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1. AGRO-BASED INDUSTRIES IN INDIA: AN OVERVIEW

- **India's 54% population is still engaged in agriculture and allied activities.** Indian farmers are largely unorganized. They rely on external agencies for disposal of their marketable surplus.
- Lack of capital asset endowments in rural areas compels them to sell their produce at throwaway prices to the middleman agents.
- Low income from the primary farm produce and lack of investment in the processing and agri-value chain has caused rapid reduction in farm profits and the farm occupation has now under severe pressure.

Agro-based Industry – Definition and Types:

- Agro-industry covers a variety of industrial, processing and manufacturing activities based on agricultural raw materials and also those activities and services that come back to agriculture as inputs. Thus, agro-industry encompasses not only the activities that utilize raw materials sourced from agriculture, but also those that provide inputs for modern agronomic practices.

Types:

1. **Input supply industries or agro-industries** – the agencies supporting agriculture by way of designing and manufacturing inputs for production and productivity growth of the primary sector are termed as agro industries.
2. **Processing or agro-based industries** – it consists of manufacturing/processing of food and beverages, textile, footwear and apparel, leather, rubber, paper and wood and tobacco products.

Why promotion of Agro-processing is essential?

- India has the world's 10th largest arable land, 20 agro-climatic regions and 15 major climates. Besides, harvest and post-harvest losses for agriculture commodities are very high.
- **To reduce the extent of losses, promoting and adopting modern agro-processing technology** and setting up or more numbers of agro-industries in rural areas are the need of the hour.
- Rural and agro-based industries help create employment opportunity at production, distribution, manufacturing and marketing stages.
- There lies a great potential to make agro-based industries more visible and remunerative by identifying and resolving impending issues in a time bound manner.

Issues and types of problems face by Agro-based Industries in India:

Issue	Types of problems
Financing Agro-based Units	<p>Under financing/inadequate of bank finance</p> <p>Inappropriate project appraisal</p> <p>Delay in getting bank finance</p> <p>Cost overrun due to high interest rates and project completion delay</p>
Industrial policy, Research and Development	<p>Lack of implementation of industrial policy</p> <p>Stringent regulatory provision, environment, tax, labour policy</p> <p>Lack of industrial research and development</p> <p>Non-availability of right consultancy</p> <p>Lack of accredited research laboratory for quality control</p>
Infrastructure	<p>Lack of warehouse, cold-chain facilities</p> <p>Expensive logistic support</p> <p>Location disadvantages</p> <p>Wastage management</p> <p>Distance from warehouse, cold chain facilities</p>
Marketing	<p>Lack of national/international market access with inappropriate market research</p> <p>Competition with multi-national companies</p> <p>Dependence of government subsidy and other support</p> <p>Inconsistency quality of processed products</p> <p>Weak and non-existent market development</p>
Production	<p>Backward forward linkage issues</p> <p>Inappropriate and obsolete processing and ancillary equipment</p> <p>Underutilization of capacity</p> <p>Shortage or inconsistent raw materials supply</p> <p>Seasonality of crops</p>
Human Resources	<p>Labour shortages in rural areas</p> <p>Unskilled labour</p> <p>Low investment in skill-set up gradation</p>

Conclusion:

- Agri-based Industries conform to the notion of competitive advantage both within and outside the country. They can play a role of a safety valve to absorb surplus rural labour and can address the problem of large scale unemployment/disguised employment in rural areas.



2. AGRO-INDUSTRIES TO INCREASE FARMER'S INCOME

- The NSSO survey on employment estimated about 49% worker's major livelihood support coming from agriculture. Added to that 70% of our population lives in rural areas (census 2011) whose income augmentation should be the number one priority.
- The added feature **in Indian Agriculture is the marketed surplus of the commodities has been increasing**, demanding more post-harvest management and processing to provide adequate shelf life to the produce for negotiating the market.

