Chapter One

Introduction
1. INTRODUCTION

In a primarily agricultural country like India, a significant contribution to economic development and general prosperity is possible only through intensive operation in the field of agriculture and the development of agro-processing industries.

Economic prosperity of our country depends upon the integration of its agriculture with industry. The strategy of economic growth has to be such as it integrates rural and urban economies by reducing economic disparity and regional imbalances. Agro-processing industries are considered the most suitable agencies for achieving this. With the renewed emphasis on integrated rural development, the wide verities of agro-processing industries have bounced back to their rightful importance, from a spell of indifference and isolation.

State economy is basically an agrarian economy and development of this state largely depends on development of agriculture and agro-processing industries.

Agro-processing industries constitute the backbone of a developing economy like ours. These industries have became an invaluable weapon in bringing about a harmoniously balanced and integrated socio-economic development of the country. In the balanced growth of these industries, therefore, lies the hope of a speedy economic development of our country.
Agro-processing industries have much to contribute to the economic life of any developing country. They provide a base for a pattern of socio-economic development that can contribute to an all-round growth of the economy. They operate more as catalytic agents for development of agriculture and help in bridging the gap between rural and urban economies.

Strategies for overall economic development determine the role of agriculture during various phases of national development and the same is applicable to agro-processing industries. The agro-processing industries are linked with the farm operations. It increases the net income of primary producer. It provides greater local employment. Agro-processing industries contribute to development of dynamic rural institutions. It reduces rural-urban migration. This industry operates as a dynamic engine for development of regions, and contribute to the growth of entrepreneurship in the rural areas.

A well-planned agro-processing industry should be interdependent between agriculture and industry. This industry must be based on the raw materials provided by the agricultural sector. The surplus manpower must be absorbed by this industry. In order to enhance the production improved indigenous technology, as far as possible, should be used. It saves foreign exchange by avoiding the import of sophisticated machinery.
It was further believed that the development of agro-processing industries would "accompany" the development of the agricultural sector. Whether development of agro-processing industries initiates or causes agricultural development or is the result of the development of agriculture is a controversy of "Chicken-egg" type.

Agro-processing industry has now emerged as a dynamic force in the national economy and has pooled the knowledge, expertise and efforts of all the organizations concerned with its development.

According to Mathew E.T., "By processing we mean the work which changes raw materials into finished products. When applied to agriculture, it means the processing of agricultural produce or agricultural raw materials."

According to Kahlon and George, "processing may be broadly defined as those activities which involve the conversion of farm products into a more usable form." Agro-processing industry is a part of agro-based industry.

Industries manufacturing 'input' for agriculture, or processing agricultural 'output' or those industries which are supported by agricultural products are classified as agro-based industries.

According to Khot and Kamala (1966), "Agro-industries can be variously defined as: (i) industries where the contribution of agriculture in the gross value of the products is very high, (ii) industries with service agriculture and
(iii) industries which are engaged in the processing of agricultural commodities." Agricultural processing industries include sugar manufacturing, cotton ginning and pressing, rice, flour and oil milling, coffee, tea and tobacco curing, fruit canning and preservation etc.

Kamala and Khot defined agro-processing industries as, "those industries concerned with the conversion of agricultural raw materials into finished products."

Conceptually "Agro-industries" are the industries dependent, not only on the output of agriculture and allied activities, but also on the inputs in agriculture like agricultural equipment, fertilizers and pesticides. The planning commission has set forth criteria for distinguishing the Agro-industries; these are (i) which encourage greater input into agriculture (ii) which lead to better processing and conversion of agricultural commodities (iii) which ensure high returns on processed goods and/or (iv) which increase agricultural production.

In the words of V.K.Srivastava, the agro-industry is 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 safe life, create easily transportable forms, enhance nutritive value, and extract chemicals for other uses.
According to Aggarwal Y.P., "Agro-based industries can be broadly defined as those industries that are dependent upon agriculture for their raw materials and other basic inputs."

Many agricultural products such as milk, eggs, fruits and vegetables may be consumed in the form in which they exist. But agro-processing industry facilitates the conservation of surplus production of one season for use in another season or place. Processing for the purpose of preservation is important for these perishable farm products.

