

# Gist of **KURUKSHETRA**

August 2021



## **India- An Agricultural Powerhouse**

**Agriculture in India-**  
A Retrospect  
and Future Prospects

**Agricultural Exports-**  
Growth, Potential and  
Opportunities

Emerging Trends in  
**Agricultural Production**

Expanding Viable **Agri-Finance**

Prospects of **Agri-Tourism**

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Rank 16  
Dhodmise Trupti Ankush



Rank 21  
Rahul Jain



Rank 24  
Anuraj Jain

## CSE 2017

5 Ranks  
in top 50

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in top 100

236 Ranks  
in the final list



Rank 3  
Sachin Gupta



Rank 6  
Koya Sree Harsha



Rank 8  
Anubhav Singh



Rank 9  
Soumya Sharma



Rank 10  
Abhishek Surana

## CSE 2016

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in top 50

18 Ranks  
in top 100

215 Ranks  
in the final list



Rank 2  
Anmol Sher  
Singh Bedi



Rank 5  
Abhilash Mishra



Rank 12  
Tejaswi Rana



Rank 30  
Prabhash Kumar



Rank 32  
Avdhesh Meena

## CSE 2015

5 Ranks  
in top 50

14 Ranks  
in top 100

162 Ranks  
in the final list



Rank 20  
Vipin Garg



Rank 24  
Khumanthem  
Diana Devi



Rank 25  
Chandra Mohan  
Garg



Rank 27  
Pulkit Garg



Rank 47  
Anshul Agarwal

## CSE 2014

6 Ranks  
in top 50

12 Ranks  
in top 100

83 Ranks  
in the final list



Rank 4  
Vandana Rao



Rank 5  
Suharsha Bhagat



Rank 16  
Ananya Das



Rank 23  
Anil Dhameliya



Rank 28  
Kushaal Yadav



Rank 39  
Vivekanand T.S

## CSE 2013

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in top 50

62 Ranks  
in the final list



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## Gist of Kurukshetra August 2021 Issue: India - An Agricultural Powerhouse

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## Chapter 1: Agriculture in India - A Retrospect and Future Prospects

### **Challenges in the agricultural sector at the dawn of independence:**

- Agricultural crop productivity was a major problem that India was grappling with.
- The lack of assured irrigation and the unavailability of fertilisers and pesticides held back India's productivity.
- With most of the cropped area rainfed, the monsoon was a crucial determinant of production. Fertiliser application was also minuscule. The agricultural practices had become redundant and had not kept pace with the practices in the developed world.

### **Agricultural revolution:**

- Technology was the way out for India. New varieties of wheat and rice, investments in irrigation, increasing availability of fertilisers and pesticides resulted in a huge increase in productivity.
- The provision of formal credit played an important role too.
- The availability of advanced technologies was not just the only intervention from a policy perspective. Major initiatives were taken in the domain of agriculture marketing and public procurement and distribution.
  - The [Food Corporation of India \(FCI\)](#) was set up in 1965 to undertake price support operations, distribute food grains under the public distribution system (PDS) and maintain buffer stocks of food grains. Procurement of key food grains took place at MSPs to be distributed in the PDS. The procurement at MSP of these crops further incentivised their cultivation, further increasing the availability of food grains in the country. The net was significantly expanded with the [National Food Security Act, 2013](#).
  - State governments enacted Agriculture Produce Market Regulations (APMR).
- A similar achievement was made in the production of milk, through [Operation Flood](#), launched in 1970 through the National Dairy Development Board (NDDB).

### **Contemporary challenges:**

- Subsequent to the success of the green revolution several issues have emerged that could be detrimental to the long-term growth of India's agriculture sector.

### **Lacunae in agricultural marketing:**

- The agriculture marketing fragmentation present in the APMC system has created inefficiencies in the movement and trade of agricultural commodities. Whilst the markets were expected to be

avenues for transparent price discovery, what is being observed is collusive bidding by agents at [APMC](#) at low prices.

- Intermediation costs, owing to fragmentation and the presence of intermediaries have occupied a larger and larger chunk of final retail prices, with the share of farmers getting smaller.
- There was also a lack of investments across the value chain, especially private investment. Post-harvest losses continue to cost the nation substantially.
- Linkages to food-processing and export markets have remained weak.

#### **Area of sustainability:**

- Inefficient and unsustainable practices in agricultural production have led to many environmental issues.
- Soil organic carbon (SOC), cited as an important indicator of soil health, has seen a decline across India. The imbalance in the use of fertilisers has been a contributor to declining soil health.
- Groundwater levels are depleting in several areas as the pace of extraction is exceeding the pace of recharge. Nearly 2/3<sup>rd</sup> of the water used for irrigation comes from groundwater. Close to 90 percent of all groundwater extracted annually is for agricultural purposes. The conventional flood irrigation used by farmers in India is inefficient.
- Climate change is an emerging threat to the sector with crop yields likely to be impacted.

