CHAPTER 1:

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1. INTRODUCTION

Agriculture forms the backbone of the Indian Economy. Agriculture occupies pivotal position in the economy. The contribution of agriculture is 17.8% in the GDP, 52.00% in employment and 12.20% in export, in the year 2007-08\(^1\). The agricultural sector acts as bulwark in maintaining food security and also supplies fodder to sustain the livestock. It stimulates industrial development and also boosts transport, banking and other services. In a nutshell, its position is an all-embracing one. It can be said that the very existence of economic activities of the entire people is bound with the state and the nature of this sector. Any change in the agricultural sector, positive or negative, has a multiplier effect on the entire economy. The all-pervading influence of agriculture underlines the fact that development of agriculture is an essential condition for the economic development of the country.

Though the notable progress has happened in agricultural sector in last six decades its present status is still backward\(^2\). It is suffering from many weaknesses like slow and uneven growth, unsatisfactory land reforms, inadequate capital, overcrowding, vast underemployment, inadequate irrigation, insufficient modernization, low productivity etc. Attempts to rejuvenate it were made so many times in so many different forms but without any spectacular success. The agriculture strategy, which goes by the name of green revolution, was hailed to have solved India’s agriculture problems, but this hope was only short lived. Despite ten five year plans and three annual plans India is still unable to solve its agricultural problems.

‘Industrialize or perish’ is the slogan of the day. Industrialization is considered as an indicator of economic development. Industrialization is an essential ingredient for rapid and self sustained development. It is believed that the solution to the economic maladies like poverty, unemployment etc., lies in rapid industrialization. As such industrialization assumes paramount importance in the developing country like India. The contribution of industry is 29.2% in the GDP in the year 2007-08\(^3\).

Agriculture and industry have traditionally been viewed as two separate sectors both in terms of their characteristics and their role in economic growth. Agriculture has been considered the hallmark of the first stage of development, while the degree of
industrialization has been taken as the most relevant indicator of a country’s progress along the development path. A proper strategy is to have close collaboration between industry and agriculture for rapid economic development. It helps industry and agriculture take benefit of their mutual existence. The problem is, not one of the choices between primary and secondary activities but rather one of ensuring the balanced expansion of all sectors of the country⁴.

Agriculture supplies raw material and stimulates the development of industries. A study conducted by the Federation of Indian Chamber of Commerce and Industry (FICCI) has revealed that, for every 10% rise in agricultural production, there is a direct increase of industrial production by 2.5% and indirect by 4.5%, altogether over 7%⁵. Industry supplies machinery to agriculture for its development. Industrial development and corresponding expansion of markets for agricultural products, leads to improved agricultural efficiency, increase in agricultural income and overall improvement in agriculture. Economic development implies an increasing diversion of labour from agriculture to non-agricultural sectors, i.e. industry and tertiary sectors⁶. This will increase agricultural productivity on the one hand and on the other new industrial units would be set up with the use of surplus labour. Thus development of these two sectors has a complementary character, growth of one being a precondition and a cause of the other⁷.

In developing economies like India, majority of population sill lives in rural areas and their main occupation is agriculture. Therefore, the thrust of economic development should be on rural development. As such, a programme of industrial development must give due consideration to the development of rural areas. It is further important to combine agriculture and industry in such a way that there is on one hand, development of rural economy and on the other hand, the village culture and the traditions are also preserved⁸. It requires that industries should be based on the resources locally available. In rural areas, resources mainly come from agriculture. As such, industries should be based on agriculture known as ‘Agro-Industries’. In a strategy aiming at diversification of rural economy, agro-industries are destined to play major role⁹. The agro-industry can provide true basis for rural and economic development of the developing country¹⁰.
A precise theoretical rationale for emphasizing the role of agro-processing industry during the process of development is provided by Hirschman’s linkage hypothesis which postulates that the best development path lies in selecting those activities where progress will induce further progress elsewhere. Thus, an activity that shows a high degree of interdependence, as measured by the proportion of output sold to or purchased from other industries, can provide a strong stimulus to economic growth. Agro-processing industry, with its strong forward and backward linkages, has manifold contribution to agricultural and economic development.

1.1. CONCEPT OF AGRO-PROCESSING INDUSTRY:

The industries related to agriculture are variously called as agri-business, agro-industries, agro-based industries, agro-allied industries, agro-processing industries etc. These terms connote different meanings to different writers, institutions and agencies. In fact the terms agro-processing industry, agro-industry and agro-based industry have been used interchangeably. Further, in the context of modern technological advances and diversification in the field of agro-related activities these concepts have undergone changes. The concepts of the industries related to agriculture are discussed below.

1.1.1. Agri-Business:

The term ‘Agri-Business’ was first used by J. Davis and R. Goldberg. Agri-Business is the sum total of all operations involved in the manufacture and distribution of farm supplies, production activities on the farm and the storage, processing and distribution of farm commodities and the items made from them.

The interrelated and coordinated food and fibre system is called agri-business and it encompasses the entire agricultural sector and that portion of the industrial sector which contains the sources of farm supplies or processors of farm products. Agri-Business encompasses all the participants involved in the production, processing and marketing of farm products.

Agri-business includes farm management and all the enterprises that buy from or sell to the farmers and encompasses agricultural inputs, agricultural outputs, agro-processing, services related to agriculture and other areas. Thus, agri-business is a wider term and includes practically all facets of agriculture and the businesses related to it.
1.1.2. Agro-Industry:

In India the term ‘Agro-Industry’ is used often too broadly. A long list of agro-industries was issued by Union Development Commissioner for small scale industries\textsuperscript{15}. All enterprises connected with the processing of agricultural produce and farm wastes have been brought under a single head in the list. Industries related to canning and processing of fruits and those providing cold storage facilities, industries producing chemicals needed in the processing operations of plant fibres, forest produce and some marine based ventures are categorized as agro-based industries. Besides, manufacture of farm implements of various types including power tillers, threshers, accessories of dairying and formation of pesticides have also been listed as agro-industries in this comprehensive list.

Earlier agro-industries referred to industries which survived in rural areas and which had either a direct or indirect link with the population in the rural areas called as ‘Village and Rural Industries’\textsuperscript{16}. They extended to include activities based on the processing of agricultural produce or catering to the needs of the agriculturists and as instrument of varying efficacy for the relief of rural population. They were, therefore, able to provide subsidiary and fuller employment to the weaker section of the society in the rural areas\textsuperscript{17}. A term ‘Agrindus’ is also used which describes the integration of agriculture and industry\textsuperscript{18}.

The definition given by the Planning Commission had the widest coverage. The Planning Commission, with a view to develop Agro-Industrial Corporation defined agro-industry in different manner\textsuperscript{19}. Its criteria to characterize agro-industry were - encourages greater input into agriculture, leads to better processing and conversion of agricultural commodities, ensures high return on processing of goods and increases agricultural production. Obviously, the Planning Commission has included under agro-industries not only those industries which are concerned with the processing of agricultural produce but also such industries which are involved in the production of farm inputs and farm implements\textsuperscript{20}.

The National Council of Applied Economic Research (NCAER) looked at agro-industry as more of an organic link between agriculture and industry. It defined agro-based Industries as those which use agricultural raw materials or manufacture products
that farmers need for agricultural production. Maharashtra Economic Development Council (MEDC) has used the term ‘agro-industries’ to describe the industries which are dependent, not only on agriculture and allied activities but also on the inputs in agriculture.

Making a distinction between agro-industries and agro-based industries, Reserve Bank of India observes: “The agencies supporting agriculture by way of designing and manufacturing of inputs generally termed as ‘agro-industries’ are by nature, somewhat different from those supported by agricultural products which are known as agro-based industries.” The concept of agro-industries is confined to those industries that are engaged in the processing of agricultural produce either for consumption or for the use of the industry and to those industries which produce inputs for agriculture such as fertilizers and farm implements. Agro-based industries only make use of agricultural produce and are supported by agriculture.

There are economists who have used the term ‘agro-based industries’ instead of ‘agro-industries’ in a view that it is difficult to give a precise definition of agro-industries, because in the ultimate analysis the whole economy depends on agricultural sector either directly or indirectly as agriculture is feeder to industries. Femine Commission in India has stated Agro-based industries are those, which are involved in supplying the farm with agricultural inputs besides handling the products of the farm. Agro-based industries are considered to be based and dependent on agriculture. Such dependence can be of two types: Industries using agricultural products as raw material and industries providing inputs to agriculture.