The greater part of the produce sold by farmers is now subject to further processing before it reaches the final consumer. For certain commodities like paddy, sugarcane, pulses, cotton, oilseed, etc. Processing is essential before they are used for consumption. The processing operations bring change in the character of the produce.

Processing is important both for the producer and the consumer. From the point of view of the producer, processing means larger income in the form of higher price for the processed product since processing adds farm utility and time utility to the raw produce. The attractiveness as well as the usefulness of the produce are considerably enhanced. It is this increased usefulness and attractiveness that fetch higher returns to the producer. It also helps in getting higher share in the consumer's rupee. This in turn, motivate the producer for better production and further opens up possibilities for industrial development. Consumer is interested in offering as low a price as possible for the quality and form desired by him.
There is a lot of scope for improving post-harvest life of agricultural commodities by processing them into diverse food products. Processed foods have a very high demand in both domestic and international markets. Growth of food processing industry will ensure better prices and prevent losses on account of perishing of food crops, fruits and vegetables.

A modernizing and industrializing society has to depend more and more on processed and semi-processed farm products. The income elasticity and demand for processed and semi-processed agricultural products such as canned and tinned fruits, vegetables, cream, butter, eggs, oils and fats, nuts etc. is higher than for cereals, pulses etc. in their raw form. The burden of meeting this increasing demand has to fall on a vibrant agro-processing industrial sector. In India, therefore, the agro-processing industries have a vast role and responsibility to foster an integrated and inter-linked development of agriculture and industry. The agro-processing industries, thus, offer a wide and viable field to promote occupational diversification in the villages and to expand and broaden the base of economic activity.

Now one might argue that processing involves additional work and expenditure for the producer and so there is no point in undertaking the processing of the raw produce and then selling it at a higher price. This argument is not valid for two reasons. In the first place, the farmer is not employed all the year round. There is unemployment and also underemployment. Hence, the problem of finding time does not arise.
For the work he does, the farmer gets wages as a labour. Secondly, over and above, the wages of the farmer is also entitled to a reasonable margin of profit for the entrepreneurial function he performs. Hence, there is nothing illogical in suggesting processing as a beneficial measure for the product.

Sometimes processing serves as an adjunct to the marketing operations, like transportation, storage and merchandising. It is also an economic device for relating a given supply of a commodity to a prevailing market demand situation by differentiating between uses and improving quality and prices of the produce so as to enhance the total revenue of the producer. In other words, processing of farm products widens the market in terms of the number of usage and consumers. Naturally, the importance of processing depends upon the nature of produce and the type of processing involved. According to Kahlon and George, the percentage of value added by processing to the total value produced at the farm level varies from nearly 7 per cent with respect to rice and wheat to 79 per cent for cotton and 86 per cent for tea. It is generally higher for commercial crops as compared to food crops.

According to V.K. Srivastava, agro-industries display unique characteristics of seasonality, perishability and variability which is derived from the raw material processed by them. The ground and tree crops, fisheries, and livestock undergo a reproductive cycle. Therefore, agro-industries have to procure raw material only in the season. While the processing operation continues for a larger period and the demand for the products is round the year. The raw materials
processed by these industries are often perishable (at least in the food processing industries), and therefore greater speed in handling, storage, and processing is required. Unlike in case of non-agro-industries, the raw materials obtained and processed by the agro-industries are often of varying quality.

In fact, in India processing of agricultural produce has been always suggested as a subsidiary industry which will enable the cultivator to supplement his meagre income from farming.

Agricultural processing industries are more labour intensive. Processing as the most suitable additional activity in the rural areas, offers vast scope for employment potential. Employment potential would depend on the decentralization of processing units and whether farming operations and processing are done simultaneously or at an interval. The growth of agro-processing industries helps in creating avenues for employment to the surplus agricultural labourers. This industry also engages the farmers in the productive areas during the off-season.

The agricultural processing industry can add value to the agricultural produce and thereby increasing the farmer's share in consumer's rupee. The objective of giving the maximum return of the agricultural produce to farmers can be best achieved by organizing the agricultural processing industries.
The important advantage of processing industry to the consumer include the convenience to the user, price stability and quality product.

