essential connectivity for passengers and goods. The Mahatma Gandhi Rural Employment Guarantee Scheme (MGNREGA) has also used railway services for transportation of materials in rural areas.
- Ticketing and Passenger Services: The introduction of e-ticketing and online booking platforms has simplified travel for passengers. The IRCTC platform allows for online bookings, reducing queues and improving convenience.
- Infrastructure Challenges: Indian Railways faces challenges such as outdated stations, lack of modernization in signal systems, and congestion on tracks. However, ongoing projects such as station redevelopment and highspeed rail corridors aim to address these issues.
- Role of Technology: The Indian Railways is adopting Al, machine learning, and Big Data to improve operational efficiency, predict maintenance needs, and optimize scheduling.

#### 4. Examples and Relevant Data:

- Example: The launch of the Vande Bharat Express is a significant step in introducing semi-high-speed trains to improve passenger comfort and reduce travel time between major cities.
- Data: According to the Ministry of Railways, over 800 stations are being redeveloped under the Station Redevelopment Program. Additionally, about 85% of the Indian Railways network has been electrified, with a target to complete full electrification by 2030.

#### 5. Conclusion

The Indian railway system is n а cornerstone of the country's transportation infrastructure, essential for economic growth, regional development, and national integration. Despite facing challenges in terms of safety, modernization, and efficiency, ongoing reforms and projects such as electrification, high-speed trains, and PPP models are set to enhance the sector's performance. Continued focus on innovation, sustainability, and infrastructure development is necessary to ensure that Indian Railways remains an engine for national growth and connectivity.

#### **Power Sector Reforms in India**

#### 1. Introduction:

The power sector in India has undergone significant reforms to meet the growing energy demand, improve efficiency, and ensure reliable supply to consumers. The government's efforts have focused on enhancing generation capacity, upgrading transmission and distribution networks, promoting renewable energy, and ensuring the financial health of the sector. However, challenges such as subsidy burdens, financial losses of discoms, and infrastructure gaps continue to affect the sector.

#### 2. Expert Opinions:

- Shri R.K. Singh (Minister of Power and New & Renewable Energy): Singh emphasizes the need for sectoral reforms, including improving the financial health of power distribution companies (discoms), adopting digital technology, and accelerating renewable energy integration to achieve the country's energy goals.
- Dr. M. S. Desai (Energy Expert): Desai advocates for stronger regulatory

frameworks and better implementation of policies to address issues such as power theft, delayed payments, and the inefficiency of state-run discoms, which hamper the growth of the sector.

#### 3. Key Points:

- Financial Health of Discoms: The major challenge in the power sector is the financial instability of discoms, which are burdened by inefficiencies, high transmission losses, and subsidy obligations. Reforms such as the Ujjwal Discom Assurance Yojana (UDAY) have been introduced to improve their finances and reduce debt.
- Renewable Energy Integration: India has significantly increased its focus on renewable energy. The National Solar Mission and the National Wind Energy Mission aim to achieve 500 GW of non-fossil fuel-based capacity by 2030. Policies promoting solar, wind, and hydropower are crucial for reducing dependency on coal.
- Power Sector Distribution Reforms: The Integrated Power Development Scheme (IPDS) and Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) aim to modernize the distribution networks, reduce losses, and improve electricity access, especially in rural areas.
- Privatization of Distribution: Privatization of electricity distribution in select cities is being implemented as part of efforts to enhance efficiency, reduce transmission losses, and improve customer service. States like Delhi and Orissa have seen positive outcomes with privatization in their distribution sectors.
- Smart Grid Implementation: The adoption of smart grids and smart meters is expected to enhance monitoring, reduce losses, and improve the efficiency of power distribution. These technologies help in real-time data collection and better management of the power supply.
- Power Purchase Agreements (PPA) and Contracts: The government has introduced measures to address issues

in Power Purchase Agreements (PPAs), particularly the risk of renegotiation due to fuel price volatility. **The Electricity** (Amendment) Bill, 2021 aims to bring in regulatory reforms to ensure power supply reliability.

- Electricity for All: The Saubhagya Scheme and the Pradhan Mantri Sahaj Bijli Har Ghar Yojana aim to provide last-mile electricity connections to all households in rural and remote areas, promoting inclusive access to electricity.
- Efficient Transmission Networks: The development of Green Energy Corridors is crucial for the transmission of renewable energy from remote generation points to urban centers. This will help in stabilizing the grid and reducing dependency on coal-fired power plants.
- Energy Efficiency: The Perform, Achieve, and Trade (PAT) Scheme and the Energy Conservation Building Code (ECBC) aim to improve energy efficiency across industries and buildings. The BEE (Bureau of Energy Efficiency) has been central to these initiatives.
- Regulatory Frameworks: The Central Electricity Regulatory Commission (CERC) and State Electricity Regulatory Commissions (SERCs) play key roles in setting tariffs, improving the governance of the sector, and regulating transmission and distribution services to ensure fair practices.