B.A. Iqbal defines agro-industries in a more comprehensive sense. He states that the development of agriculture on one hand and on the other, of the entire group of industries to cater to the needs of the masses in rural areas under a system of mutual and complementary input and output relations. Thus, they signify the proximity and affinity between agriculture and industry.

S. K. Gupta considers agro-industries as confined only those industries that are engaged in the processing of agricultural produce either for consumption or use of industry and those industries which produce inputs for agriculture.
M P. Kaushal\textsuperscript{30} has defined agro-industry in a more comprehensive sense as 1) industries directly based on the production of agricultural commodities including forestry, 2) industries based on agricultural wastes, 3) industries based on agricultural by-products, 4) water harvesting technology as water is one of the most important source of production and 5) small scale industrial structures supporting the purchase, manufacture and repair of agricultural implements.

Ajit Prasad Jain\textsuperscript{31} has defined agro-industry as one which carry out the processing of farm produce and which provides input for the development of agriculture. He holds that the development of agriculture in modern times is marked by the growth of agro-industries which on one hand provide machine and material needed for achieving higher agricultural yields and on the other process farm produce into finished and semi-finished goods.

‘Agro-Industry’ is a part of agri-business. Agro-industries make direct use of the agricultural produce as raw materials on the one hand and supply inputs to agriculture on the other. They are related to inputs and outputs of agriculture. Agro-industries are an organic link between agriculture and industry and emphasize interdependence between two sectors for their mutual growth and economic development.

\subsection*{1.1.3. Agro-Processing Industry:}

A common and traditional definition of ‘Agro-Processing Industry’ as given by Food and Agriculture Organisation\textsuperscript{32} (FAO) refers to the subset of manufacturing that processes raw materials and intermediate products derived from the agricultural sector. The agricultural sector includes agriculture, livestock, forestry and fisheries.

United Nations Industrial Development Organisation (UNIDO) defined agro-processing industry as those industries which use raw materials from agriculture as main material from which manufactured goods are produced on a commercial scale\textsuperscript{33}.

Austin\textsuperscript{34} defined agro-processing industry as an enterprise that processes agricultural raw materials including ground and tree crops as well as livestock.
U.K. Srivastava\textsuperscript{35} considered agro-processing industry as an enterprise that processes bio-mass i.e. agricultural raw materials, which include ground and tree crops as well as livestock and fisheries, to create edible or usable forms, improve storage and shelf life, create easily transportable forms, enhance nutrition value and extract chemicals for others. The degree of processing of various agricultural raw materials varies tremendously. In the transformation process agricultural raw material undergo primary, secondary and tertiary processing as well.

Chadha and Sahu\textsuperscript{36} have defined agro-processing industry as subset of manufacturing that processes raw materials and intermediate products obtained from agriculture and its associated sectors such as animal husbandry, forestry and fisheries.

Agro-Processing industries process materials of agricultural origin\textsuperscript{37}. Materials of agriculture origin may be of plant or animal origin. Similarly, processing may refer to primary processing only or it may include secondary and tertiary processing as well. Therefore, from its narrowest to its broadest definition, the coverage of 'agro-processing industries' ranges from primary processing of materials of plant origin to all kinds of processing of materials of plant and animal origin.

Agro-processing is defined as a set of techno-economic activities, applied to all the produces, originating from agricultural farm, livestock, aquacultural sources and forests for their conservation, handling and value addition to make them usable as food, feed, fiber, fuel or industrial raw materials \textsuperscript{38}. The agro-processing industry includes all operations from the stage of harvest till the material reaches the end users in the desired form, packaging, quantity, quality and price.

Thus ‘Agro-Processing Industry’ is a part of ‘Agro-Industry’. Agro-Processing Industry processes all materials and intermediate products originating from the agricultural sector and adds value to it on the commercial basis. The agricultural sector includes agricultural farm, livestock, fisheries and forestry. The processing may include primary, secondary and tertiary processing as well. The processing is done on raw material for conservation, handling and value addition to make them usable as food, feed, fiber, fuel or industrial raw materials.
1.2. SIGNIFICANCE OF AGRO-PROCESSING INDUSTRY:
Agro-processing industry, with its strong forward and backward linkages, has manifold contribution to agricultural and economic development. Thus agro-processing industry has a symbiotic links with agriculture, rural and economic development. The significance of the agro-processing industry can be gauged from its benefits to consumers, producers, agriculture and economy as a whole.

1.2.1. Benefits to Consumers:
The agro-processing industry leads to various benefits to consumers.

- **Value Addition leading to Change of Form:**
  Agro-Processing changes raw food and other farm products into edible, usable and palatable form. It develops food system that provides the nutrients critical for the well-being of the expanding population. The value added by the processing to the total value produced at the farm level varies from product to product. It is nearly 7% for rice and wheat, about 79% for cotton and 86% for tea. It is generally higher for commercial crops than the food crops.

- **Promotes Conservation and increases Life:**
  Agro-Processing makes it possible for consumers to store perishable and semi-perishable agricultural commodities which otherwise would be wasted and facilitates the use of the surplus produce of one season in another season or year. The examples are: drying, canning and pickling of fruits and vegetables, frozen foods, conversion of milk into butter, ghee, cheese and curing of meat with salting/smoking.

- **Reduces Cost:**
  Agro-Processing satisfies the consumers at a lower cost. If it is done by the consumer it is more costly than if it is done by the enterprise on large scale.

- **Saves Time and Efforts:**
  Agro-Processing saves the time of the consumers and relives them from the difficulties and botherations experienced in processing.
1.2.2. Benefits to Producers-Entrepreneurs:
The agro-processing industry leads to various benefits to producers-entrepreneurs.

- **Increases Sales and Profits:**
The demand for processed products has increased exponentially worldwide and in India. With rapid urbanization coupled with rising income and changing lifestyle the demand for processed products is on rise. The value of commerce in processed foods exceeds that of basic agricultural commodities by several magnitudes\(^\text{41}\). Agro-Processing thus can increase the sales and profits of the producer to a great extent. The profitability depends on the nature and quantum of value addition. More the value addition more is the profitability.

- **Widen Market:**
Agro-Processing widens the market. Processed products can be taken to distant and overseas market at lower cost. This is because of the fact that processed food has better shelf life and the demand of processed food in international market has increased exponentially.

1.2.3. Benefits to Agriculture:
The agro-processing industry has strong backward linkage and leads to development of agriculture.

- **Stimulates Agricultural Production:**
The development of agro-industries has many beneficial feedback effects on agriculture itself. The most direct one is, of course, the stimulus it provides for increased agricultural production through market expansion. In fact, the establishment of processing facilities is itself an essential first step towards stimulating both consumer demand for the processed product and an adequate supply of the raw material. Agro-Processing can increase the demand for the farm products. With rapid urbanization coupled with rising income and changing lifestyle the demand for processed products is on rise. It in turn leads to the growth in demand for the farm products.
• **Boosts Agricultural Income:**
Agro-Processing boosts income of the small/subsistence farmers by creating new market. The agro-processing industries create market for farm products and provide better prices to farmers. The farm to factory linkage can reduce the middlemen in marketing and fetch the remunerative prices to the farmers. This can enhance the confidence of farmers that is so needed to boost agriculture.

• **Assurance of Market and Returns:**
Agro-Processing assures ready market for the farmers and save his efforts, time and pains in marketing the farm products. It can stabilize farmer’s income. So farmer can concentrate on production, and improve both the quality and quantity of production.

• **Improvement in Quality and Productivity of Agriculture:**
Increase in demand of farm products and income encourages farmers to go for innovation and modernization of agriculture. This in turn can lead to improvement in the quality and productivity of agriculture.

• **Improvement in Infrastructure:**
The provision of transport, power and other infra-structural facilities required for agro-processing industries also benefits agricultural production. The development of these and other industries provides a more favourable atmosphere for technical progress and the acceptance of new ideas in farming itself.

• **Promotes Optimum use of Resources:**
The increase in the farm production and income due to the demand from the agro-processing sector can lead to the optimum use of all resources – land, capital, machinery, labour. This helps in reducing the wastages of resources and channeling them for productive purpose.