The development of these industries lead to the economic progress of the region. It helps increase cash income, construction activities, number of educational institutions, and savings of the community reflecting in the increase in bank deposits. It also contributes to per capita income.

The growth of agro-processing industries helps in checking rural exodus, reinforcing social and co-operative bondage, gainful utilization of locally available resources and materials, as well as by-products which were hitherto discarded as a waste material. This has also led to meaningful diversification of the resources and their utilization. It provides a sound base for agro-industrial set-up in a developing country like India.

The food processing units should be established near the site of agro-produce to eliminate the cost of packing and transportation. There is an urgent need to use effectively the agro-food system as one of the means of socio-economic development. The socio-economic transformation is to generate more employment, prevent post harvest food losses, reduce the migration of people to urban centers, develop nutritious products based on primary food and improve export of agro-food products.
The food processing industries currently engage about 19 per cent of India's labour force and accounts for 18.8 per cent of industrial output. In Maharashtra, there were 1,008,300 full-time and 1,03,300 part-time engaged daily workers in food and allied industries in 1987. The share of food industries is around 10 per cent of the total industrial employment. The total employment in food industries was 31.8 million mandays.

Agro-processing industries are the cornerstone of economy of developing countries like India, and have well established roots in the indigenous economic environment. The wide spread unemployment and underemployment associated in the problem of migratory labour in developing countries can be met by the creation of extension of agro-processing industries. Agro-processing industries also have a large export potential. This industry contributes to export trade and earn an appreciable amount of foreign exchange. These industries can play the role of lead industry in rural development.

Agro-processing industries have an important role to play in evening out the supply of agricultural commodities. These industries may provide a stable level of prices and an assured market for farm products. Another function of processing industries relates to eliminate income disparities between rural and urban area. It also contributes indirectly towards agricultural production and productivity. The role of agro-processing industries in providing incentives, encouragement and guidance to farmers has been important.
The agro-processing industries provide an essential and crucial linkage between agriculture and large-scale industry, production and marketing, rural and urban areas, the owners and capital and labour and the producers and consumers. The dependence of one on the other and the backward and forward linkages between the agriculture and the industry are perhaps far more stronger in agro-processing industries than in others.

The agro-processing industries also provide a bridge between agriculture and industry, rural and urban cultures and population, for each others benefits and prosper.

The agro-processing industries should thus move faster and faster to play the role that is destined for it. It should move ahead to earners the vast potential that agricultural production offers to the mutual benefit of the two sectors and, ultimately, of the whole economy and of it's inhabitants.

India is predominantly an agricultural country. But the agrarian economy today presents, by and large, a picture of inefficiency and low productivity. Many factors like the growth of population, pressure on land, small size of holdings, breakdown of joint family system, inadequacy of capital and necessary infrastructure have made a cumulative effect on agrarian economy of the country. Due to excessive dependence on the agriculture, the land-man ratio is rapidly changing against agriculture. High pressure of population is breeding poverty against the agriculturists and the target growth in agricultural sector could not be achieved.
Notwithstanding the above facts and problems, the country's economy has been stagnant for a long time and it is in this context the role of agro-processing industries becomes of paramount importance. Experience has shown that in an agricultural country like ours, above mentioned problems can be solved when the agro-processing industries have come up in a big way and these developments are faster in rural areas. Yet, these processing industries have not received due recognition in the programmes and policies of our five year plans. A programme for the development of agro-processing industries needs recognition and acceptance as an integral part of a programme of national economic development. An integrated agro-industrial development is a dynamic and self generating process. These industries have become an invaluable weapon in bringing into existence a harmoniously balanced integrated socio-economic order in the world economy.

It is clear from this discussion that agro-processing industries have the capacity to transform and modernize the agricultural sector and become the nucleus for more widespread development.
1.1 OBJECTIVES OF AGRO INDUSTRIES

The primary object of developing agro-industries in developing countries like India is to extend work opportunities, raise income and standard of living, and to bring about a more balanced integrated economy. Its importance in the economic development of developing countries cannot be ignored. They provide employment in the villages itself, find means of livelihood for the largest number of persons, offer opportunities for profitable employment and the development of inherent talent and aptitude in occupation which should be congenial to them. Following are the objectives of agro-industries in developing countries like India.