Income and Employment Opportunities:

- One of the critical areas that can enhance the income of the rural households is to provide higher opportunity in agro-based food and non-food activities. The Annual Industrial Survey shows that agro-industries contribute about 36% of the industrial employment.
- Additionally, the substantial employment is generated in production agriculture and the supply chain. Agro-food processing industries have the potential to generate directly significant employment in production activities and also indirect employment through its forward and backward linkages.
- This employment will be in rural areas where these industries have to be located near the source of raw materials, especially perishable agricultural products.
- These industries would help in reducing post-harvest losses and wastes as well as in using by-products more efficiently. This can increase rural income by fetching better prices to producers and also consumer welfare by increasing the availability of agricultural consumer goods.

Major Constraint for the growth of this Industry:

- Investment in infrastructure comprising roads, electricity, and communication would reduce agribusiness costs and induce the private sector to invest in agro-processing, cold storage facilities, refrigerated transportation and retail chains.
- Institutional arrangements such as contract farming, producers organizations and cooperatives that provide farmers easy access to markets, distribute price risks, and reduce marketing and transaction costs can go a long way in pushing high value agriculture.

Food Processing Industry:

- FPI is one of the **Major Employment Intensive Segments contributing 11.5% of Employment Generated**. The food processing industries covers a wide range of activities utilizing farm, animal and forestry based products as raw materials.
- There are traditional agro-based industries such as rice and flourmills, sugar, khandsari and gur, manufacture of edible oils and the processing of plantation crops like tea, coffee and cashew nuts.

- There are also some relatively modern food processing industries such as dairy products, confectionery, marine products, horticultural and vegetable products as well as meat and poultry products.
- Though processing necessarily changes the basic characteristics of the raw produce, but policies relating to food processing activities apply differently in the case of different activities depending on the purpose of processing.
 - ✓ Some processing refers to necessary processing that must be done before consumption. Cereals sector belongs to this category of processing.
 - ✓ The next category of agro-based food processing is **concerned with processing and packaging in order to provide easy transportability and marketability of some food products**. The processing of milk and milk products falls in this category. This would increase the income of farmers, especially small farmers and landless agricultural labourers in the rural areas. It would also promote consumer welfare.
 - ✓ The **third category relates to processing activities which would help in extending the storage life of seasonal food products**. Fruits and vegetables belong to this category. Processing of fruits and vegetables would help in reducing post-harvest losses and would also provide stable income to the growers by eliminating the seasonal fluctuations in income.

Food processing policy of India:

- The ministry of Food Processing Industries brought out **Food Processing Policy of India in 2018**. This policy included the best practices across states and the world.
- Several initiatives have also been announced for ushering into zero post-harvest wastage by creating a **national food grid and national cold chain grid**. Increasing focus is also being given to supply chain related infrastructure such as cold chains, abattoirs and food parks. The other such as allowing **100 per cent FDI in multi-brand retail** will have a long lasting impact on the employment generation.

Conclusion:

- The agro-industries are getting even more important in view of very impressive growth in high value commodities alongside rising income in recent years.
- The cold storage facilities need to be developed in the major production catchments so that the farmer has the option to store the produce and may hold it back when the market is saturated and sell it when shortages occur.
- Turning agro and food-processing industry into a major export industry can also create vast employment opportunities for workers since it is a labour-intensive industry.

3. PROMOTING AGRO-INDUSTRIES

- Agro-industry consists of the processing, preservation and preparation of agricultural production for intermediate and final consumption. It performs a number of crucial functions that support development and poverty alleviation.
- Annual survey of Industries shows that 46 per cent of all factories in India are agro industrial and they contribute almost 22 per cent of the manufacturing value added and nearly 43 per cent of manufacturing industry employment.
- In addition, strong synergies exist between agro-industry, agriculture and poverty alleviation. Agro-industry provides capital and services to farmers (e.g. seeds and equipment, training, production and market information), promotes entrepreneurship, raises demand for agricultural products and connects farmers with markets through the handling, processing, marketing and distribution of agricultural products.
- The requirement of today is a fresh and comprehensive approach, integrating the development of villages with agro-industries, with larger involvement of farmers in processing their own produce. Besides the gainful employment to the rural people has to be provided in their own locale.
- The potential for agro-industrial development in India is largely linked to the relative abundance of agricultural raw materials and availability of low-cost labour, making them particularly suitable for Indian circumstances.

