

1. AGRICULTURE In INDIA – RETROSPECT and FUTURE PROSPECTS

Introduction

- India is blessed with 20 agri-climatic regions, 15 major climates and 46 soil types, and an amazing variety of agricultural products largely consumed at domestic level.
- Around 54.6% of the total workforce still derives its sustenance through direct/indirect employment in agriculture as per the latest census report.
- Lack of assured education, unavailability of fertilisers and pesticides held back productivity. While India achieved food security, nutritional security remains elusive.

Achievement of Food Security

- **Productivity** – The research of 1950s and 60s on the development of High-Yielding Varieties (HYV), the application of fertilisers and pesticides, etc. has ensured that by 2019 the yields of rice and wheat have respectively increased to 2659 kg/ha and 3507 KG/HA. As a result, the per capita net availability of food-grains has increased from 394.9 g per day in 1951 to 512.6 g per day in 2020. This is impressive given that our population too has quadrupled since Independence. Provision of formal credit has played an enabling role in this. The total production of food grains went up from around 51 million tonnes in 1950–51 to 305 million tonnes in 2020–21.

Operation Flood launched in 1970 through the National Dairy Development Board (NDDB), has made India the largest producer of milk in the world (19% of the world's total milk production in 2019 –20). The **Green Revolution** in cotton production in early 2000s, **Blue Revolution** in Fisheries, **Yellow Revolution** in edible oil are other examples.

- **Agricultural Marketing** - Being a State Subject, State Governments enacted Agricultural Produce Market Regulations (APMR) Acts during the 60s and 70s whereby agricultural produce could only be bought by licensed and registered traders in these markets. Unlicensed/unregistered traders could not procure from farmers. All the transactions would take place in the designated market yards. The objective was to ensure transparency, fairness and hindrance free agricultural trade with adequate remuneration to the farmers.
- **Public Procurement** - The Food Corporation of India (FCI) was set up in 1965, to undertake price support operations, to distribute foodgrains under the Public Distribution System (PDS) and to maintain buffer stocks. Minimum Support Prices (MSPs) were determined through the Agricultural Prices Commission, later renamed as Commission on Agriculture Costs and Prices (CACP) in the 1980s.

The net was significantly expanded with the National Food Security Act, 2013.

Need For a New System: WHY

- **Agricultural Marketing** –
 - The system designed to protect farmers was inefficient in the movement and trade of agricultural commodities. The number of markets failed to grow.
 - As only licensed traders could procure from these markets, the traders with licences blocked the entry of new entrants, formed cartels fixing prices rather than engaging in open auctions as envisaged.
 - With markets faraway from villages, commission agents acted as a conduit between farmers and traders getting a larger chunk of the final retail prices, with the share of farmers getting smaller.
 - Linkages to food processing and export markets remained weak as well especially due to lack of private investment. The post-harvest losses are estimated to be of the range Rs. 90,000 crores annually.

- **Sustainability** – Climate change threatens crop yields due to unsustainable practices. Flood irrigation, lopsided/excessive fertiliser usage are some examples. Agriculture also contributes to air pollution through the emission of greenhouse gases and stubble burning. Degrading soil health is another challenge to sustaining our production levels. *Soil Organic Carbon* (SOC), an important indicator of soil health, has seen a decline across India. This is partially also due to imbalanced fertiliser use and the overuse of nitrogenous fertilisers.
- **Water** –Groundwater levels are depleting in survey areas as the pace of extraction is exceeding the pace of recharge. Punjab, Rajasthan, Delhi and Haryana are the states with highest levels of over exploitation. Nearly 90% of all groundwater extracted annually is for agricultural purposes. Nearly 2/3rd of the water used for irrigation comes from groundwater. The conventional flood irrigation used by farmers in India is inefficient, when compared to micro-irrigation systems which reduces water use from 30 to 60%, depending upon the method of irrigation used – drip or sprinkler.
- **Nutritional Security** – The Comprehensive National Nutrition Survey (CNNS) 2016 –18 found the prevalence of underweight and stunting to be 33.4% and 34.7% respectively. Household income effect which in turn improves access of households to more diverse nutritious foods, better health and sanitation facilities, bio-fortification etc. can be solutions to this.

Way Ahead

- **The Role of Technology:**
 - Agri-tech or Ag-tech has emerged as one of the most attractive investment destinations for start-ups. Recent reports suggest that India is the third largest Ag-tech market. The applications range from developing models to predict yields using satellite data, administrative data and weather data through AI – ML models to Blockchain platforms being developed to provide end to end traceability of agricultural produce, a key constraint to growing our export base.
 - Handheld gadgets powered by AI – ML are being developed to assay and grade produce, another key constraint in marketing.
 - The Ministry of Agriculture and Farmers Welfare (MA&FW) has been developing the IDEA platform, a database of 10 crore+ farmers on which private sector can build solutions scalable across India.
- **Sustainable intensification:**
 - **Agro-Climatic Regional Planning (ARCP)** - Aligning cropping systems with agro-climatic systems can boost and enhance India's adaptation and mitigation capabilities in combating climate change. E.g., shift in the production base of rice and wheat to eastern part of the country is one avenue. However incentive mechanisms will have to be designed for farmers currently growing wheat rice in water-stressed areas to switch to different crops.
 - **Agro Ecological Farming** is another concept. In India, natural farming is promoted as *Bharti Prakritik Krishi Paddhati Programme (BPKP)* under the Centrally Sponsored Scheme – *Paramparagat Krishi Vikas Yojana (PKVY)*. BPKP is aimed at promoting traditional indigenous practises, based on use of on from cow dung urine formulations with application of recycling, mulching, periodic soil aeration and exclusion of all synthetic chemical inputs. States such as Andhra Pradesh, Himachal Pradesh and Gujarat are leaders in this movement.