• **Increase in Capital Formation:**
The increase in the output of farm and income can increase the confidence of the farmer in farm activities. This confidence gets translated in increase in rate of capital formation in agriculture which in turn can give added impetus to the agriculture.
1.2.4. Benefits to Economy:
The agro-processing industry leads to manifold benefits for the economy.

- **Large and Immediate Employment:**
One of the problems of Indian agriculture is overcrowding. Excessive dependence on agriculture forms a vicious circle and leads to unemployment, low productivity, low income and consequently low saving and low investment.

Agro-Processing generates employment opportunities on a massive scale. Agro-Processing Industry creates opportunities to absorb surplus labour in agriculture and thereby helps break the vicious circle of rural poverty. Agro-industries have also been viewed as a safety valve that needs to be built within rural areas to absorb surplus labour and provide relief to the problem of large scale disguised unemployment. Agro-processing is generally found to be more labour intensive and less capital using. Therefore it generates more employment per unit of capital employed. Further, because these are less capital intensive can be set up in no time, these provide immediate employment. In this context, its significance in small-scale industry is particularly notable. Thus agro-processing can considerably reduce unemployment, underemployment and poverty especially in rural areas.

- **Contribution in Production and Export:**
The agro-processing industry has potential to contribute to a large extent in the industrial production. Further, the demand for processed food products has increased exponentially in the world market. Therefore, the agro-processing has potential to increase the export and improve the balance of payment situation of the country.

- **Forward Linkages:**
The establishment of certain primary processing industries can lead, through forward linkage, to a number of more advanced industries. Forest industries are particularly valuable as a base on which other industries can be established in this way. Once paper and paperboard production has been started, a large number of conversion industries can emerge, such as the manufacture of paper bags, stationery items. The products such as rubber are used in a wide variety of manufacturing industries.
• **Side-way Linkages:**
The capacity of agro-industry to generate demand and employment in other industries is also important because of its growing potential for activating "sideway linkages"; that is, linkages that derive from the use of by-products or waste products of the main industrial activity. For example, animal feed industries can utilize several agro-industrial by-products, such as whey, oilseed press cakes and blood, carcass and bone meal. In addition, many industries using agricultural raw materials produce waste that can be used as fuel, paper pulp or fertilizer. Recycling and biological agriculture are two activities that go together to respond to the idea of a sustainable form of exploitation of natural resources within an efficient industrial context.

• **Promotes Other Industries:**
Agro-processing industry gives rise to a demand for a wide variety of machinery, equipment, packaging materials and intermediate goods used in the processing itself. Thus, agro-processing stimulate growth in other industries as well.

• **Promotes Services:**
Agro-Processing serves as adjunct to other marketing functions, such as transportation, storage and merchandising. These services in turn provide employment for the large sections of the society.

• **Promotes Entrepreneurial Culture:**
The demand in the agro-processing industry can develop entrepreneurial culture amongst youths especially from rural areas leading to entrepreneurial development.

• **Use of Domestic and Latent Resources:**
The agro-processing use the indigenous raw material and technical skill and requires low import content than the industry average. This leads to reduction in the import and the pressure on foreign exchange requirement. Further the latent resources like hoarded wealth, family labour, entrepreneurial talent etc. can be better utilized.
• **Reduces Migration:**
A good many Indian official reports and other important writings make a plea for agro-processing industries in the context of rural-urban migration. Agro-Processing Industry can check migration of people from rural area to urban areas. With the establishment of agro-processing enterprises employment opportunities are made locally available and this brings about a check on the mass exodus from rural to urban areas. The educated unemployed, technicians, engineers, chemists etc. can be absorbed by the agro-processing industry. In fact, agro-processing industry in rural areas can pave the way to divert the urban employment towards the rural areas, thereby reversing the present trend of urbanization. This will reduce the complex problems due to rapid urbanization. Agro-processing enterprises thus, preserve the village where lives a deep rooted and closely knit society which has a more definite image than the amorphous urban conglomerate.

• **Develops Infrastructure:**
Besides bringing prosperity to rural areas through a desired ‘push to agriculture’, agro-processing industry also acts as catalytic agent for the development of infrastructure in rural areas. Thus, the road, rail, electricity, water etc. as basic infrastructural facilities, increase in rural areas. As a result the gap between the rural and urban areas is reduced. This leads to balanced regional development.

• **Promotes Welfare:**
Agro-processing industries can be started in smaller towns especially villages and thus bring about regional dispersal of industries. Decentralization also helps to tap local resources and improves standard of living of backward regions. Thus, agro-processing industry can lead to an efficient decentralization of the economy and more equitable distribution of the income which in turn lead to socio-economic development of all classes. It is of paramount importance because it leads to all-inclusive development.

Thus the agro-processing industry can function as catalytic agent to bring about take-off in agriculture and ultimately in economy as a whole.
1.3. CLASSIFICATION OF AGRO-PROCESSING INDUSTRY:

Agro-processing industry is classified based on various parameters – nature and stage of the processing, type of process, raw materials, product etc. All these classifications are useful as they throw light on the specific nature and complexities involved in agro-processing.

C.C. Pattanshetti\textsuperscript{42} classifies agro-processing industries into two categories viz. Primary Processing Industries and Secondary Processing Industries. Sarkar and Karan\textsuperscript{43} have classified agro-processing industry on similar lines but have added one more category to it as Tertiary Processing Industries.

- \textit{Primary Processing Industries:} Primary processing industries are those industries which are engaged in first stage of processing such as sugarcane into sugar, gur and khandasari industries, processing of oil seeds by and oil mills, ginning and pressing of cotton and baling of jute, rice, wheat and dal mills, processing of fruits and vegetables etc.

- \textit{Secondary Processing Industries:} Secondary processing industries are engaged in further stage of processing or more sophisticated treatment of the product such as bakery, confectionary, weaving, spinning etc.

- \textit{Tertiary Processing Industries:} Tertiary processing is further processing of products of secondary processing industries and byproducts of agricultural materials.

Another useful classification of agro-processing industry is in upstream and downstream industries\textsuperscript{44}. Upstream industries are nothing but primary processing industries and downstream industries are secondary and tertiary processing industries.

Agro-processing industries are also classified on the basis of the type of processing like manual, mechanical or chemical etc.\textsuperscript{45} But such classification is of little use as one enterprise can use multiple processing activities in sequence. This aspect makes it difficult to classify the enterprise based on process.

V.R. Gaikwad classifies agro-processing industry into five categories depending on the source of the raw material\textsuperscript{46} as follows.
• **Plant Kingdom:** These industries process the raw material derived from plant kingdom. These are subdivided into many categories based on the type of plants processed viz. Food Crops, Commercial Crops, Horticulture, Flouriculture, Plantation, Medicinal Plants, Wild Plants.

• **Animal Kingdom:** These industries process raw material derived from animals like cattle, cows, buffaloes, sheep goat, pig, chicken, fishery etc. Some examples are milk and milk products, woolen products, leather products, processing of meat etc.

• **Insect Kingdom:** These industries process raw material derived from the insect kingdom like silkworm, honey bees etc. Some examples are silk yarn, honey etc.

• **Micro Organisms:** These industries process micro organisms like algee, fungi etc. Some example are mushroom processing, pharmaceutical products etc.

• **Forestry:** These industries process raw material derived from forest. Some examples are wood processing, furniture, paper and paper products etc.

Agro-processing industry is generally classified in to two categories.

• **Agro-Food Sector:** Agro-food sector processes the raw material derived from agriculture, livestock and fishery into edible products. The examples are processing of fruits, vegetables, extraction of edible oil, milk processing, dal mills, rice mills, animal feed, bakery, sugar, confectionary, spices etc. The food industries are much more homogeneous and are easier to classify than the non-food industries since their products have the same end use. The processing is done for preservation to increase life and value addition to increase nutritional value.