#### **Issue of nutritional security:**

- Whilst India has achieved food security, nutritional security remains elusive.
- According to the National Family Health Survey 4 (2015-16), 35.7 percent of children under 5 were underweight and 38.4 percent were stunted. Low diet diversity has been linked to both stunting and obesity.

#### **Way forward:**

- India will have to focus on the following three key challenges in the coming years.
- The first is that of agriculture marketing. The second is the issue of sustainable intensification. The third is centred around achieving nutritional security.

#### **Recommendations:**

#### **Use of Technology:**

- Frontier technologies such as artificial intelligence (AI), blockchain, Internet of Things (IoT) amongst others must be used to address the challenges in the agricultural sector and also to

increase its productivity and efficiency. The application of technology may also promote sustainable intensification.

- Agri-Tech or Ag-Tech should be the way forward here.
- Recognising the potential of the digital transformation of the agriculture sector, the Ministry of Agriculture & Farmers' Welfare has been developing the IDEA platform, a database of 10 crore+ farmers, on which the private sector can build solutions that can be scaled across India.

### **Sustainable Intensification:**

- With declining soil health and dropping water tables, urgent interventions are necessary to reverse this trend.
- Shifting the production base of rice and wheat to areas where the benefits of the [Green Revolution](#) have not yet reached, for example, in East India, is one avenue.
- Agro-climatic regional planning (ACRP) is a concept that has started gaining traction again. Aligning cropping systems with agro-climatic systems may boost biodiversity and enhance India's adaptation and mitigation capabilities in combating climate change.
- Agro-ecological farming is another concept.
- Natural farming is promoted as Bharatiya Prakritik Krishi Paddhati Program (BPKP) under the Centrally Sponsored Scheme - [Paramparagat Krishi Vikas Yojana \(PKVY\)](#). BPKP is aimed at promoting traditional indigenous practices, based on the use of on-farm cow dung-urine formulations with the application of recycling, mulching, periodic soil aeration and exclusion of all synthetic chemical inputs.

### **Learning from Past Success to Drive Future Success:**

- There are many lessons to be learnt from India's past successes in ensuring food security.
- As is evident from India's past experience, assured procurement and minimum support prices (MSPs) create incentives for farmers to grow more rice-wheat. The distribution of these grains through the PDS generates further demand, with a knock-on effect on production. A similar approach must be adopted for crops such as millets, pulses and oilseeds.
  - Millets are more nutritious and require lesser water to grow. However, due to the relative economics, in terms of productivity and prices received in markets, millets lose out to cereals. Whilst MSPs for millets are declared; procurement and distribution under the PDS are minuscule when compared to rice-wheat. Including millets at a large scale in the PDS may have the effect of aligning incentives between government policies and farmer growing decisions.
- The success of the cooperative model was demonstrated in the White Revolution. Recognising the potential of farmer collectives, the Central Government is committed to creating 10,000 Farmer Producer Organisations (FPOs). The recently formed [Ministry of Cooperation](#) is also a step in this direction.



### **Conclusion:**

- India has come a long way from once being a food deficit nation to a food surplus one. One of India's greatest achievements since independence has been the non-existence of large scale famines.
- The role of improved technology, patterns of production, and public procurement and distribution system have been crucial towards achieving food security. Nutritional security is now the next frontier that we need to conquer.

## **Chapter 2: Agricultural Exports - Growth, Potential and Opportunities**

### **Introduction:**

- India is predominantly an agrarian country and is a major contributor to the global food basket.
- Blessed with 20 agri-climatic regions, 15 major climates and 46 soil types, India produces an amazing variety of agricultural products. A small part is exported to the overseas markets fetching remunerative prices to traders and farmers.
- Indian agricultural produce, which includes horticultural produce and processed foods, are exported to over 100 nations with major markets in the USA, Middle East and European Union.

### **Growth story of agricultural exports:**

- In 1950-51, the value of agri-export was about Rs. 149 crores which took giant strides reaching the level of Rs. 2.53 lakh crores in 2019-20.
- According to [Economic Survey](#) (2019-20), India has been a net exporter of agri-products since the rollout of economic reforms in 1991. Marine products, basmati rice, buffalo meat, spices, non-basmati rice, cotton raw, oil meals, sugar, castor oil and tea are the major commodities exported from India.
- Recently, India has expanded its cereals export footprints by shipping rice, wheat and other cereals to newer destinations.
- Concerted efforts of APEDA to boost the export of speciality rice varieties (non-basmati) have also started yielding results.
  - Recently, the first consignment of 'red rice' was flagged off to the USA.
    - 'Red rice' is a naturally iron-rich variety grown traditionally in the Brahmaputra valley of Assam. Locally referred to as 'Bao-Dhaan', red rice is an integral part of Assamese food.
  - APEDA also recently facilitated the export of a patented rice variety, 'Village Rice' to Ghana and Yemen through air and sea routes.