- NITI Aayog has taken a multidimensional approach involving scientific evaluation, documentation of best practises and studies, global and national level consultations, and technical and interventions for traceability and certification of produce.
- **Nutritional Security** – Crops such as millets are more nutritious and require lesser water than rice or wheat. Whilst MSP for millets is declared, procurement and distribution under the PDS is minuscule compared to rice-wheat. Including millets at a large scale in the PDS and efforts in R&D to raise productivity of millets relative to cereals may align incentives of government policies and farmer-growing decisions.

The success of the cooperative model was demonstrated in the white revolution. The central government is committed to creating 10,000 Farmers Producer Organisations (FPO). The recently formed Ministry of Cooperation is a further demonstration of the same commitment. By making FPOs eligible to borrow under the AIF, shared post-harvest infrastructure can be created, allowing for greater reach to the terminal markets and hence lower wastage.

Reforms

Three farm bills, State Governments reform in APMC acts, Rs.1 lakh crore Agriculture Infrastructure Fund (AIF) in which existing APMC market yards are also eligible are the major reforms. The Farmers Produce Trade and Commerce Promotion and Facilitation Act, 2020 attempts to open up the truly regulated agricultural market of the country. Through infusion of technology, the act stands to modernise the long stagnant sector and make it globally competitive. It also offers opportunities to the private sector to collaborate with farmers to reach a mutually beneficial optimum.

2. AGRICULTURAL EXPORTS – GROWTH POTENTIAL & OPPORTUNITIES

Introduction

- The contribution of Agriculture and Allied Sectors to foreign exchange earnings was around 14.34% in 2020-21. According to Economic Survey 2019–20, India has been a net exporter of agri-products since the rollout of Economic Reforms in 1991.
- The share in global agricultural exports was 2.27% in 2017 and India ranks amongst the top 10 exporters of agricultural products in the world. However, India's agri-export basket accounts for a little over 2.5% of world agri-trade.
- India is the seventh largest exporter of food-grains in the world. *India is the largest producer of milk, pulses and jute in the world and the second largest producer of rice, wheat, sugar cane, groundnut, vegetables, fruit and cotton.* India occupies 1st position in the world in production of fruits like mango, banana, supporter, pomegranate and aonla and vegetables like peas and okra. It occupies 2nd position in the world in production of brinjal, cabbage, cauliflower and onion, and 3rd in potato and tomato. India is the largest producer, consumer and exporter of spices and spice products.
- India is the largest producer of eggs in the world. Due to its vast coastline and varied in land resources, India is the 2nd largest producer of fish accounting for 7.5% of global production.

Indian Agriculture and Allied Sectors broadly covers four activities – crop, livestock, forestry and fisheries. In recent years, agricultural sector has been diversifying to produce more livestock songs like milk, egg, meat, fish and other marine products. The crop sector includes field crops, plantation crops, horticultural crops, drugs and narcotic crops. There too has been a shift towards commercial crops horticultural crops – fruits, vegetables, spices, etc.

Current Policies –

- **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, dairy and livestock products. APEDA runs a specific promotional scheme under which financial assistance is provided for infrastructure development, quality development and market promotion. APEDA also conducts Central outreach programmes with buyers and sellers for understanding issues of common interest, and resolving them by appropriate interventions.
- The Ministry of Commerce and Industry works to develop policies for increasing foreign trade across sectors, including agricultural sector. The Ministry of Food Processing Industries provides leverage to agricultural exports by focusing on entire value chain, value addition and logistics. MA&FW along with Ministry of Fisheries, Animal Husbandry and Dairying largely focus on enhancing production, quality improvement and creating opportunities for exports.
- With the view to bring about blue revolution through sustainable development of fisheries sector, *Prime Minister Matsya Sampada Yojana* was launched on 10 September 2020. The scheme set an ambitious target to enhance the fish production to 22 million tonnes by 2024-25 and generate about 15 lakh direct gainful employment opportunities.
- *Mission For Integrated Development of Horticulture (MIDH)*, a Centrally Sponsored Scheme was launched from 1 April 2014. The MIDH provides financial, technical and administrative support to state governments for the development of the horticulture sector. Apart from this in order to promote horticultural exports, several centres for perishable cargoes and post-harvest handling facilities have been set up with assistance of APEDA in the country.
- **Transportation and Logistics –**
 - Indian Railways “*Kisan rail*” is an exclusive service to enable farmers and producers to transfer their agricultural produce from rural to urban areas at affordable cost.
 - “*KisanRath*” mobile application facilitates farmers and traders to get best transportation services for the produce at competitive prices.
 - “*Transport and Marketing Assistance*” Scheme for specified agricultural products is providing assistance for the international component of freight along with assistance from the marketing of agricultural produce.
 - The Ministry of Civil Aviation is set to launch the “*Kisan Udan*” scheme to facilitate transport of perishables, especially in the N–E region and tribal districts.