• **Agro-Nonfood Sector:** Agro-nonfood sector processes the raw material derived from agriculture, livestock and forestry into products of non-edible nature. The examples are wood processing, paper and paper products, leather and leather products, processing of fibers like cotton, wool, jute, silk, processing medicinal plants etc. Non-food industries have a wide variety of end users. Almost all non-food agricultural products require a high degree of processing. There is usually a definite sequence of operations, leading through various intermediate products before reaching the final product. Because of the value added at each of these successive stages of processing, the proportion of the total cost represented by the original raw material diminishes steadily. Many of the non-food industries now increasingly use synthetics and other artificial substitutes (especially fibers) in combination with natural raw materials.
Today, the factors like - the growing complexity of inputs, the impact of innovation processes and new technologies, the sophistication and the growing range of the transformation processes – makes it increasingly difficult to draw a clear distinction between what should be considered strictly industry and what can be classified as agro-processing industry. Further it is also difficult to classify the agro-processing industry.

In India, Central Statistical Organisation (CSO) released ‘Standard Industrial Classification’ (SIC) in 1962. Significant changes in the organisation and structure of the industries necessitated the revision of SIC 1962. This revision was completed in 1970 and the National Industrial Classification (NIC) 1970 came into existence. NIC 1970 was revised in 1987 and 1998 and recently updated in 2004. The NIC 2004 is based on the ‘International Standards Industrial Classification’ (ISIC Rev. 3.1) released by United Nation’s Statistical Division. All the economic activities are classified in NIC 2004 under 17 sections starting from ‘A’ to ‘Q’. NIC-2004 has 17 sections, 99 divisions, 161 groups, 310 classes and 1191 subclasses.

Even though this classification is rigid and has some limitations, it is of statistical use. The government and its agencies use it for maintaining statistical database. Therefore the framework of the NIC 2004 is used for classification of agro-processing industry in this research as follows.

Diagram 1.1: Classification of Agro-Processing Industry

AGRO-PROCESSING INDUSTRY

<table>
<thead>
<tr>
<th>Food Sector</th>
<th>Non Food Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing of Fruits and Vegetables</td>
<td>Textiles</td>
</tr>
<tr>
<td>Vegetable Oil</td>
<td>Leather and Leather Products</td>
</tr>
<tr>
<td>Milk and Milk Products</td>
<td>Wood and Wood Products</td>
</tr>
<tr>
<td>Grain Mill Products</td>
<td>Paper and Paper Products</td>
</tr>
<tr>
<td>Animal Feed</td>
<td>Ayurvedic Products</td>
</tr>
<tr>
<td>Bakery Products</td>
<td>Essence Sticks</td>
</tr>
<tr>
<td>Confectionary</td>
<td>Rubber and Rubber Products</td>
</tr>
<tr>
<td>Spices</td>
<td>Other Food Products</td>
</tr>
<tr>
<td>Tobacco related Products</td>
<td></td>
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</tbody>
</table>

Other Food Products
1.4. PLACE OF AGRO-PORCESSING INDUSTRY WORLDWIDE:

Agro-processing industry processes all materials and intermediate products originating from the agricultural farm, livestock, fisheries and forestry. Agro-processing industry, with its strong forward and backward linkages, has manifold contribution to agricultural and economic development. The place of agro-processing industry worldwide is pointed out on the basis of its contribution in economic development.

1.4.1. Contribution in Employment and Income Generation:

Agro-industry plays a fundamental role in employment creation and income generation. Particularly the food and beverages processing sector remains important at all levels of economic development. Within the European Union (EU) it is a leading employer with 13% of employment in manufacturing; in the USA it is the third most important sector with 9% of total manufacturing employment. Taking only into account countries where data is available the International Labour Organisation (ILO) calculates global employment in the formal food and beverages sector at 22 million. However, one should bear in mind that in developing countries an estimated average of 60% of workers in food and beverages are employed in the informal economy. In addition to the direct employment effect, vibrant agro-industry is found to generate employment in downstream and upstream sectors such as agriculture, commerce and services.

Agro-industry can play a strategic role in pro-poor growth strategies, particularly in developing countries where 75% of the poor live in rural areas. As possibilities for income generation are restricted in rural areas, rural non-farm earnings from trading, agro-processing, manufacturing, commercial, and service activities constitute a significant part of household income. For developing countries as a whole, non-farm earnings account for 30 to 45% of rural household income. They complement agricultural wages and serve household risk diversification and the evening out of consumption patterns. With low capital requirements and undemanding local marketing channels the rural non-farm economy offers opportunities for poor households (particularly women headed households), small-scale farmers and other smallholders, representing an important instrument for rural poverty alleviation. The development of agro-industry can also have an important impact on the local agricultural sector as well as the livelihoods of small holder farmers, provided they can produce on a stable basis, supplying regular quantity and quality.
In terms of employment composition, rural industries (manufacturing) account for approximately one fifth of rural non-farm employment, consisting mostly of occupations in agro-industries. Indirectly, however, other activities such as commerce and retailing, construction, equipment manufacture, transport, logistics and trade are typically associated with agro-related manufactures and agribusiness.

The importance of agro-processing industry for employment is further emphasized by high and increasing levels of female involvement, especially in the non-traditional, high-value agro-chains (i.e. horticulture, fruits and fish products). Female employment in such sectors can range between 50 and 90%. Wilkinson and Rocha have pointed out level of women employment in the agro-processing industry. In the Dominican Republic, women comprise roughly 50% of the labor force employed in horticulture processing; in Mexico, the share of women engaged in packaging is 80-90%; in Zimbabwe women represent 91% of horticultural workers; in Chilean fruit production, female employment increased almost 300% between 1982 and 1992, an impressive pattern when compared to a national growth rate of 70% for the female labor force; and in Ecuador, Kenya and Uganda, women represent respectively 70%, 75%, and 85% of workers in horticulture, to name but a few examples. However, strong gender segmentation in production and processing tends to consign women to more vulnerable forms of work (casual, temporary and seasonal), lower paid and more labour-intensive preparation and/or processing.

1.4.2. Contribution to GDP and Manufacturing:

The agro-processing sector roughly account for more than a third of the GDP in Indonesia, Chile, Brazil and Thailand, and between 20 and 25% in Sub-Saharan countries. The entire food system, including the production of primary goods and commodities, marketing and retailing, would account for more than 50% of developing countries’ GDP.

Trends illustrate that there are large value-adding opportunities in agro-industry relative to agriculture. In low and middle income countries the food processing sector is typically one of the largest industrial activities in terms of value-adding. Using the UNIDO Industrial Statistics Database 2005, agro-processing value added as a share of GDP amounts to 4.3% for low income countries and 5% for lower middle and upper
middle income countries. This, however, neglects artisan production and the informal sector, which are particularly important in low income countries. Thus the figures heavily underestimate the true extent of agro-industry’s contribution to GDP in those countries.

The agro-processing sector contributes more than 50% of total manufacturing value added in low income countries, 36% lower middle and 32% upper middle income countries. Or, put differently, agro-processing industry contributes a share of 61% to total manufacturing in agriculture based countries, 42% in countries in transformation and 37% in urbanized developing countries\textsuperscript{53}.

Within manufacturing, the agro-processing sector occupies a significant position in overall turnover and value added in developing countries – though huge heterogeneity may exist among them. On average, productivity levels in food processing are above the manufacturing average, making it one of the more efficient economic sectors in least developed countries. Incremental investment here could benefit the overall competitive position of the countries in question.

1.4.3. Promotion of Socio-Economic Development:
Strong synergies can 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. As a result, productivity and quality of agricultural production, farm returns, economic stability for rural households, food security and innovation throughout the value chain can be enhanced. Efficient agro-industry can therefore spur agricultural growth, and – accompanied by a strong link with smallholders – reduce rural poverty.

Wilkinson and Rocha\textsuperscript{54} argued that as economies become more sophisticated, economic structures are transformed and capital and labour are transferred from agriculture to the expanding agro-industrial and related service sectors. Accordingly, the agribusiness-to-agriculture ratio increases. In the U.S. agribusiness contributes 13 times more to GDP than agricultural activities; in urbanized developing countries the ratio remains at 3.3;
in transforming countries it falls below 2 and in agriculture-based countries it reaches merely 0.6. Many experiences in Latin America, Asia and Africa (e.g. Brazil, Chile, China, Kenya, Mexico, South Africa, Taiwan and Thailand) have demonstrated the potential of agro-based SMEs for value-adding, employment generation and improvement of farm and rural non-farm income, food security and rural living standards. In Africa, where a weakening and even collapse of public services has resulted in dysfunctional input and output markets and a breakdown in the delivery of agricultural services to small scale farmers, local agro-enterprises are also increasingly filling crucial institutional gaps, particularly for commercial crops.