#### 4. Examples and Relevant Data:

- Example: The introduction of UDAY has helped state-owned discoms reduce their aggregate technical and commercial (AT&C) losses and improve their financial performance. By 2018, UDAY had brought down discom debt by ₹2.3 lakh crore.
- Data: According to the Ministry of New and Renewable Energy, India has successfully increased its renewable energy capacity to approximately 175 GW by 2024, aiming for 500 GW by 2030.

#### 5. Conclusion

Power sector reforms in India are crucial n for achieving energy security, ensuring sustainable development, and providing universal access to electricity. The government's focus on improving the financial health of discoms, integrating renewable energy, and modernizing infrastructure is key to addressing challenges. However, current the successful implementation of these reforms requires coordinated efforts across policy, technology, and financial mechanisms, along with continuous monitoring to ensure long-term success and stability in the sector.

### IPOs of Public Sector Undertakings (PSUs) in India

#### 6. Introduction

The Initial Public Offerings (IPOs) of Public Sector Undertakings (PSUs) in India are a key part of the government's strategy to disinvest in public sector companies and raise funds for economic growth. These IPOs not only aim to improve government finances but also to bring more transparency, efficiency, and private-sector participation into these enterprises. Despite challenges such as market conditions and concerns over governance, PSU IPOs have been a significant aspect of India's privatization and disinvestment program.

#### 7. Expert Opinions:

**Dr. Arvind Subramanian (Former Chief Economic Advisor to the Government of India):** Subramanian emphasizes that the strategic sale of PSUs through IPOs can generate significant revenue for the government, but requires robust governance practices and transparent operations to make these companies attractive to investors.

Prof. A. Vaidyanathan (Economist): Vaidyanathan suggests that while IPOs of PSUs can be beneficial, the government should ensure that the companies being sold retain their strategic relevance and that the process does not undermine national interests or employee welfare.

#### 8. Key Points:

- Disinvestment Strategy: IPOs are a part of the government's broader disinvestment strategy to reduce its stake in PSUs. This allows the government to raise capital, reduce fiscal deficits, and encourage private sector participation in sectors that were previously dominated by state-run companies.
- Revenue Generation: IPOs help the government raise significant funds to bridge budgetary gaps. For example, the government's Disinvestment Target for FY 2023-24 is set at ₹51,000 crore, with PSU IPOs being a key contributor.
- Market Participation: By offering equity stakes in PSUs, IPOs bring private investors into the companies, encouraging better governance, transparency, and professional management practices, which can improve operational efficiency and profitability.
- **Governance and Transparency:** Listing PSUs on the stock exchange requires them to comply with rigorous disclosure norms, making them more accountable to the public and investors. This is expected to improve the corporate governance of these companies.
- Challenges in IPOs: Despite the advantages, PSU IPOs face several challenges such as poor market conditions, resistance from trade unions, concerns over the pricing of the IPOs, and the performance of PSU stocks post-listing. For instance, LIC's IPO faced significant delays and issues with pricing and valuation.
- Strategic Sales vs. Minority Stakes: The government's disinvestment program includes both strategic sales (where it sells a controlling stake) and minority

stake sales through IPOs. The strategy depends on the company's financial health, growth prospects, and market conditions.

- Inclusion of Retail Investors: To attract a broad range of investors, IPOs of PSUs often include a provision for retail investors, with a portion of the shares allocated to this group at discounted prices. This is meant to encourage public participation and increase market inclusivity.
- Impact on Employees: Employees of PSUs often have concerns regarding their job security and the future of their organizations post-privatization. The government must address these concerns to ensure smooth transitions during the disinvestment process.
- Attractiveness of PSU IPOs: IPOs of profit-making PSUs like Coal India, NTPC, and Indian Oil Corporation have been successful in the past, attracting substantial investor interest due to their strong market presence and stable revenue streams.
- Regulatory Framework: The Securities and Exchange Board of India (SEBI) plays a vital role in regulating PSU IPOs, ensuring compliance with market norms, protecting investor interests, and facilitating the smooth listing of these companies.