Government policy for Agro-Based Industries:

- The Ministry of Food Processing Industries has been implementing several schemes for the development of food processing in India is:
 - ✓ Scheme for infrastructure development
 - ✓ Scheme for Technology Up-gradation/modernisation of food processing industries
 - ✓ Scheme for Quality Assurance, Codex Standards and Research and Development
 - ✓ Scheme for Human Resource Development
 - ✓ Scheme for Strengthening of Nodal Agencies
 - ✓ Scheme for Backward and Forward Integration and other promotional activities.

Latest Developments:

1. Scheme of Fund for Regeneration of Traditional Industries (SFURTI):

- It focussed on reviving traditional industries with a cluster based approach for development of khadi, village industries and coir clusters by providing them with improved equipment, common facilities centres, business development services, training, capacity building and design and marketing support, etc.

2. A Scheme for Promoting Innovation, Rural Industry and Entrepreneurship (ASPIRE):

- It aims to **create new jobs and reduce unemployment, promote entrepreneurship culture in India**, boost grassroots economic development at the district level, facilitate innovative business solutions for unmet social needs, and promote innovation to further strengthen the competitiveness of the MSME sector.
- This is done by implementing incubation and commercialisation of business ideas through technical/research institutes, including those in the field of agro-based industry.

3. Credit Linked Capital Subsidy Scheme (CLCSS):

- Its aim is to provide 15 per cent upfront capital subsidy (limited to a maximum of Rs.15 Lakh) with the objective to upgrade plant and machinery of small enterprises with state-of-the-art technology and also for new MSMEs.

4. Prime Minister's Employment Generation Programme (PMEGP):

- It started in 2008 as a credit-linked subsidy programme **with an aim to generate self-employment opportunities** through establishment of micro-enterprises in various sectors, including agro-based industries.
- It is **implemented by Khadi & Village Industries Commission (KVIC)**.

5. Pradhan Mantri Kisan SAMPADA Yojana:

- (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters)



6. Pradhan Mantri MUDRA Yojana (PMMY):

- It was launched on 2015 for providing loans up to Rs. 10 lakh to the non-corporate, non-farm Small/Micro Enterprises.

7. Gramin Bhandaran Yojana:

- Its aims to meet the requirements of farmers for storing farm produce, processed farm produce and agricultural inputs.
- The scheme's objective is to prevent distress sale immediately after harvest by providing the facility of pledge financing and marketing credit by strengthening agricultural marketing infrastructure in the country.
- It promotes grading, standardization and quality control of agricultural produce to improve their marketability.

Challenges to set up Agro-Based Industry:

- Land, labour and capital are the basic requirements for setting of up an enterprise. But India ranks at the bottom in all these three parameters.
- **Labour laws in India have remained highly restrictive and inflexible.** Earlier, a factory with 100 employees was considered as a registered entity. Such entity could not remove their employee even when there was no work. So it is high time to push for more agri-reforms aggressively.
- Growth of agro-based industry **hampered by inadequate infrastructure** such as stores, power and water services, communications, limited government support, poor location and lack of appropriate technologies.
- The **lack of post-harvest facilities** for drying, sorting, grading and packing at point of production adds to the woes and results in a loss of raw materials.

Road Ahead:

- With a view to reduce waste and cut back on transport and handling costs, primary processing of all foods and processing of perishables foods needs to be undertaken in or adjacent to the point of production.
- **Thrust areas for research and development** need to be identified and met with.
- **More financial incentives and support need to be provided** to promote the modernization of agro-processing industry and for establish new such industries in production catchments.
- Arrangements to **supply market information to the farmer and agro-processor** need to be put in place through the sincere and close involvement of all stakeholders.