- Enriched with protein, fibre and a variety of minerals, the 'Village Rice' was sourced directly from the farmers of Kumbakonam, Thanjavur district, Tamil Nadu by a start-up.
- In addition to rice, demand for wheat and other Indian cereals was robust during 2020-21. Demand for millets, black rice and pseudo cereal quinoa is also rising due to their special health benefits.
- A surge is also recorded in the export of fresh fruits and vegetables. Grape, pomegranate, mango, banana and orange account for a large portion of fruits exported, while onion, potato, tomato and green chilli are major constituents of the vegetable export basket. Among fruits, India is the largest producer of mango in the world with over 1,000 varieties in hand. But, currently, our exports are dominated by Alphonso and Kesar.

### **Significance:**

- Agricultural exports will play a pivotal role in realising the vision of doubling farmers' income by 2022.

### **Concerns:**

- Despite India's impressive growth in agricultural exports, it is to be noted that the country's share in global agricultural exports does not match its potential and opportunities. It was merely 1.1 percent in 2000 that rose to 2.27 percent in 2017 valued at 39 billion US dollars.
- Currently, India ranks amongst the top 10 exporters of agricultural products in the world, but can be among the top five exporters according to the World Trade Centre.

### **Opportunities:**

- Some of the potential opportunities to deepen India's footprint in the agricultural exports segment are as follows.
  - Spices have a major share of about 37 percent in the total export value from horticulture products, but there still lies untapped potential due to amazing diversity in Indian spices. Spices Board has initiated steps to implement Entrepreneurship Development Program for pushing export in ODOP (One District One Product) districts.
  - Due to increasing health consciousness at the global level, organic exports are finding increasing traction. Organic products from India include oil cake/meals, oilseeds, cereals and millets, spices and condiments, tea, medicinal plant products, dry fruits, sugar, pulses, coffee, etc. Experts have recommended the creation of exclusive 'Organic Product Export Zones' in these states.
  - India has the world's largest resource of medicinal plants. Based on therapeutic properties, over 960 types of medicinal plants are traded, of which 178 species have yearly consumption levels of over 100 metric tonnes. The demand for Indian herbs and herbal products is rising in many countries, especially in European and other advanced

nations. Export of popular Ashwagandha herb has doubled in the USA in the past two years.

- Value addition of fruits and vegetables is another area where great potential exists due to the increasing demand for processed products.
- The concept of 'Farm Factories' is a new approach in which high-value crops are grown in temperature, moisture and nutrition controlled environments assuring high organic yield. This will assure higher productivity in Indian agriculture.

### **Challenges:**

- The presence of pesticide and chemical residues is a major cause of concern for agricultural exports in India. Consignments of Indian food exports sometimes get rejected due to residue levels that are higher than the Maximum Residue Limit (MRL) set by importing nations.
- Lack of market intelligence among the farmers and traders is a major challenge in further strengthening India's agricultural exports.

### **Policies for Promotion:**

- The Department of Commerce has come up with a comprehensive Agriculture Export Policy (AEP) that was formally launched by the Government of India in December 2018.
  - AEP was developed with a target to double agricultural exports from the present US dollar 30+ billion to US dollar 60+ billion by 2022 and reach US dollar 100 billion in the next few years thereafter. It also emphasises diversification of export basket, promotion of organic and ethnic agri-products, and boost high-value agricultural exports.
- The main agenda for the agricultural exports sector would be boosting export with value addition, and import substitution.
- The Government has initiated several initiatives to explore the potential in several agri-commodities while addressing challenges in the agricultural exports.
  - Broadly, policy recommendations are categorised into two categories - strategic and operational. Among strategic interventions, the development of robust infrastructure is recommended and also the creation of Mega Food Parks, integrated cold chains and state-of-the-art testing centres. Logistics and facilities are being developed and improved for pre-harvest and post-harvest handling, storage and distribution and processing.
  - At the behest of the Ministry of Agriculture and Farmers' Welfare, agri-product specific Export Promotion Forums (EPFs) have been created under the aegis of APEDA.
  - Each state may have its own State Export Policy to further give a fillip to agri-exports with State-specific provisions, developing product-specific clusters in different agro-climatic zones and enable the clusters to increase productivity, increase area under cultivation and improve the quality of exportable produce. After successful

implementation of these clusters, AEP suggests to further create Agri Export Zones to facilitate value addition and creation of common facilities.