1) Integration of Agriculture with Industry:

The most important objective for the development of agro-industries in developing countries like India is that these industries integrate agriculture with industry, which is a pre-requisite for the prosperity of developing countries. Taking away a few millions of people from villages to industrial cities would not remove the fundamental handicap of increasing pressure of population on agricultural sector of the country, lack of employment opportunities in rural areas and the resultant limitations on equitable distribution of national income and wealth. Therefore, the strategy of economic growth has to be such that it should integrate the rural and urban sector without the regional imbalances. This would be achieved by inducing agro-industries in rural economy of developing countries in a big way.
2) Employment potential :-

Another important objective is that they provide new avenues of employment at a relatively small capital input. They also serve as a means for providing better employment opportunities to the labour during off-seasons. These industries are not only labour intensive but also hold out promise of relatively high propensity to save as compared to large industries. But it would be wrong to say that agro-industries are capital saving and labour intensive. But agro-industries, at relatively small capital investments, can generate many economic benefits to the nation including creation of new employment. According to the F.A.O., these industries provide almost 2/3 of the employment in the developing countries.

The most significant feature of agro-industries is that they can create employment opportunities in those areas which are convenient suitable for the location of small scale industries. Apart from providing new ways and means of employment in the rural areas of developing countries, these industries are also useful in facilitating the expansion of creative skill and in maintaining the traditional skill and efficiency of artisans. While employment potential is an important point in favor of agro-industries this cannot be accepted as the main objective of agro-industrial development. The value added by these industries should be efficient and competitive.
3) Capital light :-

Another important objective is that they are capital light i.e. they need relatively smaller amount of capital than is required by the large scale industries. The capital-output ratio is much smaller in case of the former. A given amount of capital invested in agro-industries is likely to provide more employment at least in the short run, than the small amount of capital invested in large scale industries. Thus, one of the greatest advantages of agro-industrial development is to maximise the use of capital. As it is very scarce in an under developed country, it may be used to greater advantage in the early stages of development.

(4) Import light :-

The fourth important objective of agro-industrial development is that these industries are import light i.e. they are relatively in low proportion of imported equipment and materials as compared with the total amount of capital used in large industries. A low import intensity in the capital structure of agro-industries reduces the need for foreign capital or foreign exchange earning, which can be used to fulfill the requirement of other sectors.

(5) Total value added :-

Another important objective of agro-industries is low cost production. The cost of production in these industries is found to be significantly low as compared to other industries. According to an estimate by United Nations Food and
Agriculture Organization (FAO) these industries accounted for about half of the total value in the total value added in the developing countries.

(6) **Entrepreneurship** :-

The promotion of indigenous entrepreneurship is one of the important objectives of agro-industries, paucity of entrepreneurial talents is the basic handicap of agro-industrial development in developing countries. The development of indigenous entrepreneurship is a time consuming process. The solution to this problem is a joint venture with foreign collaboration. It is admitted on all counts that these agro-industries are good nurseries of the growth of indigenous entrepreneurship.

(7) **Even distribution of Income and Wealth** :-

One of the special features of agro-industries is that they secure a more even distribution of income and wealth, and there will be no concentration of wealth. In this process, agro-industries play a vital role.

(8) **Industrial dispersal** :-

Another important objective of agro-industries is that they have greater location flexibility and more comprehensive in the sense that they are better in satisfying the aspirations for balanced regional development. These industries are considered as a main tool for industrial dispersal. In today's world the big cities of developing countries are incapable of absorbing more industries and, therefore industrial dispersal has become an economic necessity.
With the frequent shortage of electricity, water, skilled labour, housing, transport etc. in big cities of the developing countries, agro-industries are forced to locate in rural areas and thus have become the obvious tools for industrial dispersal.

(9) Infrastructure :-

Another objective of agro-industries development is that these industries operate as catalytic agents for the development of infra-structure, which would bridge the gap between the rural and urban economy. It will help for occupational shifts and for creating new social groupings which would form the basis for creation of desired social, cultural and psychological premises for modern industrial society.