4. PERSPECTIVES OF DAIRY INDUSTRY IN INDIA

- Indian dairy sector, that includes milk production, collection, processing, distribution and marketing, plays a seminal role in rural economy, second only to agriculture. Dairying in India is more than a business activity, it has broader social and economic dimensions.
- Dairying provides a remunerative outlet for family labour, so farmer's families are encouraged to take up dairying as an occupation subsidiary to agriculture. Other than income generation and livelihood security, dairying also ensures nutritional security for the family addressing issues like malnutrition.

The Scenario of Dairy Sector:

- **India is the world's largest producer and consumer of milk** accounting for nearly 19% of the world milk production.
- **The per capita availability of milk is 375 grams per day** at all-India level with widely varies between the states.
- Indian dairy sector is struggling with low productivity of animals but the vast diverse population of cattle and buffaloes offers great prospects for increasing the milk production.

Key Challenges faced by Dairy Sector in India:

- ✓ Low productivity of India bovines
- ✓ Imbalanced feeding to animals
- ✓ Limited access to milk producers to organized sector
- ✓ Age old infrastructure operating on obsolete technology
- ✓ Lack of organized credit system
- ✓ Lack of manufacturing facilities for value added products
- ✓ Lack of efficient chilling infrastructure at village level
- ✓ Lack of penetration in smaller cities/towns in terms of milk marketing
- ✓ Lack of efficient cold chain distribution network.

Government Initiatives to address the challenges in Dairy Sector:

1. **National Action Plan for Dairy Development for 2022** - The Plan Envisions Increasing Milk Production to 255 MMT by 2022 and 300 by 2024.
2. **National Artificial Insemination Program** - It aims to Genetic Improvement of breeds and maintenance of Good Health of Bovine Population.
3. **Dairy Entrepreneurship Development Scheme:**
 - ✓ Its objective is to promote entrepreneurship by generating opportunities for self-employment in Dairy Sector.

- ✓ NABARD is the nodal agency to implement this scheme with financial support from Union Government.
- ✓ NABARD provides financial assistance to commercially feasible and bankable dairy projects for a wider range of dairy associated activities.
- 4. A corpus fund of Rs. 300 crore has been kept in perpetuity with National Dairy Development Board to provide soft loans as working capital to dairy federations.
- 5. **Formation of Farmer Producer Companies** in dairy sector has mobilized farmers to enhance their capacity as producers and marketing professionals. Producer companies help in creating sustainable rural employment through dairying for small and marginal farmers and landless labourers.
- 6. **Dairy Processing and Infrastructure Development Fund, DIDF:**
 - ✓ Its objective is to boost dairy processing and infrastructure with total outlay of Rs.10000 crore during the period from 2017-18 to 2028-29.
 - ✓ It is implemented by National Dairy Development Board and National Dairy Development Corporation.
 - ✓ This fund is helping build an efficient milk procurement system by setting up chilling infrastructure, modernization of processing infrastructure and adding manufacturing facilities for value added products for the milk unions and milk producer companies.

Way Forward:

- The three drivers of demand, population growth, urbanization and income growth are very strongly in operation due to which the demand of milk and milk products is rising steadily.
- As far as the availability of modern dairy equipment's is considered, India's recent progress is remarkable, but we still depend on imports for advanced machinery. Equipment's for packaging of butter, cheese, paneer and other traditional products need attention and necessary action.
- Women engagement in dairy activities should be strengthened at co-operative society's level. This will enhance their Economic and Financial Empowerment.
- At present, India's share in global dairy trade is just one per cent, which needs to be enhanced by technology infusion and quality management.

5. JUTE INDUSTRY: SCENARIO AND OPPORTUNITIES

Present Scenario of Jute Industry:

- Among natural fibres, Jute is next to cotton as per availability is concerned. It has many applications such as packaging material in different sectors, agricultural and geotextile application and carpet backing.
- In India, Jute cultivation is confined to West Bengal, Eastern Bihar, Assam, Orissa, Tripura and Andhra Pradesh.