- Department of Commerce has created a portal on trade analytics that provides the trends for different commodities in different markets. The Federation of Indian Export Organisations runs an India Trade Portal that provides information related to tariff scenarios (in Free Trade Agreement and non-FTA situations), delivers SPS (Sanitary and Phyto-Sanitary) notifications, and also provides a window for Indian Embassies to offer market leads.
- To address the transport and logistics issues, the Government of India has initiated several new projects in recent times.
  - India Railways 'Kisan Rail' is an exclusive service primarily to enable farmers and producers to transport their agricultural produce from rural areas to major towns and cities at affordable cost. Currently, 157 Kisan Rail services are being operated on 18 routes for transportation of fruits, vegetables and other perishables.
  - The scheme 'Transport and Marketing Assistance' for specified agricultural products is providing assistance for the international component of freight along with assistance for the marketing of agricultural produce.
  - The Ministry of Civil Aviation is set to launch the 'Kisan Udan' scheme to facilitate air transport of perishables, especially in the north-eastern region and tribal districts.

#### **Institutional framework:**

- In the institutional mechanism of the Government of India, the [Agricultural and Processed Food Products Export Development Authority \(APEDA\)](#) is the chief agency primarily responsible for the export promotion and development of listed agriculture, horticulture, and dairy and livestock products.
- Additionally, the Department of Commerce under the Ministry of Commerce and Industry works to develop strategies and policies for increasing foreign trade across sectors, including the agriculture sector.
- The Ministry of Food Processing Industries provides leverage to agricultural exports by focusing on the entire value chain, value addition and logistics.

## **Chapter 3: Emerging Trends in Agricultural Production**

### **Significance of the agricultural sector in India:**



- Agriculture is considered the backbone of the Indian economy. It plays a vital role in national income, output, employment generation and foreign exchange earnings.
  - Due to structural changes in the economy, the contribution of the primary sector to GVA came down from 53.71 percent in 1950-51 to 18.85 percent in 2020-21. Though the share of this sector in real gross value added has steadily declined, it is still very high in view of the world average of four percent of global GDP.
  - The share of the agricultural sector in employment generation has decelerated from 69.40 percent in 1951 to 43 percent in 2021. Still, it remains the country's major source of livelihood for more than half of the population of the country. Around 54.6 percent of the total workforce derives its sustenance through direct employment in agriculture either as cultivators or as agricultural labourers as per the latest population census report.
  - The contribution of agriculture and allied sectors to foreign exchange earnings has also slid down from 44.24 percent in 1960-61 to 4.34 percent in 2020-21 but it also still earns a substantial amount of foreign exchange for India.

### **Trends in Agricultural Production:**

- India has made remarkable progress in the field of agriculture and allied sectors during the course of seven decades of planned economic development.
- Total food grain production in the country was 305.44 million tonnes in 2020-21. As a result of rapid growth in food grain production, per capita per day availability of food grains in India has gone up from 395 gms in 1951 to 512.5 gms in 2020.
- India is the largest producer of pulses in the world. Whereas the production of cereals shot up by more than six times, the production of pulses went up merely by three times during the period under reference.
- Major commercial crops like cotton, jute, tea, coffee, rubber, sugarcane, oilseeds have registered impressive growth over the years.

### **Trends in Horticultural Production:**

- The diverse agro-climatic conditions and wide varieties of soil in the country make it possible to grow almost all types of horticultural products like fresh fruits, vegetables, root and tuber crops, flowers, aromatic and medicinal crops, spices and plantation crops.
- The total horticultural production in India has reached 326.58 million tonnes in 2020-21.
- Vegetables constitute more than 59 percent of total horticulture production in India. Fresh fruits are also an important part of the horticulture sector. They account for nearly 31 percent of total horticulture production in the country. In fact, India has emerged as the second-largest fruit and vegetable producer in the world after China.
- The country occupies the first position in the world in the production of fruits like mango, banana, sapota, pomegranate and amla and vegetables like peas and okra.

- Further, it occupies the second position in the world in the production of brinjal, cabbage, cauliflower and onion, and third in potato and tomato.
- India has the honour to be the largest producer, consumer and exporter of spices and spice products.

### **Trends in Livestock Production:**

- Livestock is an important sub-sector of agriculture in India. It contributes nearly 30 percent to total agriculture and allied sector output.
- India has been the largest producer of milk in the world continuously for last more than two decades nearly, 19 percent of the world's total milk production is contributed by India.
- Poultry production in India has taken a quantum leap through the adoption of scientific farming practices and technological interventions. India has emerged as the third-largest producer of eggs in the world.