(10) Capital formation :-

Another important objective of agro-industries development is the capital formation. These industries do not have access to institutional finance. They get established with small savings within the family group and farm investments, which would not have normally given into production activities.

Thus, the establishment and growth of these industries are set in motion the process of capital formation in the developing countries. Approximately 80 per cent of the total population of India live in rural areas and they don’t have proper ways and means of channalising the savings, the easy solution to this problem is to induce agro-industries in a big way.
To sum up, it may be said that these industries hold great future for the economic prosperity of rural and backward area of developing countries, particularly in view of their high linkage effects, employment potentialities, and capabilities and sustaining rapid transforming rural economy.
Development of agro-processing industries has assumed a crucial importance in the economic progress and planning of Maharashtra state. A well planned development of agro-processing industries in Maharashtra will have a very healthy impact on agriculture and allied activities on which nearly two-third population depends at present and earns about one-third of the total income. The phenomenal progress of sugar industries in Maharashtra and its impact on the rural economy has demonstrated the importance of agro-processing industries.

The conspicuous feature of Maharashtra state is the concentration of industries in a very small areas mainly in Bombay, Poona, Thane and Nasik regions and lack of development of industries in the rest of Maharashtra. Industrial prosperity of Maharashtra is mainly due to the industrial development in Bombay, Poona, Thane and Nasik regions and the rest of Maharashtra is under-developed. The overcrowding of population and concentration of industries in Bombay, Poona, Thane and Nasik regions have given rise to numerous problems viz. housing, transport, water supply, drainage, and slums have become very acute, and adversely affected its social, cultural and industrial life. These facts and particularly, the under-developed character of the rest of Maharashtra, rich in various types of cash crops i.e. Sugarcane, Cotton, pulses, oil-seeds etc. emphasises on the importance of agro-processing industries in the economy of Maharashtra.
(1) Upliftment of rural economy:

Agro-processing industries have to be set up in the rural areas where the raw material are available in plenty, which helps in the upliftment of rural economy by providing employment opportunities to rural youth, resulting in increase of income, transportation, construction activities, number of educational institutions etc.

(2) Opportunities for employment:

During the last two decades, the most important problem is of unemployment and particularly that of disguised unemployment which is an increasing trend. The addition of the labour force unmatched by similar increase in employment opportunities highlights the vital importance of expanding employment opportunity through rapid rural industrialization and the growth of agro-processing industries helps in creating avenues for employment to the unemployed rural youth.

(3) Income Generation:

These industries enable the farmer to supplement his meagre income from farming. Setting up of agro-processing industries in the rural areas will generate income by providing employment opportunities to the unemployed youth, providing off-season employment to farmers and it increases farmers share in consumers rupee. These industries give maximum return of the agricultural produce to the farmers which in turn improve the economic condition of the rural people.
(4) Dispersal of Industries:

The conspicuous feature of our economy is the concentration of industries in a particular area and the lack of industries in the rest of area. The overcrowding of industries in a particular area raises to various problems such as shortage of housing, burden on transportation, shortage of water-supply and many others. This can be avoided by dispersal of industries in rural areas. Agro-processing industries provide an opportunity for the decentralization and dispersal of industries instead of concentrating industries in a particular area.

(5) Solution for exploitation:

Farmers can be exploited by agents, traders and middlemen by using various means i.e. paying less price, higher commission, providing loans with higher interest and showing less weight for the produce etc. Establishment of Agro-processing industries will solve the problem of exploitation of farming community by agents, traders and middlemen.

(6) Better price for the produce:

It is the agricultural produce that is absorbed by the nearby industries. The farmers could be assured of better price for their produce. Transportation and storage cost and commission of agents can be minimized. This will encourage the farming community to bring more and more areas under various crops which may increase the agricultural production and improve national economy.
(7) Minimizing expenditure:

Most of the agricultural produce is bulky and heavy and occupy more space so that storage cost will be higher for those produce. The transport costs from one place to another will be higher for these agricultural produce. If such produces are processed or utilized in the nearby industries, the transportation and storage cost can be minimized thereby helping to minimize the cost of finished goods.