Problems Associated in Jute Industry:

- ✓ Jute industry suffered a serious setback, after Partition about 80% of the Jute growing areas went to East Pakistan (Bangladesh), while nearly 90% jute mills remained in India.
- ✓ Most of the jute industries till today are being producing the age old products like jute sacking and hessian as packaging material and not involved in diversified product development.
- ✓ The jute industry is also **using the age-old machinery to produce jute** yarns and fabrics.
- ✓ **No modernization** has been made in machinery development and automation. This requires more manpower thereby increasing the cost of production.
- ✓ There is also a **stiff competition with the synthetic industry** for similar packing material, as the synthetic material is much cheaper in nature.
- ✓ Apart from these, this **industry suffers lot from different political interference, labour problem, and shortage of jute fibre supply** due to low rainfall among other issues leading to challenge the sustainability of the jute industry.

Government Initiatives:

- According to the Jute Packaging Norms and Legal Protection to Jute Cultivators the Parliament enacted the **Jute Packaging Mandatory (JPM) Act, 1987** with the objective to protect the Jute industry.
- As per this act, the food grain and sugar produced is reserved and mandatorily packed in jute bags manufactured every year. The industry also earns a business of around Rs. 10000 crore by selling its entire produce to Food Corporation of India, sugar mills, co-operatives and in the Indian market apart from the export.

Sustainability and Opportunities in Jute Industry:

- ✓ Today with the advent of science, **lot of diversified products has been developed** from jute and jute-based material, which has more cost-benefit ratio.
- ✓ Jute has been defined **as eco-friendly natural fibre with utmost versatility** ranging from low value geotextiles to high value carpets, decorative, apparels, composites, upholstery furnishings, etc.

- ✓ Advantages of jute include good insulating and antistatic properties, as well as having low thermal conductivity and moderate moisture regain.
- ✓ Jute has the ability to blend with other fibres, both synthetic and natural.
- ✓ While relatively cheap synthetic materials in many uses are replacing jute, but jute's biodegradable nature is suitable for the storage of food materials, where synthetics would be unsuitable.

Conclusion:

- Application of jute area must be increased. India needs to work on quality by adopting new technologies.
- Government must make efforts in R&D to strengthen the jute industry and implement newer technologies, diversified products and improved machinery through intensive modernization.



6. BAMBOO INDUSTRY: CRAFTING THE LIVELIHOOD OF RURAL PEOPLE

- Bamboo is a versatile crop and India has one of the richest bamboo resources in the world, second only to China in bamboo production. Despite second largest grower, **India's share in global bamboo trade and commerce is only 4%**

Why Bamboo is Important?

- Bamboo is an integral part of our life and culture, as it is used in religious ceremonies, art and music.
- For **Tribal and forest dwellers 'bamboo for living, living with bamboo'** is still norm. This offers a starting point in increasing employment, income generation and improving nutritional statues of rural poor.
- Since bamboo can **provide the basis for an expanding small and medium enterprise sector**, it offers effective mechanisms for rural poverty alleviation and livelihood securities.
- A **Bamboo Tree Matures in 4 to 5 years** whereas hardwood tree almost take 60 years to mature.
- Bamboo can tolerate both heavy and low rainfall. **Bamboo releases 35% more oxygen than other plants and absorbs 20% more carbon dioxide** from the environment.
- Bamboo has great potential as construction and structural material. Pulp and paper industry and bamboo craft sector are the two major users of bamboo resources.
- Bamboo is amenable to multiple uses and is therefore well suited to value addition activities

Problems and Scope of Bamboo Industry:

- Need to upgrade bamboo economy by according bamboo development a strategic role in rural economic development, poverty alleviation and bamboo based handicrafts and industrial development.
- The potential of bamboo as an economic resource remained largely untapped due to lack of appropriate policy, institutional framework covering plantations, technology up gradation, product and market level.
- There is vast scope for expanding bamboo in the areas outside forest because:
 - Its management is easier in these lands than in natural forest
 - Due to close to user agencies, economic harvesting is possible.
- Land degradation is a major problem confronting India. With its unique ability to stitch and repair damaged soils, bamboo is ideal for rehabilitating degraded soil.

Government Initiatives:

1. National Bamboo Mission:

- ✓ It was started as a centrally Sponsored Scheme in 2006-07.