### **Trends in Fisheries:**

- The fisheries and aquaculture is an important source of income and employment generation in India.
- Due to its vast coastline and varied inland resources, India has emerged as the second-largest fish producing country accounting for 7.58 percent of global production.
- The sector has been one of the major sources of foreign exchange earnings, with India being one of the leading seafood exporting nations in the world.

### **Diversification of Agriculture:**

- Agriculture and allied sectors consist of four major sub-sectors namely, crop sector, livestock, forestry and fisheries.
- The contribution of the crop sector to GVA by agriculture which was 67.39 percent in 2010-11 declined to 58.15 percent in 2019-20. The share of the livestock sector in VoP from agriculture shot up from 19.02 percent to 28.26 percent during the same period.
- Similarly, the contribution of fishing and aquaculture also improved from 4.35 percent to 6.52 percent during the last decade.
- Among the farm sector products, there has been a shift toward commercial crops and horticultural crops viz., fruits, vegetables, spices, etc.

### **Trends in Agricultural Trade:**

- Presently, India is not only self-sufficient in food grains but also a net exporter of agricultural products, occupying the seventh position in the world.

- India's export of agricultural and allied products amounting to Rs 2,52,000 crores in 2019-20 reflects a high ACGR of 12.19 percent.
- Whereas the overall [balance of trade](#) of India has always been negative, the trade balance of agricultural goods has not only been positive but also increased nearly by 22 times.
- The composition of Indian agricultural exports has undergone a substantial change during the post-liberalisation period. There has been a structural shift from traditional agricultural exports like tea, sugar, molasses, tobacco, cashew kernels, oil cakes, etc. towards more value-added items such as processed and canned fruits, juices, vegetables, meat, fish and fish preparations and other packed products.
- India's agri-export basket accounts for a little over 2.5 percent of world agri-trade.

### **Conclusion:**

- Agriculture continues to be the most crucial sector of the Indian economy. In the course of seven decades of planned economic development, Indian agriculture has made great strides.

### **Additional information:**

- Fisheries and Aquaculture Infrastructure Development Fund (FIDF) worth Rs7,522 crore was created in October 2018. The fund aims to boost annual fish production to 20 million tonnes by 2022-23 and generate over 9.40 lakh employment opportunities.
- Envisaging a blue revolution through sustainable development of the fisheries sector, the [Pradhan Mantri Matsya Sampada Yojana](#) scheme sets an ambitious target to enhance the fish production to 22 million tons by 2024-25 and generate about 15 lakhs direct gainful employment opportunities.

## **Chapter 4: Expanding Viable Agri-Finance**

### **Characteristics of the Indian agricultural sector:**

- Indian agriculture is dominated by small and marginal farmers that account for 86 percent of all holdings and 47 percent of the operated area - with an average landholding size of 1.08 hectares. They contribute more than 50 percent of the total agricultural and allied output.
- Also approximately, 44 percent (as per ILO estimate of 2018) of the working population is employed in the agriculture and allied sector.

### **Significance of agriculture credit:**

- Agriculture financing plays an important role in supporting both on and off-farm agricultural activities and businesses. For a farmer, access to affordable institutional credit becomes crucial to start and sustain a good crop cycle based on quality inputs.
- Agricultural credit also plays an important role in providing essentials during adversity. It is also significant to be able to absorb the shock of crop failure due to reasons such as drought and pest infestation or loss incurred due to price crash, the farmers must be financially equipped.

### **Agricultural credit in India:**

- In India, scheduled commercial banks (79 percent) are the major players in supplying credit to the agriculture sector followed by rural cooperative banks (15 percent), regional rural banks (5 percent) and [micro finance](#) institutions (1 percent).

### **Evolution of Agriculture Institutional Credit Policies:**

- Consistent efforts have been made in India over the years to enhance the access of the agricultural sector to institutional credit.

### **Credit co-operative movement:**

- The credit cooperative movement is targeted primarily at providing access to affordable credit to farmers, especially the small and marginal ones.

### **Regional Rural banks:**

- An important intervention for expanding the coverage of agricultural credit, especially to small and marginal farmers, involved the establishment of the Regional Rural Banks (RRBs) in 1976.

### **Agricultural Credit under Priority Sector Lending:**

- Priority Sector Lending (PSL) was launched in 1974 to statutorily earmark a fraction of credit to areas deemed as priority sectors. Under this framework, the banks are required to achieve an agriculture target of 18 percent and a sub-target of 8 percent of Adjusted Net Bank Credit (ANBC) for small and marginal farmers.

### **NABARD:**

- The creation of "The National Bank for Agriculture and Rural Development" ([NABARD](#)) in 1982 was another milestone in this direction.
- NABARD, in 1992, introduced the Self-Help Group (SHG) model to further enhance financial inclusion of the excluded segments.