Crucially, the contribution of activities which define an increasing agribusiness to- agriculture ratio (e.g. agro-related industries and distribution services) is highly correlated with basic measures of socioeconomic development. Although such relationship can be expected, it is particularly strong for countries at low levels of human development, mostly agriculture-based countries55.

1.4.4. Stabilization and Regeneration:
The development of rural agro-industries can play a major strategic role in stabilizing and regenerating countries and in consolidating rural and regional development56. It can do this by providing employment and supporting wealth creation and economic growth in a decentralised manner in areas that have been affected by internal conflicts, natural catastrophes or out-migration resulting from uneven regional development. Developing agro-industry in such areas promotes a more balanced, decentralized growth within the country by generating productive employment alternatives. It thus not only reduces migration, especially of young unskilled labour into crowded cities, but it can even reverse migration trends by offering new employment opportunities in those affected areas, thereby alleviating social pressures and demands on public services within the city.
1.4.5. Integration into Global Markets:

By introducing and accelerating technical innovations, promoting entrepreneurship and improving business practices along the chain, agro-based SMEs not only provide access to new domestic market outlets, but can essentially act as a launching pad for the integration of developing countries into global markets. Developing countries have a natural comparative advantage in global markets in many agro-industry sectors. They have shown that they can be competitive in traditional tropical crops, but also in non-traditional exports and in components of the animal protein complex. Non-traditional food exports such as fruits, horticulture and fish products, as well as livestock products, have already become an important part of exports. However, due to protective trade regimes and distorted tariffs in developed countries, developing countries have been unable to increase their overall market share in world agricultural trade (including agricultural raw materials, fisheries, processed food, beverages and high-value products) since the 1980s.

Despite continuing barriers to trade, it is believed that developing countries can identify and explore export market opportunities by developing their agro-industry. The markets for organic, fair trade and origin products, for instance, are high-value outlets for agricultural products and demand from developed and some middle income developing countries has been growing strongly over recent years. With the help of a competitive agro-industry that increases value-added and improves product safety and quality, the efficiency of technical processes and business practices, access to such potentially lucrative speciality markets would be facilitated. Crucial for successful integration into global agro-markets, however, are also issues such as adherence to standards, quality consistency, volume requirements and timely delivery.

Thus agro-processing industry occupies a significant place worldwide and considered as engine of socio-economic development.
1.5. AGRO-PROCESSING INDUSTRY IN INDIA:

1.5.1. Historical Perspective:
Agro-Processing is as old as agriculture. It was done earlier for converting agricultural raw material into consumable form on the non-commercial basis. After industrialization the agro-processing has started in big way on techno-commercial basis.

India has a long tradition of agro-processing. Among the manufactured goods was cotton, silk, woolen textiles. Indian artisans were famous for weaving fine cloth, which known popularly as ‘Dhaka Malmal’ worldwide. Apart from cotton textiles other products like spices, perfumes were also exported. Through its traditional strengths in agriculture, processing and exports of agri-processed products, according to economic historian Angus Maddison, India was the world's largest economy from the first to eleventh century, and in the eighteenth century, with a 32.9% share of world GDP in the first century to 28.9% in 1000 AD, and in 1700 AD with 24.4%. India’s share of world GDP was 15% in 1820, which ranked second after China. On the basis of primary sector production and exports, India and China together accounted for more than half of the GDP of the world. Until around 1450, India and China were technologically more innovative and advanced than Europe. But both economies went downhill between the early 18th and 20th century. As a result of this decline India’s share in World GDP dropped to 1.2%.

By the middle of the nineteenth century, common agro processing industries included hand pounding units for rice, water power driven flour mills, bullock driven oil ghanies, bullock operated sugarcane crushers, paper making units, spinning wheels and handloom units for weaving. In British India, during the year 1863, a note was written by the Governor of Madras state, Sir William Denison to the government of Madras state for laying greater stress on agriculture and agro processing. Based on this, a set of improved machinery was brought from England for demonstration and adoption. The demonstration continued at Saidapet near Madras till 1871 with little outcome.

Importance of agro-processing sector was first realized and documented after the disastrous famine of Bengal during 1870’s. Report of the Famine Commission, set up by the British Government, in its report submitted in 1880, clearly stated the need for agricultural improvement and improved post harvest infrastructural development.
specifically, rail network. Need was also felt for incorporating chemical interventions in the agricultural sector and precision farming through agricultural mechanisation manned by engineers. The Royal Commission on Agriculture setup by the British Government conducted a detailed study. In its report published during the year 1928, it called for scientific approach to the sector and stressed for developing rural industries and cooperatives.

Realizing the importance of the agro-processing sector for rural development as a tool for ‘Poorn Swaraj (complete self rule)’, Mahatma Gandhi, during 1930’s, launched ‘Swadeshi’ movement by promoting ‘Charkha (spinning wheel)’ and balanced nutrition and by setting example and writing articles in his famous magazine “Harijan”. Under the inspiration of Mahatma Gandhi, the national struggle for India's political independence witnessed a concomitant struggle for the preservation, protection and encouragement of rural industries. The preference for Khadi vis-a-vis mill cloth, and cottage and village industry products vis-à-vis the urban and mill-made products was motivated from a realization that the experience of urban handicraft centres might also get extended to rural non-agricultural activity and the cottage and village industries. The Gandhian ideology was not only economic but also social and political. In the Gandhian idiom, cottage and village industries represent a support structure to a life style that is more moral than economic. Gandhi gave political, nationalist and moral interpretations to his plea for protection of traditional crafts and villages. Adoption of traditional consumer goods, made by the cottage and village industries, got associated with the Indian nationalist sentiment and the national struggle for political independence. The lead political party, the Indian National Congress, in fact, made it obligatory on all ‘active’ party workers to wear hand spun and hand woven cloth. To wear Khadi, use ghani oil, prefer hand-pounded rice, and buy handmade and locally produced shoes became a symbol of patriotism, nationalism and political commitment against foreign (British) industries. It was thus a preference for handmade consumer items especially of agro-processing industry acted as one of the potent tools against Britishers on the path of ‘Poorna Swaraj’.

Soon after India's independence the Congress Party constituted the Economic Programmes Committee to provide a broad direction to the Congress Governments at the Centre and State levels. The Committee, headed by Jawaharlal Nehru, reported in
January 1948. In its recommendations on industries it observed\(^{62}\): Industries producing articles of food and clothing and other consumer goods should constitute the decentralized sector of Indian economy and should, as far as possible, be developed and run on a cooperative basis. Such industries should for most of the part be run on cottage and small scale basis. This was a large area earmarked for rural, cooperative and small scale industries. The general direction indicated for state intervention was for imposing restrictions on large scale manufacturing of most consumer goods while extending support to traditional systems of production.

The Indian National Congress took over the reins of power after India's independence in 1947. The Government of India adopted a number of specific measures such as a favourable treatment to *Khadi*, cottage and village industries\(^{63}\). Thus the centre shifted the responsibility of the promotion of the cottage and village industries to the state and envisaged the role of small scale and large scale units not as one of conflict but of complementarity.

During the period, 1952 to 1954, the All India Khadi and Village Industries Board (KVIB) and a Board each to promote silk, coir, and handicraft, handloom and small scale industries were instituted. These Boards were required to recommend general policies and prepare action plans for promoting activities in their respective areas through preference in Government purchase and distribution of raw materials, fiscal and monetary concessions, and supportive administrative policies. There was, however, no special category of industries called agro-industries. Right from the first five year plan, in each successive plan, the government has given thrust on the cottage and village industries.