Exports Trends

- **Rice -**
 - On 4 March 2021, the first consignment of “*red rice*” was flagged off to USA. “Red rice” is a naturally iron rich variety grown traditionally in Brahmaputra valley, Assam. Locally referred as “*Bao-dhaan*”, it is an integral part of the Assamese food.
 - During May 2021, the first consignment of non-Basmati rice from Paradip international cargo terminal was shipped from Odisha to Vietnam. Non-Basmati rice exports has seen a significant growth due to new overseas markets such as Brazil, Chile, Bangladesh, Vietnam, Madagascar, etc.

- APEDA facilitated export of patented rice variety, "*village rice*" to Ghana and Yemen. Enriched with protein, fibre and variety of minerals, the village rice was sourced directly from farmers of Kumbakonam, Thanjavur district, Tamil Nadu.
- **Wheat** is being exported to Yemen, Indonesia and Bhutan and several other cereals to Sudan, Poland and Bolivia. Demand for millets, black rice and pseudo cereal quinoa is also rising due to special health benefits.
- **Fruits and vegetables** –
 - Grapes, pomegranate, mango, banana and orange account for large portion of the fruits exported, while onion, potato, tomato and green chilli constitute the vegetable export basket. The major destinations of Bangladesh, UAE, Netherlands, Nepal, Malaysia, UK, Sri Lanka, Oman and Qatar. India is the largest producer of mango in the world with over thousand varieties, but currently Alphonso and Kesar are mainly exported. APEDA is planning to push North-Indian varieties such *as Langda, Dussehri, Himsagar and Zardalu*.
 - New markets are being explored in Japan, South Korea, Australia and Mauritius.
 - Export related facilities have been set up in Varanasi and Saharanpur as per global norms.
 - New irradiation facilities have been planned in Mathura, Uttarakhand and Bihar in addition to those in Lucknow, Nashik, Bengaluru and Vashi.
- **Organic products** - Some new products such as moringa leaves powder, moringa freeze-dried value-added products, organically certified gluten-free jackfruit powder, retort packed jackfruit cubes, etc. have been added. North-Eastern region leads in the production of organic products followed by Uttarakhand, Madhya Pradesh, Rajasthan, Maharashtra and Goa.
- **Spices** have a major share of about 37% in horticulture exports. Spices Board has initiated steps to implement Entrepreneurship Development Programme for pushing exports in **One District One Product (ODOP)** districts.
 - For the first time, Kashmiri saffron is being exported to UAE.
 - Ginger is being exported from ODOP districts of Karnataka, Sikkim, Assam, Himachal Pradesh, Odisha and Manipur.
 - Turmeric oleoresins are being exported as value added products of turmeric.
 - Cumin sourced from Gujarat and Rajasthan is gaining popularity.
 - Export of spices with therapeutic qualities, like ginger, pepper, cinnamon, cardamom, turmeric, saffron, etc. have grown substantially on demand from new destinations.

Policy Trends

- **Export Promotion Forums (EPFs)** : MA&FW has prepared a comprehensive action plan towards promotion of agricultural trade. EPFs have been created under the aegis of APEDA. EPFs for eight agricultural and allied products – grapes, mango, banana, onion, rice, neutri-cereals, pomegranate and floriculture are functional. EPF is headed by Chairman, APEDA with members from exports panel and official members representing concerned ministries/departments. EPFs facilitate, support and provide solutions to challenges faced by exporters.
- **Product Specific Clusters** : Ideally, there should be a nodal agency of state to resolve and coordinate issues with regard to promotion of exports and facilitation. Each state may have its own state export policy to further give fillip to agree exports. States have been advised to adopt an innovation-based approach of developing *product specific clusters in different Agro-climatic zones*. The state-level nodal agency and related departments would enable the customers to increase productivity, and improve quality of exportable produce.

- **Agriculture Export Policy (AEP):** The Department of Commerce came up with a comprehensive AEP, formally launched by Gol in 2018. AEP was developed with a target to double agricultural exports by 2022 and reach US \$100 billion in the next few years. It also emphasises diversification of export basket, promotion of organic and ethnic agro- products, and boost high-value agricultural products. AEP suggests to further create agri-export zones to facilitate value addition and creation of common facilities after creation of product-specific clusters.
- The policy recommendations cover *strategic* and *operational* categories. Among strategic interventions, development of infrastructure such as creation of Mega Food Parks, Integrated Cold Chains and state-of-art testing centres are important. Logistics and facilities are being developed and improved for pre-harvest and post-harvest handling, storage and distribution and processing. Due to perishable nature of horti-products, major ports are under renovation to provide 24 x 7 customs clearance and sufficient quality in areas with better hinterland connectivity.
- Innovative strategies such as constituting separate funds dedicated to marketing of organic, value-added, ethnic, GI, region specific and branded products can be game-changers. Region specific agricultural products maybe popularised in destination markets such as *Agra Petha, Hyderabad biryani, Makhana from Bihar*, etc.
- **Market Intelligence Tool :** Department of Commerce has created a portal on trade analytics which provides the trends for different commodities in different markets. APEDA and MPEDA are operating “agri-exchange” and “fish-exchange” portals respectively to provide market intelligence. The Federation of Indian Export Organisations runs the Indian Trade Portal that provides information related to tariff scenario (in Free Trade Agreement or non-FTA situations), deliver SPS (Sanitary and Phyto-Sanitary) notifications, and also provides a window for Indian embassies to offer market leads. This info scattered across different webpages need to be integrated to ensure that exporters may take well-informed decisions on pricing, hedging, etc.
- There is a need to develop “Manual Of Importing Country Requirements” for all the major agricultural products from India for all major importing countries.