### **Kisan Credit Card Scheme:**

- The [Kisan Credit Card scheme](#), introduced in 1998, is aimed at providing adequate and timely credit support from the banking system under a single window with flexible and simplified procedure for the farmers for their overall credit requirements.
- Some of the other important initiatives taken by the Government include the implementation of the Interest Subvention Scheme (ISS) for providing credit for crop production at a reduced interest rate, Pradhan Mantri Fasal Bima Yojana (PMFBY), for providing a safety net against natural calamities.
  - Pradhan Mantri Fasal Bima Yojana (PMFBY) introduced in 2016, is the world's largest crop insurance scheme in terms of farmer participation and 3<sup>rd</sup> largest in terms of premium. Know more about [Pradhan Mantri Fasal Bima Yojana \(PMFBY\)](#) in the linked article.

### **Use of Technology:**

- Digital technology and the use of digital means to communicate, transact, source and analyse data have introduced new channels of service delivery in the financial sector.
- Some of the important interventions in this direction involve the following.

### **Digitisation of Land Records:**

- GoI started the Computerisation of Land Records Scheme to digitise all land records in 1988-89. Thereafter, in August 2008, the Digital India Land Record Modernisation Programme (DILRMP) was launched by the Government of India.

### **One Nation One Market:**

- National Agriculture Market popularly known as [e-NAM](#) launched in 2016, is an innovative initiative in agricultural marketing to enhance farmer's accessibility digitally to multiple numbers of markets and buyers, and to bring transparency in trade transactions with the intent to improve.

### **Pradhan Mantri Jan Dhan Yojana:**

- The [Pradhan Mantri Jan Dhan Yojana \(PMJDY\)](#) was launched in August 2014 with the objectives of providing universal access to banking facilities to all households, conducting financial literacy programmes, creating credit guarantee funds, micro-insurance and unorganised sector pension schemes.

### **Challenges in Agriculture Financing:**

- Despite the impressive growth in formal agricultural credit, there are still several challenges that need to be tackled as per the NABARD's Financial Inclusion Survey Report 2016-17, which indicated that 72 percent of the credit requirement was met from institutional sources and 28 percent from non-institutional sources. This ultimately leads to diversion of funds and consequently, a high incidence of indebtedness among the farmers.
- The problem of financial exclusion gets aggravated due to the lack of a legal framework for landless cultivators.
- The agriculture sector is fraught with inherent challenges which makes it unattractive for formal financial institutions. Two core features of agricultural production are the long time lag between input investment and profit realisation, and the large risks imposed on agricultural production by weather shocks.

### **Recommendations:**

- Institutional credit at a reasonable cost all along the agri-value chain can catalyse the transformation of subsistence farmers into vibrant commercial farmers.
- A win-win model to spur agriculture growth is the linkage of Farmer Producer Organisations (FPOs), marketing cooperatives and integrators with banks, as exemplified by the SHG-bank linkage programme. This will enable them to reap the benefits of economies of scale.
- Banks should provide crop loans, eligible for interest subvention, only through KCC mode to curb the mis-utilisation of interest subsidies.
- The corpus of the Rural Infrastructure Development Fund (RIDF) should be enhanced.
- The government of India should push state governments to complete the digitisation process and the updating of land records in a time-bound manner.
- Aggressive efforts are needed to improve institutional credit delivery through technology-driven solutions to reduce the extent of financial exclusion of agricultural households.

## **Chapter 5: Prospects of Agri-Tourism**

### **Introduction:**

- The concept of agri-tourism is gaining importance and growing in recent years.
- Agri-tourism combines agriculture-based activities and tourism aspects that bring visitors to the farms, where they not only enjoy the vacation and leisure but also understand and appreciate the activities performed by the farmers, who in turn get an opportunity to maximise their profit and employment potentials on farm products and services.

- In India, agri-tourism stands on three pillars, viz. farm recreation, farm stays and marketing of local farm produce. The main focus is on increasing farm income along with providing recreation, entertainment, and/or educational experiences to visitors.
- Agri-tourism is also viewed as a part of rural tourism. To promote agri-tourism, its concept needs convergence with the concepts of rural tourism, eco-tourism, health tourism, and adventure tourism.

### **Significance of the sector:**

#### **Boost to the rural and agrarian economy:**

- Agri-tourism is another realm of the tourism sector that has the potential to grow immensely across the globe, including India.
- Agriculture makes a significant contribution to India's GDP and thus forms the backbone of the Indian economy. Agri-tourism has been considered as a potential option to boost the agrarian economy in India. Agri-tourism would increase the share of agriculture in national GDP thereby providing an additional source of income along with conventional agriculture and tourism industry.
- The rural economy gets a substantial boost from the union of agriculture with the tourism sector resulting in agri-tourism.