- ✓ Its objective is to realization of bamboo's considerable potential with focus on R&D, Plantation on forest and non-forest lands through Joint Forest Management Committees or Village Development Committee.
 - ✓ Ensuring supply of quality planting materials by establishing centralised and kisan nurseries, promotion of bamboo handicrafts, marketing, export and establishing bamboo wholesale & retail market.
2. **The Indian Forest Act, 1927 defines bamboo as a tree** – a contradiction in the law that has deterred the growth of bamboo plantations particularly in non-forest areas. Bamboo grown outside forests was subjected to regulatory rules of felling and transportation.
 3. To facilitate the benefit flow to the farmers, **bamboo stock outside forest areas has been excluded from the definition of tree by amending the Indian Forest Act, 1927 in 2017.**
 4. **Restructured National Bamboo Mission – 2018:**
 - ✓ It focuses on the development of complete value chain starting from planting material, plantation, and creation of facilities for collection, aggregation, processing marketing, micro, small and medium enterprises, skill development and brand building initiative in a cluster approach mode.

Way Forward:

- To arrest the pace of land degradation in the country, a national programme of intensive bamboo cultivation involving all stakeholders need to be undertaken.
- The national housing scheme should utilize bamboo as construction material.
- There is a big market in the agarbatti industry, so measures should be taken to utilize the bamboo for this industry.

7. TEXTILE AND CLOTHING INDUSTRY: CHALLENGES AND OPPORTUNITIES

- The Textiles and Clothing Sector contributing about **10% in industrial production**, about 12.5% to the export earnings and about 2% in GDP is a key manufacturing segment of the Indian Industry.
- The T&C Industry has potential to grow significantly and to contribute to the Government's ambitious target of achieving \$ 5 trillion economy by 2024-25.

Growth Potential of T&C Industry:

- The T&C industry is found to be playing a catalytic role in shifting surplus labour from agriculture sector to more productive industrial activities.
- Further, T&C industry, **Fundamentally Driven by cost comparative advantages**, continues to relocate towards more competitive manufacturing locations globally.
- For example, competition from low per capita income countries like Vietnam slowed down the growth rate of China's textile and clothing exports. Bangladesh's rising exports, which are also a low per capita income and low wage economy, garner significant share in world trade in clothing.
- Keeping In view of the low per capita income of India, the window for high growth of textile and clothing exports is open for next about 15-20 years.

Initiatives to Realize Growth Potential:

1. Technology Up-gradation Fund Scheme (TUF):

- ✓ A credit linked subsidy scheme was introduced in 1999.
- ✓ To catalyze capital investments for technology up-gradation and modernization of the textile industry.

2. Infrastructure and Logistics:

- ✓ The scheme for Integrated Textile Parks (SITP) was launched in 2005.
- ✓ Its objective is to neutralize the weakness of fragmentation in the various sub-sectors of textiles value chain, and the non-availability of quality infrastructure.

3. The Technology Mission of Cotton – 2012:

- ✓ It is achieved reduction in trash content in Indian cotton from 4-8% to 2-3%
- ✓ Cotton fibre production, productivity and quality need focussed attention.

Challenges:

- The major challenges faced by the textiles processing are availability of water, effluent treatment and disposal of the treated water and solid effluents. These concerns need to be factored and addressed for sustainable growth.

- The high growth potential of Technical Textiles remains to be tapped.
- Low FDI in T&C Sector
- Lack of commensurate growth in textile machinery sector in India

Way Forward:

- India needs to work with an approach of **holistic development of the complete textile value chain** acknowledging its integration with global value chain at each stage.
- **Global cost competitiveness is the key to attract textile and clothing manufacturing in India.** Some of the prominent reasons of high cost structure which inhibited growth need to be addressed on priority.
- Achieving 10-15% share in world textile and clothing trade and thereby channelizing rural sector through cotton connection and shifting of disguised unemployment workforce in agriculture and allied sectors towards more productive usages in industrial activities, should be the utmost priority.