Opportunities

- In the context of climate change, “*Farm factories*” is a new approach in which high value crops are grown in temperature, moisture and nutrition control environments assuring high organic yield. Fruits and vegetables are best suited for farm factories as they naturally use less water with higher profitability as against cash on cereal crops. Moreover, the consumption of vegetables is going up in advanced countries and has been accelerated by COVID-19 and the demand of immunity boosting products. E.g., Gherkin – a variety of cucumber pickle is being exported to European countries.
- Vegetables and spices have untapped potential in USA, Vietnam, UAE, Malaysia and Sri Lanka. In case of fruits, UK, Netherlands, USA, Germany and Thailand top overseas markets with highest potential.
- Value addition of fruits and vegetables is another area with high potential increasing demand of processed products. E.g., Cashew requires value-addition in forms such as cashew apple jams and paste, flavoured cashew, roasted/salted nuts etc.
- Experts have recommended creation of exclusive “**Organic Products Export Zones**” in North-Eastern states and other states leading in organic products for processing, standardisation, storage, logistics and connectivity to ports and airports. Branding of products and registration of products as GI can further promote exports.
- Another important area is India’s largest source of **medicinal plants**. Export of popular Ashwagandha herb has doubled in the USA in past two years.

Challenges

- Consignments get rejected due to higher than Maximum Residue Limit (MRL) of pesticide and chemical residues set by the importing nations. E.g., the Government of Punjab on persuasion by Department of Commerce imposed a ban on sale of nine chemicals including tricyclazole and buprofezin during the Kharif season 2020.
- Traceability to the farm level is another important issue as it improves safety and quality compliance by regularly monitoring the production, processing and distribution stages. *BasmatiNet, Hortinet, Mango, TraceNet, MeatNet, PeanutNet* are some of the major traceability systems serving farmers.

3. AGRI-FINANCE

• Agricultural Credit: Why?

- Institutional credit is crucial to sustain a good crop cycle based on quality inputs.
- In indirect manner, credit facilitates marketing, warehousing, storage and transportation, all crucial to productivity.
- It also plays an important role during adversity and to absorb the shock of crop failure due to reasons such as drought and pest infestation or crashing of price.

• Issues:

- Indian agriculture is dominated by small and marginal farmers that account for 86% of all landholdings and 47% of the operated area – with an average landholding size of 1.08 ha. They contribute more than 50% of the total agricultural and allied output. Thus, on the demand side farmers face many risks beyond their control in trying to finance the investments necessary to increase productivity, and on the supply side financial institutions face large and systemic risks in providing credit to agriculture.
- The long time lag between input investment and profit realisation, and the large corporate risks due to weather shocks are the primary reasons for making agriculture sector unattractive for formal financial institutions.
- Out of the total agricultural households, approximately 30% still avail credit from non-institutional sources, and the incidence outside KCC is very high.
- The problem of financial exclusion gets aggravated due to lack of legal framework for landless cultivators as the absence of documentary evidence becomes a major hinderance for extending credit to the segment of the farming community who take up cultivation on oral lease.

• Evolution of Agriculture Institutional Credit Policies:

- Initiatives can be traced back to early 20th century, with the Credit Cooperative Movement. The objective of this movement was to provide affordable credit to farmers, specially the small and marginal ones. The Agricultural Credit Department was set up in the RBI, through the RBI act, 1934, to provide refinancing to the cooperative credit structure. Till the end of 1960s, this cooperative structure was responsible for providing production credit to farmers.
- The All India Rural Credit Survey Committee (AIRSCS, 1951-54) laid the foundation of institutional framework to establish a sound credit delivery system for agriculture and allied activities. The Nationalisation of Commercial Banks in 1969, the Economic Reforms in 1991 and the introduction of Kisan Credit Card (KCC) in 1998 followed by the doubling of agricultural credit in 2004 led to large-scale credit with a view to create a strong institutional base in rural areas.