#### 9. Examples and Relevant Data:

- Example: The IPO of Coal India Limited in 2010 raised over ₹15,000 crore, making it one of the largest IPOs in India. The government reduced its stake in the company from 100% to 90% through this offering.
- Data: According to the Department of Investment and Public Asset Management (DIPAM), the government raised ₹16,000 crore from PSU disinvestment in 2020-21, with IPOs being one of the key components of this revenue.

#### 10. Conclusion

 IPOs of PSUs represent a significant opportunity for the Indian government to generate funds, increase private

#### 56 IAS MAINS 2025: THINK IN THEMES

sector participation, and improve the governance of state-owned enterprises. However, the success of these IPOs depends on various factors such as market conditions, investor sentiment, and effective regulatory oversight. While these offerings offer financial benefits and enhance transparency, the government must manage the process carefully to ensure that national interests, employee welfare, and the long-term viability of PSUs are not compromised.

#### **India's Container Shortage**

#### 1. Introduction

India's container shortage has emerged as a significant issue, particularly since the pandemic. The global disruption in supply chains, combined with a surge in exports, has led to an imbalance in container availability, affecting India's trade and logistics efficiency. This shortage disrupts the timely movement of goods, raises transportation costs, and hampers the growth of the export sector.

#### 2. Expert Opinions:

- Dr. A. S. Bansal (Logistics Expert): Bansal highlights that the container shortage is largely driven by global supply chain disruptions and an imbalance in the flow of containers between regions, with India facing a higher demand for containers than what is available.
- Mr. P.K. Das (Chairman, Indian Ports Association): Das points out that despite government interventions to increase portinfrastructure and container handling capacities, the shortage persists due to ongoing logistical issues and the lack of sufficient long-term solutions in place.

#### 3. Key Points:

 Global Supply Chain Disruptions: The pandemic triggered a global disruption in supply chains, creating a container imbalance where empty containers were stuck in Western countries due to disrupted trade routes. India faced a shortage as a result of these global supply chain issues.

- Surge in Exports: India's export sector has seen a significant rise, especially in goods such as chemicals, textiles, and electronics. This surge has led to a higher demand for containers, while the supply has been limited, exacerbating the shortage.
- Increase in Shipping Costs: Due to the scarcity of containers, shipping costs for both imports and exports have surged. In some cases, these costs have risen by 3-4 times, increasing the cost burden on Indian exporters and diminishing their competitiveness in global markets.
- Inefficient Logistics Networks: India's container logistics infrastructure, including ports and inland transportation, faces inefficiencies and capacity limitations. Despite improvements, the lack of a seamless flow between ports and manufacturing hubs contributes to the shortage.
- Imbalance in Container Flow: India primarily imports raw materials and exports finished goods. Empty containers often remain stuck in importing countries, which causes a shortage of containers for export from India, especially in times of high export demand.
- Impact on Small and Medium n Enterprises (SMEs): The container disproportionately affects shortage SMEs, which lack the leverage of large corporations to negotiate better shipping rates or secure containers in a competitive market.
- The D Government Intervention: implemented has government such incentivizing measures as container manufacturers, improving port infrastructure, and streamlining procedures to reduce delays. However, the container shortage persists due to ongoing logistical challenges.

- Delay in Supply Chains: The container shortage has led to delays in exports and imports, affecting timely deliveries and inventory management. This has particularly impacted industries such as electronics, automobiles, and pharmaceuticals.
- Container Manufacturing: India's container manufacturing capacity is limited compared to global standards. While the government is promoting domestic production, it will take time to meet the increasing demand for containers.
- Impact on Inflation: The shipping cost hikes are indirectly contributing to inflation, as higher logistics costs are passed down to consumers in the form of increased prices for goods.

#### 4. Examples and Relevant Data:

- Example: In 2021, the Shipping Corporation of India faced delays in receiving containers from key markets such as China and the United States due to the container shortage, which slowed down India's export of agricultural products.
- Data: According to the Indian Ports Association (IPA), container traffic at major Indian ports grew by over 9% in FY 2021-22, but the shortage of containers led to a 15-20% delay in container turnaround times and increased freight rates by 30-50%.

#### 5. Conclusion

The container shortage in India is a multifaceted issue with global and domestic implications. While the government has taken steps to address infrastructure the issue through development and policy interventions, the shortage continues to pose a challenge to India's trade competitiveness. Longterm solutions, including improvements in logistics infrastructure, container manufacturing, and global supply chain coordination, are necessary to resolve the issue and ensure smoother trade operations in the future.