The sixties witnessed the beginning of the green revolution in some parts of India. In the Punjab, Haryana and western Uttar Pradesh, agricultural output per hectare rose remarkably. The green revolution brought Indian agriculture in close contact with industry. With a view to reducing problems of procurement of industrial inputs for agriculture and promoting agro-processing industries, the State Governments were advised by the Centre to set up Agro-industrial Corporations. After Green Revolution agro-processing sector in India witnessed a rapid growth specifically during 1980s. It followed the first phase of the Green Revolution that had resulted in increased
agricultural production and the need for its post harvest management. The importance of the sector was realized by the business community leading to diversification from grain trading to processing. In eighties the policies for agro-processing undergone change and focus was given to food processing sector. Lead was given by the rice processing industry, followed closely by wheat milling, paper and pulp industry, milk processing sector, jute industry, sugarcane processing and oils extraction through solvent plants. In some areas like the solvent extraction industry, the growth in installed processing capacity has been far higher than the supply of the raw materials. However, in other areas like fruits and vegetable processing, the growth has not been encouraging on account of poor demand for processed products by the consumers. In such cases, the industry has also not been able to develop the demand adequately.

The agro-processing industry in India has traditionally been confined mainly to a select few commodities such as sugar, edible oils, tea, coffee and spices. In recent times, this sector has been expanding and diversifying into new commodities such as fruits, vegetables, meat (poultry), dairy products, etc. Nevertheless, the sector remains by and large small compared to the availability of raw products and also in relation to the demand for processed food products, especially in urban areas. For example, in the case of edible oils, domestic production meets only about half of domestic demand and consequently India is one of the largest importers of edible oils in the world.

1.5.2. Status of Agro-Processing Industry in India:
Agro-processing is now regarded as the sunrise sector of the Indian economy in view of its large potential for growth and likely socio economic impact specifically on employment and income generation. But its present status in India is poor.

- **Contribution to GDP:** The agro-processing sector accounts for about 6% of GDP in India. Its share in total economic activities has not much increased during the last decade.

- **Contribution to Employment:** In developed countries, up to 13 per cent of the total work force is engaged in agro-processing sector directly or indirectly. However, in India, only about 3 per cent of the work force finds employment in this sector revealing its underdeveloped state and vast untapped potential for employment.
• **Favourable Factor Condition:**

The agro-processing industry has huge supply advantage of raw material because of the diverse agro-climatic conditions and favourable factor condition in India.

**Diverse Agro-Climatic Conditions:**
- 52% of India’s total land is cultivable as against 11% world average.
- India's has gross cropped area of 160 mn. hectares which nearly equals the size of US farmland and is larger than that of Europe and China.
- 40% this land being irrigated. It is estimated that a 1% increase in irrigated area generates a 1.6% increase in crop output and a return on investment of 17%
  - Realizing this, the Indian government has been making a concerted effort to increase gross cropped area under irrigation.
- India has 8041 km long coast line.
- All 15 major climates in the world exist in India.
- India has 20 agri-climatic regions.
- India has nearly 46 soil types out of 60 different soil types available in the world.
- Sunshine hours and day length ideally suited for all type of cultivation.

**Leading Raw Material Production:**
- India has largest livestock population in the world with 50% of world’s buffaloes and 16% of Cattles. In fact, India accounts for 17% of the animals in the world.
- Largest producer of milk in the world.
- Fourth largest producer of fishes. In fact India accounts for 10% of fish genetic resources of the world.
- Fifth largest producer of eggs in the world.
- India accounts for 12% of the plants (including over 10,000 species of aromatic and medicinal plants) in the world.
- Third largest producer of food grains in the world.
- Leading producer of cereal crops, pulses, tea, jute and allied fibers in the world.
- Second largest producer of fruits & vegetables in world.
- Among top five producers worldwide of rice, wheat, groundnuts, coffee, tobacco, spices, sugarcane and oilseeds.
India’s favourable factor condition is shown in Table 1.1.

### Table 1.1: India’s Favourable Factor Condition

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Factor</th>
<th>India</th>
<th>Global Rank</th>
<th>Share in Global Production (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arable Land (million hectares)</td>
<td>184</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Irrigated Land (million hectares)</td>
<td>59</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Coast Line (km)</td>
<td>8041</td>
<td>19</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Fruits (MT)</td>
<td>50</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Vegetables (MT)</td>
<td>100</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Rice/Paddy (MT)</td>
<td>132</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>Wheat (MT)</td>
<td>78</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>Milk (MT)</td>
<td>90</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>Sugarcane (MT)</td>
<td>289</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>10</td>
<td>Pulses (MT)</td>
<td>15</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>11</td>
<td>Tea (MT)</td>
<td>1</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>12</td>
<td>Edible Oil seeds (MT)</td>
<td>29</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>13</td>
<td>Cattle (million)</td>
<td>226</td>
<td>1</td>
<td>16</td>
</tr>
</tbody>
</table>


- **Low Level of Processing:** The share of agricultural products going for processing is very small. Because of low level of processing (6% in case of perishables) the value addition is 20% \(^{64}\). The situation of the low level of processing is evident from the Table 1.2.

### Table 1.2: Size of Processing Relative to Production

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Commodity</th>
<th>Production Mn Tons</th>
<th>World Rank</th>
<th>India (% of Processing)</th>
<th>Other Countries (% of Processing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Milk</td>
<td>90</td>
<td>I</td>
<td>35%</td>
<td>60-75% in Developed Countries</td>
</tr>
<tr>
<td>2</td>
<td>Fruits and Vegetables</td>
<td>150</td>
<td>II</td>
<td>2.1%</td>
<td>USA (65%), Philippines (78%), China (23%)</td>
</tr>
<tr>
<td>3</td>
<td>Livestock</td>
<td>485</td>
<td>I</td>
<td>21%</td>
<td>60-70% in Developed Countries</td>
</tr>
<tr>
<td>4</td>
<td>Fishes</td>
<td>6.3</td>
<td>III</td>
<td>23%</td>
<td>60-70% in Developed Countries</td>
</tr>
</tbody>
</table>

• **Heavy Post Harvest Losses:** India loses agro products worth Rs.1 trillion every year caused by post-harvest poor storage facilities, transport loss and lack of processing 65.

• **Large Size and Growth Prospects:** The Food Processing sector in India is one of the largest in terms of production, consumption, export and growth prospects. The food market in India is estimated at over Rs. 9,100 billion and accounts for about two third of the total Indian retail market66. The Size of semi-processed and ready to eat packaged food industry is over Rs. 4000 Crores (US $ 1 Billion) and is growing over 20% 67.

• **Wide Range of Products:** Agro-processing sector covers a wide range of products in both food and non food sector. These products includes processed fruit and vegetables, edible oil, meat, milk and milk products, alcoholic beverages, fisheries, tea, coffee, grain processing, bakery and confectionery, spices, other food products, textiles, wood and wood products, paper and paper products, leather and leather products, ayurvedic products etc.

• **Foreign Direct Investment:** India has displaced the US as the second most favoured destination in the world for FDI after China. The food processing industry received FDI totaling Rs. 7190 million in 2007-08.

• **Exports:** India stands a distant 21st for the year 2008, with a 1.6% share in the global trade68. India exported about 17.5 million tones of agro and processed food products worth Rs. 31870 crores in financial year 2007-08, against 10.9 million tons worth Rs. 21806 crores in the previous year which shows a growth of 45% in the value. The export basket of processed products, on the other hand, is somewhat diversified. Four items account for about 63% to 73% of agro-processing exports: fishery products 22% to 30%, prepared animal feeds, food wastes and residues 7% to 20%, fruits and vegetables 13% to 21% and coffee, tea mate 10% to 21%. India exports mainly to South East Asia and Middle East. Nearly 70% of its exports are to the countries from these areas.
1.6. SMALL SCALE INDUSTRIES IN INDIA:

Worldwide, the small scale industries (SSI) have been accepted as the engine of economic growth and for promoting equitable development. Small scale industry play pivotal role in every economy whether industrially developed or developing. In United States, small scale industries are regarded as ‘Seed-bed for growth’ and therefore given thrust in policy planning. The role which is being played by small scale industries in Japan is well known over the world. They are aptly described in Japan as ‘The mother of creation’. In developing countries like India small scale industries are regarded as vehicle for socio-economic transformation and have therefore given thrust in formulation of policies and programmes by the Government.