#### **Alternate job opportunities:**

- Agri-tourism has the potential to reduce the uncertainty for farmers by generating additional income and creating job opportunities for farm families.
  - Agri-tourism can provide additional income to farmers through several forms like selling the farm produce as farm fresh immediately after harvesting, processing of produce in front of tourists, value addition of the produce and on-farm marketing.
- This becomes further crucial because around 90 million farmers (80 percent of them are small and marginal farmers) covering 6.25 lakh villages are in urgent need of income diversification along with additional income generation.
- Agri-tourism creates income and employment opportunities not only to the farmers directly but also to the rural localities indirectly.

#### **Other benefits:**

- A number of financial, environmental, educational, demographic and social benefits are provided to tourists, farmers and rural communities by agri-tourism.
  - It helps farmers in direct marketing of their farm produce to consumers.
  - This form of tourism is environmentally sustainable.

- It provides an opportunity for the urban population to understand and appreciate the rural lifestyle. Agri-tourism helps in raising public awareness about agricultural activities and related issues and values.
- Agri-tourism provides avenues to reduce the migration from rural to urban areas and attracts as well as retains the youth in the agricultural sector.
- Agri-tourism also helps in preserving local traditions, art and culture. Tourists visiting farms also tend to purchase local handicrafts and souvenirs.
- Agri-tourism facilitates the up-gradation and revitalisation of community facilities. Agri-tourism is a vehicle for the development of local communities.
- It helps in the empowerment of rural women, diversifies and improves the rural economy.
- Agri-tourism is environmentally conscious, socially responsible, culturally compatible, ethically valuable, market competitive and economically profitable.

### **Challenges:**

- The establishment of agri-tourism faces certain challenges like attractions, accommodation, recreational activities, entertainment programmes, food arrangements, safety and security aspects, medical facilities, and risks and liabilities in case of accidents.
- Some of the major challenges in up-scaling and promoting agri-tourism include lack of farmer's knowledge, lack of training opportunities to learn about agri-tourism and absence of infrastructure support.

### **Agri-tourism Promotion Strategies:**

- Promotion of agri-tourism primarily needs proper recognition of the agri-tourism industry; supportive government policies; education and capacity building of the farmers to develop their agri-business/entrepreneurial skills; formation of farmers' cooperative for implementation of agri-tourism; financial assistance; training of the farmers for improvement in products and service quality; proper marketing; risk management and conflict management; development of strategic partnerships; and setting up location-specific successful agri-tourism models.

## **Chapter 6: Scaling Agri - Startups and Enterprises**

### **Introduction:**

- Agri-startups and agri-business enterprises are emerging considerably across the country to support the agriculture value chain activities and also to deliver efficient, innovative technologies, products and services to the agricultural development stakeholders including farmers and consumers.



- In 2021, the agriculture and allied sector accounted for 14,311 startups.
- These start-ups are making a significant impact on the lives of the farming community. Simultaneously they are also creating employment opportunities.

### **Measures to scale up Agri-Startups and enterprises:**

- The Government of India, the State governments, the private sector, and the NGOs have initiated several steps towards strengthening the agri-startup ecosystem.
- Government of India's Startup India initiative; Agri-entrepreneurship and Innovation component of Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agricultural and Allied Sector Rejuvenation ([RKVY-RAFTAAR](#)); Startup incubation and innovation funding support from DBT, NABARD and NITI Aayog are accelerating the scaling-up of Agri-Startups.

### **Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agricultural and Allied Sector Rejuvenation (RKVY-RAFTAAR):**

- Ministry of Agriculture and Farmers' Welfare came up with Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agricultural and Allied Sector Rejuvenation (RKVY RAFTAAR) scheme under the component called "Innovation and Agri-Entrepreneurship Development." The scheme was launched for providing financial support and nurturing the incubation ecosystem.
- It aims to encourage start-ups in agriculture and to contribute directly or indirectly to enhance the income of farmers by providing them with some new opportunities and providing employment to youth.

### **Incubation centres:**

- Agribusiness Incubation Centres were established across India and for their handholding, five Knowledge Partners are entrusted.

### **Department of Biotechnology (DBT):**

- Biotechnology Industry Research Assistance Council (BIRAC), which is a not-for-profit Section 8, Public Sector Enterprise, has been set up by the Department of Biotechnology (DBT), Government of India as an Interface Agency to strengthen and empower the emerging biotech enterprises to undertake strategic research and innovation, addressing nationally relevant product development needs.