(8) Useful for perishable produce:

Another important factor which has to be considered is the perishable nature of the agricultural produce, for example, vegetables and fruits. If these produces are processed in the nearby industries, it will avoid wastage, and losses will be minimized. If the produce like sugarcane is transported from one place to another because of the time lag is more in crushing the sugarcane, the sugar content will be affected. Therefore, it is better to process the raw materials at source in order to avoid wastage of perishable produce.

(9) Help in Rural Industrialization:

Development of rural industry is a major economic and social objective of the Indian plan of economic development. Rural Industrialisation can solve the problem of vast rural unemployment, disguised unemployment and extreme poverty. It helps in increasing the standard of living of the rural community. Agro-processing industries will help increase the
agricultural production and processing agricultural produce thereby creating the demand for a number of industries which, in turn, helps the industrialization of our country. It results in rapid industrial growth in rural areas.

(10) Prevent migration :-

Migration can be possible if there is no employment opportunities and income is stopped. Agro-processing industries help in the development of backward areas by providing employment opportunities and these industries help support meagre income from farming so that migration of workforce from rural to urban areas can be prevented by establishing agro-processing industries.

(11) Prevent inequalities :-

Development of agro-processing industries in rural areas reduces the inequitable distribution of both income and economic opportunities in the different parts and section of the population.

In view of the importance of agro-processing industries in the economy of developing countries like India, the strategy of planning should be reoriented, so as to lay more emphasis on the development of such industries and a large proportion of the outlay should be spent on the furtherance of agro-industrial development.
In Maharashtra, there is lot of scope for the development of agro-processing industries which are dependent on the input in agriculture. Maharashtra has a vast area predominantly under agriculture and its different parts vary in climate, rainfall, fertility and topography. Maharashtra, therefore, produces:

1) different types of crops like rice, millets, wheat, maize, cotton, sugarcane, groundnut and other oilseeds.

2) different types of fruits like grapes, banana, mango, oranges and citrus fruits, cashew-nut, arecanut, coconut, papaya and pineapple.

3) different type of vegetables like potato, onion, brinjal and tomato.

There is an appreciable scope for increasing production of these cash crops and products and for developing on a rational and sound footing, various types of existing and new processing and manufacturing industries based on the same and on the by-products of these, such as cotton textile (spinning and weaving), cotton seed oil, surgical cotton, sugar, sugarcane-wax, fore-pressing-cum-extraction of oilseeds, etc. There is also great scope to develop very easily various types of simple processing activities like husking of paddy or crushing of groundnut for making the produce fit for consumption or it being used as industrial raw material or canning or bottling of fruits and vegetables for the purpose of facilitating the preservation of the produce and its transportation over larger distance.
1.3 CLASSIFICATION OF AGRO-PROCESSING INDUSTRY

According to Kamala and Khot (1966), Agro-Processing industries fall into two broad categories: 1) Primary processing, and 2) Secondary processing. Primary processing industries are industries which are engaged in the first stage of processing, such as sugar, gur and khandsari manufacturing; coffee, tea and tobacco currying; fruit and vegetable processing; cotton ginning; jute baling; rice, dal and flour milling, etc. Secondary processing industries are industries which are engaged in the further stage of processing or more sophisticated treatment of the product or in the utilization of by-products; examples of those are: bakery and confectionary; cigarette manufacturing; cotton spinning and weaving; vanaspati manufacturing.

This primary processing level needs further explanation. Primary processing is carried out by the sector: one "traditional" and the other "modern". The traditional processing can be distinguished from the modern processing on the basis of: i) the type of technology, ii) the coverage of markets served, iii) linkages with the rest of the economy both backward and forward. The traditional processing, as is well known, is primarily concerned with the processing local raw materials for serving local markets, with simple techniques with the result that its scope for the development of links with the rest of the economy is either wholly absent or is very much restricted. In other words, the traditional processing functions on a subsistence as well as in an isolated manner. On the other hand, the modernisation in processing connotes processing of agricultural raw materials by the modern mill sector. This
sector, as can be readily seen, uses a technology which enables this sector to serve longer markets and develops vital links with the rest of the economy and it forms an integral part of the agro-industrial economy.