1.6.1. Concept of Small Scale Industries:

In simple words small scale industries means the industries whose scale of operation is small. Since 1950, when the government made its first attempt to classify industries in small scale sector, the criterion to define small scale has evolved over a period of years. The criterions and the benchmarks have been revised by the government in 1966, 1975, 1980, 1985, 1990, 1997 and 2000. Recently the parliament enacted “Micro, Small and Medium Enterprises Development Act (MSMED)” in 2006. In accordance with its provision the enterprises are classified in two classes:

- **Manufacturing Enterprises:** The enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the industries (Development and Regulation Act, 1951).
- **Service Enterprises:** The enterprises engaged in providing or rendering of services.

The manufacturing and service enterprises are defined on the basis of investment in plant and machinery /equipment by the MSMED Act, 2006, are shown in Table 1.3.

**Table 1.3: Definition of Small Scale Enterprises**

<table>
<thead>
<tr>
<th>Enterprises</th>
<th>Investment in Plant &amp; Machinery/Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Manufacturing Sector</td>
</tr>
<tr>
<td>Micro Enterprises</td>
<td>Upto Rs. 25 Lakh</td>
</tr>
<tr>
<td>Small Enterprises</td>
<td>Above Rs. 25 Lakh and upto Rs. 5 Crore</td>
</tr>
</tbody>
</table>

(Source: Government of India, Ministry of Micro, Small and Medium Enterprises, New Delhi)
1.6.2. Significance of Small Scale Industries:
Small scale industries constitute an important segment of Indian economy in terms of their contribution to industrial production, exports, employment and creation of an entrepreneurial base. The significance of it can be gauged from following benefits.

- **Large and Immediate Employment:**
Small scale industry generates immediate employment on a massive scale. This is based on the fact that small scale enterprises are labour intensive and thus create more employment per unit of capital employed.

- **Large Production and Export:**
Small scale industry contributes heavily in the industrial production and export.

- **Use of Latent Resources:**
Small scale industry uses and develops resources which are available locally and quite many of them otherwise remained unused. These resources are hoarded wealth, family labour, artisan’s skills, native entrepreneurship, material inputs etc. are thinly spread throughout the country and cannot be utilized by large scale industries which need them in big amounts and at specified places. Thus small scale industry is truly ‘domestic industry’ with almost hundred percent ‘domestic contents’.

- **Promotes Equality:**
The income generated in large number of small scale enterprises is dispersed more widely in the community than income generated in few large enterprises. In other words, the income benefit of small enterprises is derived by a large population while large enterprises encourage more concentration of economic power. In this way, small enterprises bring about greater equality of income distribution.

- **Promotes Decentralization:**
Industrialization of the country can become complete only if it penetrates into the remote corners of the country. Large industries are concentrated in few metropolitan cities. Small scale industries can be started in smaller towns and thus bring about regional dispersal of industries. Decentralization also helps to tap local resources and improves standard of living of backward regions. This reduces regional imbalances.
1.6.3. Status of Small Scale Industries in India:
The small scale industrial sector which plays a pivotal role in the Indian economy in terms of employment, output and export has recorded a high rate of growth since independence in spite of stiff competition from large scale industries.

- The number of registered units which went from 16000 in 1950 to 36000 units in 1961 and 4.16 lakhs in 1973-74 to 67.87 lakh units in 1990-91. In 2005-06, the number of registered units was 123.42 lakhs.
- The fixed investment has grown from Rs. 2296 crores in 1973-74 to Rs. 93555 crores in 1990-91. In 2005-06, the fixed investment in small scale units was Rs. 188113 Crores.
- The production (output) has grown from Rs. 7200 crores in 1973-74 to Rs. 78802 crores in 1990-91. In 2005-06, the production of small scale units was Rs. 497842. The share in industrial production was 39%.
- The contribution of small scale sector to GDP of the country was 5.82%.
- The employment has grown from 39.7 lakhs in 1973-74 to 158.34 lakhs in 1990-91. In 2005-06, the number of persons employed in small scale industries was 294.91 lakhs. The share of small scale units in total employment was 34.93%.
- The export has grown from Rs. 393 crores in 1973-74 to Rs. 9664 crores in 1990-91. In 2004-05, the export of the small scale units was Rs. 124417 crores. The share in small scale units in total exports of the country is 34%.
- The small scale units have shown higher rate of growth vis-à-vis overall industrial sector. In 2005-06, the growth rate of small scale industry was 12.32% as against 8.10% of the overall industrial sector.

1.7. PROFILE OF AHMEDNAGAR DISTRICT:
Ahmednagar is one of the historical cities of India with a glorious past, an innovative present and a promising future. The profile of the Ahmednagar district is as follows.

- **Location and Area:**
Ahmednagar is located centrally in the state of Maharashtra. Ahmednagar District is the ‘Largest District’ in the State having 17413 sq. km of area which is 5.66% of the area of the state. It is bounded by seven districts – Nasik to the north, Aurangabad to the north-east, Beed and Usmanabad to the east, Solapur to the south, Thane and Pune to
the west. Ahmednagar is 120 km. from Pune, 110 km. from Aurangabad, 165 km. from Nasik and 250 km. from Thane.

- **Historical Heritage:**
  The district has historical heritage. The name of the District Ahmednagar has come from the name of the founder of the town Ahmednagar by Ahmed Shah Nizam Shah who founded it in late 15th century. The district has many places of historical importance including Ahmednagar fort where many national heroes of Indian Freedom Struggle including Late Pandit Jawaharlal Nehru, Sardar Vallabhbhai Patel, Moulana Azad were detained during Indian freedom movement. Pandit Jawaharlal Nehru wrote his famous book "Discovery of India" in Ahmednagar Fort. Ahmednagar has rich cultural heritage as it is known as ‘Saint’s Land’. Newasa where Dnyaneshwari was written, Shri Saibaba’s Shirdi, one of Ashtavinayak’s at Siddhatek, the famous Kanifnath temple, Shri Shani Shinganapur, Avatar Meherbaba’s Mehrabad attract devotees. The Palace of Chandbibi, the Bhandardara dam, the Maldhok (Indian Bustard) sanctuary and Rehkuri sanctuary are some of the places of tourist attraction.

- **Tehsil and Villages:**
  Ahmednagar district has 1581 villages and 14 tehsils (talukas) namely – Ahmednagar, Rahuri, Shrirampur, Rahata, Akole, Sangamner, Shevgaon, Pathardi, Parner, Shrigonda, Karjat, Jamkhed, Newasa and Kopargaon.

- **Population:**
  The population of the district is 40,40,642 out of which, urban population is 8,03,697 and the rural is 32,36,945. This means the rural population of the district is 80.11% highlighting its rural nature. It has a sex ratio of 941 females as against 1000 males and high literacy ratio of 75.30%.

- **Natural Environment:**
  Ahmednagar is naturally divided into eastern plain region and western hilly region. Atmosphere in the western region is cold and dry: whereas in the eastern region is hot and dry. Even though the average rainfall in the district is 566 mm. it is not equally spread across the district. Godavari and Bhima are two main rivers. Pravara is sub-river of Godavari and Mula is sub-river of Pravara. Bhima flows on the southern boundary and has Seena, Kukadi and Ghod as its sub-rivers.
• **Irrigation:**

The land is brought under irrigation by irrigation projects like Mula and Bhandardara in Ahmednagar district, Gangapur in Nasik district and Ghod, Kukadi in Pune district. 32.27 percent of the cultivated area is under irrigation. Out of which 71.46 percent is under well irrigation and remaining area is under canal irrigation. Role Model of water conservation work and rural development can be seen at villages in Parner tehsil - Ralegan-Siddhi and Hivare Bazar, which are also called ideal Villages.

• **Agriculture:**

Out of 16.68 lakh hectares of land, 9.85% area is covered under forest and 72.14% is used for cultivation. The soil types of the district are broadly divided into four categories namely coarse shallow soil; medium black soil; deep black soil and reddish soil. The district is divided into three agro climatic zones viz. Scarcity zone, Plain (Transition) zone and Ghat (Hilly) zone. On the basis of soil types and sources of irrigation, the district has been categorized into eight Agro Ecological Situations. There are three major cropping seasons in the district - Kharif, Rabi and Ziad. In kharif season, cereals like bajra, jowar, rice; pulses like moong, math; commercial crops like sugarcane; fibre crop like cotton; oilseeds like groundnut, sunflower etc. are taken. In Rabi season, cereals like jower, wheat; pulses like harbhara etc. are taken. In Ziad season, cereals like maize; oilseeds like groundnut, sunflower, fruits, vegetables etc. are taken. In 2006-07, out of the 13.26 hectares of cropping area, 75.47% was used for cereals, 6.32% for pulses, 6.12% for sugarcane, 3.20% for oilseeds, 2.83% for vegetables and fruits, 0.45% for cotton and other fibres, 0.35% for spices and 5.26% for other non edible crops. Ahmednagar district is also well known for its livestock. Out of the total livestock of 34.54 lakhs, 47.44% are cows, 43.39% are cattle and 9.17% are the other animals. Ahmednagar district is ranked number one in milk production. Ahmednagar district has 587 km. long river banks. 18182 hectares of area is available for fishery.