- Since 1976, the Commercial Banks became the primary lending institutions and their branches in rural areas have expanded exponentially. The establishment of Regional Rural Banks (RRBs) in 1976 has ensured credit to small and marginal farmers.
- **Main Agricultural Credit Lending Policies**
 - **Priority sector lending (PSL):**
 - PSL was launched in 1974 to statutory earmark a fraction of credit to areas deemed as priority sectors. At present, RRBs and Small Finance Banks (SFCs) are required to meet a target of 75% towards PSL. Besides the overall PSL targets (40%), banks are required to achieve agricultural target of 18% and sub-target of 8% of ANBC for small and marginal farmers. The sub-targets are being gradually revised from 2020-21 onwards to 10% by 2023-24 in a phased manner.
 - The approach is to focus on “credit for agriculture” instead of ‘credit in agriculture’ to give impetus to financing of supply value chain in the sector.
 - **National Bank For Agriculture And Rural Development (NABARD) :** Established in 1992, NABARD introduced the Self-Help Groups (SHG) model to enhance financial inclusion of the excluded segments. The SHGs employ their full resources to disburse loan to their members through the agency of the banks. The banks issue credit against the gross guarantee and the size of loans is multiple times that of the resources deposited with the banks. NABARD is responsible for refinancing such credit.
 - **Kisan credit card scheme(KCC), 1998:** it 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. However, KCC should be made Aadhaar enabled and a centralised database should be created across the states to weed out the duplicitous cards (As per NAFIS survey 2016–17, 4.6% of agricultural households hold more than one card and only 10.5% were found to have a valid KCC while as a percentage of landholdings, 45% of farmers possess operative KCC as per the Agriculture Census 2015–2016).
 - **Interest Subvention Scheme (ISS)** – for providing credit for crop production at reduced interest rate.
- **Performance of Banking System**
 - Agricultural Credit as a percentage to agricultural GDP increased from 2% in 19 seventies to 47% by 2019–20.
 - In India Scheduled Commercial Banks (79%) are the major players in supply and credit followed by Rural Cooperative Banks (15%), RRBs (5%), and MFIs (1%).
 - **Small Finance Banks** set up with objective of deepening financial inclusion and have started their operations recently to cater to small and marginal farmers, low-income households, small businesses and other unorganised entities.
 - At the aggregate level, banks failed to achieve the agriculture target of 18% under PSL at systemwide level, the sub-target of small and marginal farmers however was achieved. RBI has given higher weightage to incremental priority sector credit in ‘identified districts ‘where PSL credit flows comparatively low.
- **Other Synergising Initiatives**
 - **Soil Health Cards (SHC)** for improving agricultural productivity, **Pradhan Mantri Krishi Sinchai Yojana (PMKSY)** to ensure irrigation facilities and **Pradhan Mantri Fasal Bima Yojana (PMFBY)** for providing a safety net against natural calamities are important steps. *PMFBY, introduced in 2016, is the world’s largest crop insurance scheme in terms of farmer participation and third largest in terms of premium. Integration of land records with the PMFBY portal, Crop Insurance mobile app for easy enrolment of farmers and uses of technology such as satellite imagery, remote sensing technology, drones, AI and machine learning to*

assess crop losses are some of the key features of the scheme. The scheme has made it easier for farmers to report crop loss within 72 hours of occurrence any event. The claim benefit is provided electronically into the bank accounts of the eligible farmer.

- **Digitisation Of Land Records** – Computerisation Of Land Records Scheme was started by GoI in 1988–89. In August 2008, the Digital India Land Records Modernisation Programme (DILMP) was launched by GoI to minimise land of property disputes and enhance transparency in the land records. It also has potential to address issues related to agricultural credit if banks can access the records online. This will also reduce multiple financing on the same piece of land.
- **One Nation One Market** – National Agricultural Market popularly known as e-NAM launched in 2016, is an innovative initiative on agricultural marketing to enhance farmers accessibility digitally to multiple numbers of markets and buyers, to bring transparency in the transactions and improve price discovery mechanism, quality commensurate price realisation and to develop the concept of “one nation one market” for agricultural produce. The online and transparent bidding system is encouraging farmers to increasingly trade on E – NAM platform.
- **Pradhan Mantri Jan Dhan Yojana** – launched in August 2014, with objective of providing universal access to banking facilities to all households, conducting financial literacy programme, creation of credit guarantee fund, micro insurance and unorganised sector pension schemes. The Jan Dhan accounts have been linked with several social security and insurance schemes Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantri Suraksha Bima Yojana and Atal Bima Yojana in May 2015. Jan Dhan – Aadhaar (mobile JAM) is the necessary backbone of the service.
- A win-win model is the linkage of Farmer Producer Organisations (FPO), marketing cooperatives and integrators with banks as exemplified by the SHG bank linkage programme.
- **Strategies Needed**
 - Banks should develop MIS to flag agricultural loans sanctioned against gold as collateral using core banking to segregate such loans for effective monitoring of end-use of funds.
 - Second, banks should provide crop loans, eligible for interest subvention, only through KCC mode to curb mis-utilisation of interest subsidy.
 - Third banks should be allowed to give consumption loans to farmers after the sanctioned limit of ₹1 lakh under the PSL based on collateral security and the repayment capacity.
 - To improve ease of credit, the limit of ₹3 lakh favouring collateral security by the banks in case of type arrangements can be revised to a higher limit (say ₹5 lakh) on the condition that the tie-up arrangements are between producers and processing units without any intermediaries.
 - Fifth, for better monitoring of branches by banks and easier implementation of KCC, there should be uniformity in Scale Of Finance (SoF) for both crops and allied activities.
 - Sixth, the corpus of rural infrastructure development fund should be enhanced. State government should be sensitised to allocate a larger portion of their borrowings from RIDF for rural infrastructure development in the state.
 - Seventh, GoI should push State Governments to complete the digitisation process and updation of land records in a time bound manner with accessibility to banks.
 - Eight, aggressive efforts are needed to improve institutional credit delivery through technology driven solutions to reduce the extent of financial exclusion of agricultural households. Successful models such as Mobile warehouses/cold storages and mobile-based apps providing farm machineries on rental basis can be scaled up across the country.

4. SANITATION: SWACHH BHARAT MISSION (SBM)

Constitution – In the Directive Principles for State Policy, Article 47 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 environment as an endeavour of the state.

History of Programs-

- Only when the UN declared 1980s as International Drinking Water and Sanitation Decade, 6th five-year plan (1980–85) gave some prominence to rural sanitation.
- In 1986, India's first rural sanitation programme, Central Rural Sanitation Programme (CRSP) was launched. However, it focused simply on construction of pour-flush toilets to address subsidies ignoring behavioural change and promotion of quality usage.
- In 1999, Total Sanitation Campaign (TSC) was launched and in 2008 Nirmal Bharat Abhiyan was launched. However, due to poor capacity building and lack of focus on behaviour change, these two programmes could not achieve the desired results.