When it is stated that modernisation of processing industries will be instrumental in modernising agriculture and in developing the region, it refers to modernisation at the primary processing level. Such a type of development effect is possible since most of the primary processing industries cannot be separated from their source of raw material without harming the cause of both the processors and the growers of raw materials because of their perishable nature requiring immediate processing in nearby area.

According to Srivastava U.K., as the products of agro-industries are both edible and non-edible, the agro-industries can be classified as agro-food industries (or merely food processing industries) and agro-non-food industries.

According to Aggarwal Y.P., agro-based industries can be classified into two categories namely food processing industries and non-food processing industries. Food processing industries mainly increase the quality of food through preservation of perishable products and utilization of by-products for other purposes and thus satisfy a demand for food. This type of industry includes the processing of wheat, rice, maize, barley, pulses, oilseeds, meat, dairy products, fruits and vegetables etc. Non-food industries mainly satisfy our need for shelter and clothing. These industries produce such items as cotton, wool, rubber, leather etc. The main difference between food processing
and non-food processing industries is that the latter lends itself to higher degree of processing and hence the value added is more than the food processing industries. Agro-based industries can be classified into following four categories. 1) Food, Beverages and Tobacco 2) Textiles 3) Wood and Furniture 4) Leather and Rubber products.

According to Jain B.K.S. the industries can be divided into two parts—the inputs and the outputs. The agricultural inputs mainly include farm equipment, seeds, fertilizers and pesticides. The industry covers a wide range of items including tractors, agricultural machinery, power tillers, trailers, engines, motors, pumps, sprinkler irrigation, plant protection equipment, hand-tools, etc. The industry dealing with agricultural outputs covers handling, storage and processing of agricultural produce.

According to Mani S., the industries can be broadly classified into four groups viz. 1) Resource-based, 2) Demand-based, 3) Skill-Based 4) Ancillary.

Resource based industries are industries which utilize the available resources (agriculture, mineral, marine etc) as the main raw material.

Demand based industries are industries which are established to meet the growing demand of the country (steel, Copper etc.)

Skill based industries are those which require the special skill (Nuclear fuel complex).

Ancillary industries are the one which feed the major or many industries (automobile parts, battery etc.).
Resource based industries can be further divided into a number of categories such as a) Agro based b) forest based c) mineral based d) marine based e) animals based.

**AGRO-BASED INDUSTRIES:**

Agro based industries are those industries which have either direct or indirect link with agriculture. In other words industries which are based on agricultural produce and industries which feed the agriculture by supplying inputs can be called as agro-based industries. Agro-based industries can be broadly classified into the following categories.

**Agro-Produce Processing Units:**

The produce obtained from agriculture is simply processed so as to get product which will be almost similar to the produce obtained originally. These industries do not manufacture only new product but merely process the produce so as to preserve easily and at a minimum transport cost. Examples of industries falling under this category may be rice mills, seeds preparation units etc.

**Agro-Produce Manufacturing Units:**

In this type, the industries manufacture entirely a new product from the agriculture produce which is used as main raw material. The finished goods will be entirely different from the original raw materials, Maize processing units to manufacture starch, glucose etc., Sugar factories, Sago and tapioca starch manufacturing units, straw board units, paper plants and solvent extraction plants fall under this category.
Agro inputs manufacturing units:

These units manufacture the goods for farm mechanization for increasing the productivity of agriculture. This category of industries directly support the agriculture at various stages. Examples of this type are manufacture of pesticides, fertilizers, tractors and agricultural implements etc.

Agro-Service centers:

Agro service centers are the units engaged in the repairing and servicing of tractors, power tillers, sprayers etc. They also undertake the spraying work and supply the necessary agricultural inputs to the farmers.
1.4 LOCATION OF AGRO-PROCESSING INDUSTRIES

In recent years, economists have drawn attention of the society about metropolitan agglomeration of industries and said that agro-processing industries can play the useful role in diversification of industries in rural areas. Many economists believed that agro-processing industries have locational advantage near the source of raw materials. A thorough investigation of the locational economics of the industries becomes all the necessary. Agro-processing industries are amenable and more viable to be located nearer to the source of raw material allowing spatial distribution of industries (reducing the regional disparities in industrialisation).