• **Transportation Facility:**

Ahmednagar district has 197 km of rail tracks of Central Railways and 12770 km. of roads. Ahmednagar is located on Central Railway's Daund - Manmad rail track and state highway Pune - Aurangabad. Further the Pune - Nasik national highway goes through Sangamner tehsil in Ahmednagar district.
**Communication Facility:**
As far as means of communication are concerned Ahmednagar district has 665 postal offices, 85 telegram offices, a small TV centre and radio centre. The telephone connections in the district are 205346.

**Banking and Insurance:**
Central Bank of India is the lead bank of the district. Banking facility is available in 136 cities and villages. 99 banks have 214 branches in the district. Ahmednagar District Central Co-operative Bank (ADCC) is well known as one of the largest bank in Asia. 424 branches of co-operative banks are operative in the district. The private banks like HDFC, ICICI also have branches in Ahmednagar. Life Insurance Corporation of India (LIC) has 7 branches in the district. The private insurance companies like Bajaj Allianz, ICICI Prudential, Max New York Life Insurance etc. have their branches in Ahmednagar. All four General Insurance companies namely – New India Assurance, United India Insurance, Oriental Insurance and National Insurance have their branches.

**Education:**
From primary education to college education and professional education like engineering, medical, management education, Ahmednagar district has all kinds of educational institutes. There are 4275 educational institutes in the district, out of which, 3308 are primary schools, 745 secondary schools, 182 higher secondary schools and 40 colleges. The Maharashtra Krishi Vidyapeeth, Rahuri, Dist. Ahmednagar is established on March 29, 1968 and subsequently named as Mahatma Phule Krishi Vidyapeeth (MPKV) after a great social reformer "Mahatma Jyotiba Phule". The basic mandate assigned to this University is advancement in teaching, research and imparting extension education to the farmers of the State. There are four Agricultural Universities in the State, catering the similar services in their locality. The jurisdiction of Mahatma Phule Krishi Vidyapeeth, Rahuri extends over Western Maharashtra covering ten districts.

**Military Base:**
Ahmednagar district is also well known as a military base. Armoured Core Centre and Services (ACC&S), Mechanised Infantry Regimental Centre (MIRC), Vehicles Research and Development Establishment (VRDE) and Controllerate of Quality Assurance Vehicles (CQAV) are the military establishments in Ahmednagar.
Industrial Development:

Over last sixty years Ahmednagar has grown into a leading centre of trade, commerce and industries. The industrial development in the district is lead by agro-processing industry. Ahmednagar is known as birth place for agro-processing co-operatives like sugar, milk. The first cooperative sugar factory in Asia was established by a visionary Padmashree Dr. Vithalrao Vikhe Patil at Pravaranagar in Ahmednagar District in 1948. What started as a small step, soon developed into an approach that has since been widely recognized as ‘The Pravara Model of Integrated Rural Development’. Today there are 14 sugar factories producing more than half of the sugar production in the state of Maharashtra making Ahmednagar as the leading district in the state in sugar production. The success of sugar industries acted as stimulus for the development of agriculture and other industries, transport, banking etc.

Ahmednagar was also well known for cotton textiles. In 1904, there were only 4 cotton ginning and pressing mills. In 1966, there were 41 cotton ginning and pressing units. In 1961, there were three cotton textiles factories especially spinning mills, 1222 handlooms and 544 power looms. There were 130 bidi making units in the district in 1966. In 1956, there was only one oil mill. In 1966, six oil mills were there in the district manufacturing especially groundnut and sunflower oil.

In 1967, the industrial estate was established in Kedgaon village located 6 km. from Ahmednagar on the Pune road. Entrepreneurial activities commenced under the leadership of Mr. Motibhau Firodiya and small industries were given plots of land.

Maharashtra Industrial Development Corporation (MIDC) began its first phase of the development of the Nagapur industrial area in Ahmednagar with nearly 205 hectors of land off the Ahmednagar – Manmad highway in 1975. As industrial activity progressed the area started getting importance. In 1977, MCCI inaugurated its Ahmednagar branch. That was a major step which helped solve several problems including technical ones, of the industries in the Nagapur MIDC. Maharashtra Small Scale Industrial Development Corporation (MSSIDC) depot was also established to help entrepreneurs get raw materials. Now MIDC has got four industrial areas in the district. The three large sized areas are – Ahmednagar, Shrirampur, Supa (Tehsil-Parner) and one small sized area is Rahuri. There are five proposed small industrial areas by MIDC in tehsils namely – Newasa, Jamkhed, Pathardi, Akole and Kopargaon. There are four
co-operative industrial estates in tehsils namely – Ahmednagar, Kopargaon, Shrirampur and Sangamner. The status of the industrial areas in the district is as follows.

Table 1.4: Industrial Areas in the Ahmednagar District

<table>
<thead>
<tr>
<th>Tehsil</th>
<th>Existing MIDC Area (Hectors)</th>
<th>Co-op. Industrial Estates Area (Hectors)</th>
<th>Proposed MIDC Area (Hectors)</th>
<th>Total Area (Hectors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmednagar</td>
<td>591.02</td>
<td>51.05</td>
<td>-</td>
<td>642.07</td>
</tr>
<tr>
<td>Shrirampur</td>
<td>368.82</td>
<td>23.28</td>
<td>-</td>
<td>392.10</td>
</tr>
<tr>
<td>Parner (Supa)</td>
<td>329.84</td>
<td>-</td>
<td>-</td>
<td>329.84</td>
</tr>
<tr>
<td>Rahuri</td>
<td>10.00</td>
<td>-</td>
<td>-</td>
<td>10.00</td>
</tr>
<tr>
<td>Sangamner</td>
<td>-</td>
<td>15.27</td>
<td>-</td>
<td>15.27</td>
</tr>
<tr>
<td>Kopargaon</td>
<td>-</td>
<td>36.11</td>
<td>121.00</td>
<td>157.11</td>
</tr>
<tr>
<td>Newasa</td>
<td>-</td>
<td>-</td>
<td>401.78</td>
<td>401.78</td>
</tr>
<tr>
<td>Jamkhed</td>
<td>-</td>
<td>-</td>
<td>19.72</td>
<td>19.72</td>
</tr>
<tr>
<td>Pathardi</td>
<td>-</td>
<td>-</td>
<td>16.72</td>
<td>16.72</td>
</tr>
<tr>
<td>Akole</td>
<td>-</td>
<td>-</td>
<td>19.02</td>
<td>19.02</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1299.68</strong></td>
<td><strong>125.71</strong></td>
<td><strong>578.24</strong></td>
<td><strong>2003.63</strong></td>
</tr>
</tbody>
</table>

(Source: District Industries Centre (DIC), Annual Report 2007-08, Ahmednagar)

Amongst the large scale industries in Ahmednagar are, Larsen and Toubro Ltd., Crompton Greaves Ltd., Kinetic Engineering, Videocon, Kirloskar Oil Engine Ltd., Advani Orlicon Ltd., Cummins Generator Technologies, Ahmednagar Forging Ltd. Indian Seamless metal Tubes Ltd., Sun Pharmaceuticals Ltd. With the development of large scale industries small scale industries also grew up speedily.

In order to support the entrepreneurs in their venture, District Industries Centre (DIC) was started in Maharashtra in 1978. DIC acts as a nodal body at the district to support especially small scale industries by bringing about the co-ordination between various government promotional agencies and financial agencies. With the effort of the DIC, MIDC and other government promotional agencies the small scale industries grew up speedily in the district. Thus, Ahmednagar has emerged as the one of the major industrial districts in the state of Maharashtra.
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