#### **Digital Public Infrastructure**

#### 1. Introduction

 Digital public infrastructure refers to the digital systems and services that enable governments to deliver public services efficiently and inclusively. In India, the expansion of digital infrastructure is crucial for supporting the delivery of services such as healthcare, education, financial inclusion, and governance. These systems leverage technologies like the internet, cloud computing, and data analytics to improve public sector functioning and empower citizens.

#### 2. Expert Opinions:

- Nandan Nilekani (Co-Founder, Infosys): Nilekani emphasizes the role of digital infrastructure in promoting financial inclusion and good governance. He highlights the success of the Aadhaar project as a foundational element of India's digital public infrastructure.
- **Dr. Arvind Gupta (Founder, Digital India Foundation):** Gupta advocates for expanding digital public infrastructure to ensure that it reaches rural and underserved areas, thus bridging the digital divide and promoting equitable access to services.

#### 3. Key Points:

- Aadhaar (Unique Identification System): Aadhaar has become the backbone of India's digital public infrastructure, providing a unique identity to over 1.3 billion citizens. It is integral to various services, such as direct benefit transfers (DBTs), welfare programs, and banking.
- National Digital Health Mission (NDHM): The NDHM aims to create a digital health ecosystem to facilitate the delivery of healthcare services, ensure health records are accessible, and promote digital health solutions across India.
- Digital Payment Systems: India has seen a massive shift toward digital payments through platforms like UPI

(Unified Payments Interface), BHIM (Bharat Interface for Money), and Paytm, which facilitate fast and secure financial transactions for individuals and businesses.

- E-Governance and Online Services: The government's focus on digitalizing public services has led to platforms like e-District, Digital India, and PMGDISHA (Pradhan Mantri Gramin Digital Saksharta Abhiyan), which provide services such as online applications for certificates, licenses, and documents.
- Broadband Connectivity and Fiber Network: The government's BharatNet project is expanding broadband connectivity to rural areas, providing internet access to villages and underserved regions, which is key for enabling digital public services.
- Data Governance and Security: With the growth of digital infrastructure, India's focus on data protection and privacy is essential. The Personal Data Protection Bill and Cybersecurity frameworks are being developed to safeguard citizens' data and digital rights.
- Smart Cities Mission: Under the Smart Cities initiative, India is investing in digital infrastructure to make urban areas more efficient, sustainable, and livable by using IoT (Internet of Things), big data, and cloud technologies to improve services such as traffic management, waste management, and energy efficiency.
- Digital Literacy Programs: Digital literacy initiatives such as PMGDISHA aim to increase digital awareness and skills, enabling citizens, especially in rural areas, to effectively use digital platforms and participate in the digital economy.
- Integration Across Sectors: Digital public infrastructure integrates services

across sectors such as healthcare, education, and welfare, creating synergies that improve service delivery and efficiency.

Challenges and Gaps: Despite significant progress, challenges such as digital exclusion in rural areas, lack of digital literacy, and cybersecurity risks remain. Bridging the digital divide is essential for the inclusive growth of the digital ecosystem.

#### 4. Examples and Relevant Data:

- Example: The Aadhaar-linked DBT system has enabled direct transfer of subsidies and welfare benefits to over 80 crore beneficiaries, minimizing corruption and improving efficiency in government service delivery.
- **Data:** According to the **NITI Aayog's Digital India report**, India's digital payment transactions grew by 44% in FY 2021-22, reflecting the increasing adoption of digital payment systems and the government's push for cashless transactions.

#### 5. Conclusion

Digital public infrastructure is n transforming India's governance, public service delivery, and economic inclusion. While substantial progress has been made through initiatives like Aadhaar, UPI, and BharatNet, addressing challenges such as digital literacy, cybersecurity, and rural connectivity is critical for achieving inclusive growth. Strengthening and expanding digital public infrastructure will be pivotal in driving India's digital economy forward, ensuring that all citizens can benefit from the opportunities it provides.



## MENTORS who make RANKERS

# OPTIONAL

## **CRASH COURSE**

- 60+ Hrs. Crash Course to cover meticulously selected topics.
- Daily Answer Writing Practice
- Personalised Mentorship

## **TEST SERIES**

IAS MAINS

212

- Total 12 Tests: 8 Sectional & 4 Mock Tests
- Pre-Test and Post-Test Mentorship Elaborate Discussion after each Test Discussion

8448496262

Detailed Model Answer Hints



GS SCORE, Second Floor, Metro Tower, 1B, Pusa Road, Karol Bagh, New Delhi - 110005 (Beside Karol Bagh Metro Station Gate No. 8)