Switch Bharat Mission: In 2014, inadequate sanitation caused economic loss equivalent to 6.4% of India's GDP. India accounted for over 55% of the global burden of open defecation. SBM was launched on 15th August, 2014. "Satyagraha se Swachhagrah" and "Swachhta hi seva" became the main slogans. On 2 October 2019, all Indian districts and States declared themselves as Open Defecations Free (ODF). This meant that India attained Sustainable Development Goal SDG 6.2 – sanitation for all – 11 years before the UN's SDG target of 31 December, 2030.

Swachh Bharat Mission 2.0: in February 2020, GoI approved Swachh Bharat Mission – Gramin (SBM-G) for Solid And Liquid Waste Management (SLWM) and on the sustainability of ODF status. The Department of Drinking Water and Sanitation is implementing this in a mission mode from 2020–21 to 2024–25. It will provide impetus to rural economy through 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, biogas plants, material recovery facilities, etc.

5. AGRI- TOURISM

Agri-tourism is regarded as the intersection of tourism and agriculture where working farm territory works in conjunction with a remunerative tourism unit, which is a segment of rural enterprise. The farms have a series of activities including production, post-production and processing activities, which are linked to tourism sector that attracts visiting tourists to such venture of activities. The term agri-tourism, is alternatively used as *agro tourism, farm tourism, agricultural tourism, agritainment*. It needs convergence of concepts of rural tourism, ecotourism, health tourism, and adventure tourism. It has been promoted across the world since decades. In India every tourism stands on three pillars: *farm recreation, farm stays and marketing of local farm produce*.

Agri-tourism can be categorised based on the type of farm setting, farm facility or experience and types of activities involved –

- Passive tourists contact – it restricts to accommodation, food and entertainment activities of the tourists.
- Indirect tourist contact – it adds other activities like exposure of tourists to farm demonstrations and basic farm education.

- Direct tourists contact – it includes all the above-mentioned activities as well as participation of the tourists and different farm operations like seeds sowing, planting, gardening, harvesting the produce, milking a cow, etc.

Importance

- From the farmers perspective, it doesn't require large holding. From the tourists perspective, it is less expensive w.r.t. travel, accommodation food and entertainment.
- Agri-tourism has a potential to reduce the uncertainty of farming or agri- entrepreneurship/agribusiness by generating additional income and creating jobs opportunities to the farm families. Agri-tourism can provide additional income in several forms –
 - direct marketing in farmers market where tourists can purchase farm products
 - picking up products, where tourists harvest produce by themselves
 - local food, where tourists prefer to have local flavour for meals
 - participation of tourists in different form activities and entertainment activities like animal rides, birdwatching, etc.
 - Experiencing rural life through local tours at different rural settings.
- It creates income and employment for localites indirectly as tourists need other amenities and products also. New consumer market niche can be established with higher awareness of local agricultural products.
- It also helps in preserving local traditions, art and culture. Tourists visiting firms tend to purchase the local handicrafts and souvenirs. It also helps in empowerment of rural women, diversifies and improves rural economy.
- Agri-tourism facilitates upgradation and revitalisation of community facilities, maintenance of rural landscapes and natural environments for tourists and local people.
- To preserve agricultural lands, and promote and form entrepreneurial activities/business enterprises, agri-tourism provides educational opportunities as well.
- It also reduces migration from rural to urban areas and attracts as well as retains the youth in agriculture.

Progress in India

- Rural tourism was initiated during 10th five year plan. Rajasthan, Kerala and Maharashtra are states which have been progressive in implementing agri-tourism.
- Agri-Tourism Development Corporation (ATDC) was established in 2004. Initially, it launched agri-tourism as a pilot project in Palshimwadi in Baramati Tehsil of Pune in 2005. The main activities include opening agri-tourism centres, encouraging more farmers to take up agri-tourism, and conducting training and research programmes.
- Under Maharashtra State Agri-tourism Vistar Yojana, ATDC launched training and skills development programme in 2007 which aimed to conserve the values environment, traditions, culture, customs, art and handicrafts. “*Mahabhraman*” scheme of Maharashtra Tourism Development Corporation is another step to promote Agri-tourism.
- The homestays amidst the wheat fields and scenic mountain views with participatory activities in Uttarakhand , the *Montana homestay and Annual Flower Festival of Sikkim, the Spice Garden Tours* in Kerala and Tamil Nadu are attraction of the tourists. Andhra Pradesh Tourism Development Corporation (APTDC) has been

promoting agri-tourism in terms of integrated horticulture farmers, dairy, fishing, vegetable poly-houses and farm stays of the tourists at guesthouses to enjoy natural environment and rural life.

- The promotion of brand “**Incredible India**” and enhanced budget allocation of Rs.50 lakhs per village for Village tourism has happened in the 10th five year plan.