### **Ministry of Micro, Small & Medium Enterprises - ASPIRE:**

- A Scheme for Promotion of Innovation, Rural Industry & Entrepreneurship (ASPIRE) is being curated by the Ministry of MSME, Government of India.

**Pradhan Mantri Mudra Yojana (PMMY):**

- PM launched the [Pradhan Mantri Mudra Yojana](#), wherein Micro Units Development and Refinance Agency Bank or MUDRA Banks provide loans at low rates to micro-finance institutions and non-banking financial institutions, who in turn provide low-interest loans to startups and MSMEs.

**Agri-Clinics and Agri-Business Centres:**

- The Agri-clinics and Agribusiness Centres (ACABC) is an innovative scheme of the Ministry of Agriculture and Farmers' Welfare, Government of India and implemented by the National Institute of Agricultural Extension Management and National Bank for Agriculture and Rural Development, to take better methods of farming to every farmer across the country.

**Funding Sources for scaling-up startups:****Bootstrapping/Self-financing:**

- Bootstrapping a start-up means growing your business with little or no venture capital or outside investment. It means relying on your own savings and revenue to operate and expand.

**Angel Investors:**

- Angel investors are individuals who invest their money into high potential startups in return for equity.

**Venture Capital Funds:**

- Venture capital (VC) funds are professionally managed investment funds that invest exclusively in high growth startups.
- VCs take startup equity in return for their investments and actively engage in the mentorship of their investee startups.

## Chapter 7: Agriculture Key to India's Prosperity

**Significance of the agricultural sector to India:**

- The gross value addition of the agriculture sector in India has consistently increased through the past decade. The agricultural exports as a percentage of India's agricultural GDP has increased from 9.4 percent in 2017-18 to 9.9 percent in 2018-19.
- Agriculture employs a majority of the almost 70 percent Indian population living in rural hinterlands.

### **Significance of the agricultural sector to the world:**

- India can easily be called the heart of global agriculture owing to its vast agro-ecological diversity. Agro-climatic diversity in the country makes possible the cultivation of innumerable types of crops powered by the large agricultural labour capacity of India.
- India is the world's agricultural powerhouse not just in terms of diversity of crops but also in terms of the sheer quantities of production. Alongside lucrative opportunities for farmers and investors, the future will also bring food security to the world by channelling the excess of Indian agriculture to the world market.
- As a testimony to its evergreen nature, even during the difficult time of the pandemic and consequent lockdown, Indian agriculture contributed its share in the world food supply chain, displaying great resilience.

## **Chapter 8: Gandhiji and Sanitation**

### **Introduction:**

- Article 47 of the Constitution provides inter alia that the State shall regard raising the standards of living of its people and improvement of public health as among its primary duties.
- Article 48-A provides for protection and improvement of the environment as an endeavour of the State.
- Without adequate and appropriate sanitation none of the three - raising the standards of living, improving public health and protection and improvement of the environment - are possible.

### **Swachh Bharat Abhiyan:**

- In 2014, inadequate sanitation caused economic loss equivalent to 6.4 percent of India's GDP at US\$ 53.8 billion. It accounted for over 55 percent of the global burden of Open Defecation.
- In order to end the practice of Open Defecation, the [Swachh Bharat Abhiyan \(SBM\)](#) was announced.
- It became an embodiment of the collective spirit of the nation, and with a strong and committed political leadership, public financing, partnerships and most importantly people's participation in

the development process, Swachh Bharat Abhiyan showed the path for large-scale social transformations.

- In five years, under Swachh Bharat, more than 10.2 crore toilets were constructed and extensive, focussed and sustained campaigns for behaviour change were launched. More than 55 crore Indians started using toilets and on 2 October 2019, all Indian Districts and States declared themselves as Open Defecation Free (ODF).
- Achieving an ODF India in record time also meant that India attained Sustainable Development Goal (SDG) 6.2 – Sanitation for all – eleven years before the UN’s SDG target of 31 December 2030.

## Phase II:

- Thus, to pursue the objectives of Clean India, based on extensive discussions with the States, Union territories, other Ministries/Departments of the Government of India, [NITI Aayog](#) and other stakeholders; the Government of India, in February 2020, approved Phase II of the Swachh Bharat Mission-Grameen (SBM-G) to focus on the solid and liquid waste management (SLWM) and on the sustainability of ODF status.
  - The Department of Drinking Water and Sanitation (DDWS) is implementing this in a Mission Mode from 2020-21 to 2024-25. Phase II will provide impetus to the rural economy through the construction of household toilets and need-based community sanitary complexes, as well as the infrastructure for solid and liquid waste management such as compost pits, soak pits, waste stabilisation ponds, bio-gas plants, material recovery facilities, etc.
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