Challenges

- Agri-tourism needs continuous effort in different stages – land development (knowledge Centre), developing accommodations and other facilities (Farm stay), developing enterprise (processing, value addition and marketing farm produces) and other required infrastructure development. This needs supportive government policies.
- Lack of farmers knowledge, lack of training opportunities to learn about agri-tourism is another challenge. Identification of potential farmers and entrepreneurs who can implement every tourism projects requires skilled advisory services. This needs education and capacity building. The School Of Agribusiness and Rural Management of Dr Rajendra Prasad Central Agricultural University, Pusa, BIHAR has decided to start postgraduate diploma program on agri-tourism from 2021 which is a commendable step.
- Establishing and managing agri-tourism enterprise is a challenging task in terms of planning and management. Formation of farmers cooperatives can be helpful in this regard. Farmers have to be given advisories to make them understand the importance and create desire to diversify their agricultural business into agri-tourism to provide value-added products and services that meet the need of tourists. Quality and complexity of services as well as cooperation amongst stakeholders are challenges to implementation of agri-tourism.
- Agri-tourism network involves farming, medical facilities, transportation, safety aspects, media and communication, tourism agencies, government and hospitality industry. Development of strategic partnerships, setting up location specific successful agri-tourism models and supportive government policies can help in this regard.

6. AGRI – STARTUPS AND ENTERPRISES

Startup India – This Gol initiative was announced on 15 August, 2015. It focuses on three areas: Simplification and Handholding, Funding Support and Incentives, and Industry Academia Partnership and Incubation. The Department for Promotion of Industry and Internal Trade (DPI&IT) is supporting start-ups for registration, land permissions, foreign investment proposals, and environmental clearances.

Startup India Portal – www.startupindia.gov.in – A portal with details of all startups.

Rashtriya Krishi Vikas Yojana – Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (RKVY – RAFTAAR) –

- It was launched by MA&FW in 2018 under the component called “Innovation and Agri-Entrepreneurship Development” for providing financial support and achieving the incubation ecosystem. It aims to encourage start-ups in agriculture and to enhance income of farmers by providing them with new opportunities.
- Under the scheme, 20 RKVY – RAFTAAR Agribusiness Incubation Centres were established and were entrusted with 5 knowledge partners – National Institute Of Agricultural Extension Management Hyderabad, National Institute Of Agricultural Marketing (NIAM) Jaipur, Indian Agricultural Research Institute (IARI) New

Delhi, University of Agricultural Sciences Dharwad, and Assam Agricultural University at Jorhat. These Knowledge partners are also the Centre of Excellence in Agribusiness Incubation.

- The program comprised of two stages of growth –
 - **Ideation stage:** Agripreneurship orientation programme is meant for entrepreneurs at the ideation stage. They are supported by two months of training, stipend of Rs.10,000 per month, internship, mentoring support to convert an idea into prototypes and grant-in-aid up to Rs.5,00,00 per start-up.
 - **Scale up stage:** Startup Agribusiness Incubation Program where two months of training, with business support services and grant-in-aid up to Rs.25,00,00 is provided along with handholding support for one year, until utilisation of grant-in-aid amount.
- The funded start-ups work in areas like Agro processing, value addition, AI, precision farming, Blockchain technology, etc.

Department of Science and Technology (DST): Science Technology and Entrepreneurship Park were already operating in India supporting the aspiring entrepreneurs. The National Science and Technology Entrepreneurship Development Board (NSTEDB) established by GoI in 1982 under the aegis of DST is an institutional mechanism to help promote knowledge driven and technology intensive enterprises. The board has representations from social economic and scientific ministries, aims to convert “job seekers” into “job generators” through science and technology interventions.

Atal Innovation Mission (AIM): An initiative of NITI Aayog, it aims to create and promote a culture of innovation and entrepreneurship across the country. The objective of AIM is to develop new programmes and policies for fostering innovation in different sectors of economy, provide platforms and collaboration opportunities for different stakeholders and create an umbrella structure to oversee the entire innovation and entrepreneurship ecosystem.

Department of Biotechnology (DBT): Biotechnology Industry Research Assistance Council (BIRAC), which is a not-for-profit Public Sector Enterprise, has been set up by DBT, GoI as an interface agency to strengthen and empower the emerging Biotech enterprise to undertake strategic research and innovation, addressing nationally relevant product development needs. Financial assistance up to Rs.50 lakhs is available under BIRAC BIG grant.

Ministry of Micro, Small and Medium Enterprises – ASPIRE: A Scheme for Promotion of innovation, Rural Industry and Entrepreneurship (ASPIRE) is curated by Ministry of MSME, GoI. Under the scheme, Livelihood business Incubator and Technology Business Incubators can be established and the start-ups can get a funding of Rs.4 lakh at ideation stage and Rs.20 lakh at scaleup stage.

Pradhan Mantri Mudra Yojana (PMMY): Micro Units Development and Refinance Agency Bank or Mudra Banks provide loans at low rates to Micro-Finance Institutions and Non-Banking Financial Institutions, which in turn provide low interest loans to start-ups and MSMEs. There are three categories of startups which can avail loans under Mudra loan :

- Shishu – for new businesses, loans up to Rs.50,000 can be availed.
- Kishore – for mid aged business, loans up to Rs.5 lakhs can be availed.
- Tarun – for an existing, experienced business loans up to Rs.10 lakhs can be availed.

Agri-Clinics and Agri Business Centres (ACABC), MA&FW: This initiative is being implemented by the National Institute of Agricultural Extension Management and NABARD, to take better methods of farming to every farmer across the country. It aims to provide self-employment opportunity to the agricultural graduates through entrepreneurship development training and appropriate financial subsidy support to establish agri-enterprises

and consultancy services to support farmers and also to implement public extension systems for overall agricultural development.

Initiatives of Indian Council of Agricultural Research (ICAR) :

- **Intellectual Property and Technology Management (IP& TM)** : launched in 2008, under the scheme Institute Technology Management Unit (ITMU) were established across all institutes in ICAR. 5 Zonal Technology Management Units (ZTMU) were constituted to oversee the activities of ITMU in the respective zone. The overall supervision was by IP& TM unit at ICAR headquarter. It was ably guided by Agriculture Technology Management Committee (ATMC) comprising of recognised experts and top management of ICAR.
- **Business Planning and Development (BPD)**: World Bank funding under National Agricultural Innovation Project led to establishment of BPD units at universities of ICAR.
- AgriBusiness Incubators have also been established by ICAR.
- Agri-Entrepreneur Growth Foundation (AEGF) – Syngenta foundation India and Tata Trusts jointly established AEGF in 2019. AEGF adopts a decentralised approach towards empowering rural youth and training them to become agri-entrepreneurs (AEs) in rural areas. The aim is to develop 1 lakh AEs in the coming five years to achieve the goal of serving 20 million small-holders.

State Government Initiatives:

- Kerala has initiated a government startup nodal agency called Kerala Startup Mission (KSUM). KSUM supports startup ecosystem by different components such as infrastructure, human capital development, funding, governance, PPP, global collaborations and scaling existing and establish a new start-up ventures from Start up – Boot up – Scale up model for moving fast from ideas to IPO.
- Telangana has launched the largest incubation centre in India as “T- hub”.
- Andhra Pradesh has started technological R&D Park. It has also created a fund called “Initial Innovation Fund” of Rs.100 crores for entrepreneurs.
- The Government of Madhya Pradesh has collaborated with SIDBI to create a fund of Rs.200 crores.
- Rajasthan has launched a “Startup-Oasis” programme.

MANAGE Centre for Innovation and Agripreneurship (MANAGE-CIA):

It is the Centre for Excellence (COE) in Agribusiness Incubation and Knowledge Partner for strengthening, handholding and demonstrating best practises to the RKVY-RAFTAAR Agribusiness Incubators (R-ABIs) and also implementing startup Agribusiness Incubation and Agripreneurship Orientation Programmes of RKVY-RAFTAAR. MANAGE-CIA runs a regular incubation programme to facilitate early-stage agri-startups to scale up their business. Any aspiring entrepreneur can avail its membership free of cost.

- **Krishi Vikas – Search for Agri-Innovations**: A flagship program of MANAGE-CIA wherein grassroot level innovations across the country are identified and facilitated.
- **Impulse – An Agribusiness Mentoring Platform**: This initiative facilitates in connecting aspiring entrepreneurs with mentors and addresses the crucial need of expert guidance.
- **Aqua Clinics & Aquapreneurship Development Programme (AC&ADP)**: Since 2018, 28 day free residential training programme supported by the National Fisheries Development Board (NFDB), Hyderabad, is being implemented in collaboration with fisheries universities and institutions across India by MANAGE-CIA.

- **Aqua One Centres (ABC):** They provide aquaculture support service to fish farmers, disseminate newer technologies and innovations, and facilitate their wider adoptions. These centres are established with financial support from NFDB.

Scaling Up Start-Ups: Methods Of Funding

- **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.
- **Business Plan/Pitching Events:** This is prize money/grant/financial benefits provided by institutes and organisations that conduct business plan competitions and challenges.
- **Incubators:** Incubators are organisations set up with the specific goal of assisting entrepreneurs and building and launching the start-ups. They offer a lot of value-added services – office space, utilities, admin and legal assistance, etc. – and often also make grants/that/equity investments.
- **Government Loan Schemes:** A few loan schemes to provide collateral to aspiring entrepreneurs and help them gain access to low-cost capital such as CGTMSM, MUDRA, Stand-up India, etc. have been started.
- **Angel Investors:** Individuals who invest their money into high potential start-ups in return for equity.
- **Crowd Funding:** It refers to raising money from many people contributing actively small amount, typically done via online crowdfunding platforms.
- **Venture Capital Funds:** VC funds are professionally managed investment funds that invest exclusively in high-growth start-ups. Each VC fund has its own investment thesis – preferred sectors, stage of start-up, and funding amount – which should align with start-ups. VCs take startup equity in return for their investments and actively engage in mentorship of their investee start-ups. It is recommended to approve these funds only after the startup has generated significant market traction.
- **Banks/NBFCs:** These are formal channels to finance interest payment obligations. This is specially applicable for working capital.
- **Venture Debt Funds :** These are private investment funds that invest money in start-ups primarily working in the form of debt. These funds typically invest along with an angel or VC.
- **TReDs:** RBI introduced this concept in 2014 to decrease the financing concerns faced by MSMEs in India. It is an institutional mechanism for financing trade receivables on a secure digital platform. Trade Receivable Exchanges such as M1xchange, standardise the process of MSMEs via invoice discounting. TReDs address the gaps in MSME industry as enterprises face challenges in getting their payments on time, thus creating working capital discrepancies.
- **Private Equity/Investment Firms:** They generally do not fund start-ups. However lately there has been some changes for start-ups maintaining a consistent growth record.
- **Initial Public Offering :** It refers to the event where start-ups list on stock market for the first time. Being an elaborate statutory formal process, it is generally undertaken by start-ups with an impressive track record of profits. One of the benefits of an IPO is that public listing at times can increase the credibility of the start-ups and be a good exit opportunity for stakeholders. Any angel investor, VC or PE fund can buyout investors of a previous round to get their equity share as well.