Economic and historical consideration such as availability of raw materials, power, accessibility to markets and finance, cost and efficiency in production and distribution chiefly influence the choice of a particular locality for establishing industry.

Processing industries should be located in relatively high production areas where an adequate marketable surplus is available and a supply industry should be attracted by a good actual or potential demand for a particular input.

According to S. Mani, establishment of agro-processing industries at a particular place in most of the cases is based on the availability of agricultural raw material. As the agro-processing industries have to be set up at rural areas where the raw material may be available in plenty, which helps in the upliftment of the rural economy.
Gopal Bhargava has given criteria for the establishment of agro-industries centres. He has strongly advocated the development of agro-industrial towns, where one can find all amenities of rural and urban in a unified form. Below criteria for the establishment of agro-industrial centre are discussed.

1) Demographic factors: The small towns with a population ranging from 5000 to 10000 and 10000 to 20000 should be taken up for the purpose of agro-industrial development.

2) Demographic section on occupational structural pattern:
This needs a check up of census to diagnose the already existing occupational pattern in various economic activities. The check should tell the relationship of primary, secondary and tertiary sectors of the centres which would be considered for agro-industrial development.

3) The locational proximity to an established urban industrial centre: The agro-industrial centre should have two functional spatial dimensions, first of all, it should have proximity to the rural adjoining areas and secondly, it should be in proximity to the urbanised industrial centres. This approximation in spatial location would inspire the agro-industrial centres to accelerate the rate of growth of their economic activities.

4) Possibilities of electrification, provision of water supply and communications: Electricity can be made available through transmission grid from the urban industrial areas. This would open out immense possibilities which would lead
to the opening of factories and agricultural processing establishments away from the congested urban centres and in this way the migration from rural areas to urban areas would be checked.

5) Agro-Industrial development oriented towards socialistic pattern of society: The administration and economic control of the small towns of agro-industrial economic base has to be administered with a pragmatic approach.

6) Selection of technical personnel for stimulating agro-industrial development: All this type of manpower in specialised field would enable the agro-industrial centres to function as specialised units.

7) Centres of training: Centres of training should be set-up for unskilled labour so that they can spontaneously yield higher productivity.

8) A reasonable pay for all: The distribution of the wealth of the agro-industrial centres should be distributed in accordance with the working capacities of workers and their share in the total wealth. The workers' wages must be related to the cost of living index. Reasonable wages and salaries should be able to attract better talent.

9) Market organisational System: The agro-industrial centre should be equipped with a good market organisation.

10) Establishment of regional planning development committee for agro-industrial centre: The regional planning development committee for agro-industrial development may comprise:

   a) Chief administrator from central government
   b) representation-
tive from the central power commission c) Chief representative of the region d) town planner with engineering background e) industrial planner f) geographer-cum-pedologist g) geologist h) economist who has thorough knowledge of the region.

Thus, it is of dire necessity to have an organisational body of experts within the different states for the effective agro-industrial development prospects. A proper infrastructural and socio-economic base of amenities is required for enabling the small towns to efficiently act as the centres with a view to accelerate the agro-industrial developmental possibilities. The process of agro-industrial development in India would enable the economy to achieve a high rate of capital formation and thereby the Indian economy will flourish.

In Maharashtra and particularly in Marathwada region, agro-based industries are mainly crop based like oilseeds, pulses, cotton and sugarcane. Thus an attempt has been made to assess cropping pattern, performance of these crops, estimate cost of production of an individual crop and examine the cost and return of the processed products.
1.5 OBJECTIVES OF THE PRESENT STUDY

The study "Agro-processing industries in Marathwada region of Maharashtra State" in mainly envisaged to identify the existing major resources or raw materials available for agro-processing industries in the region. On the basis of resource study, the prospects for agro-based industries in the region has been identified.

The agro-processing industries in the region are mainly based on oilseeds, pulses, cotton and sugarcane crops. A detailed study of these crops and industries based on them has been carried out with the following specific objectives.

1. TO STUDY THE CROPPING PATTERN OF DIFFERENT DISTRICTS OF THE REGION.

The existence of the agro-processing industry is mainly based on the cropping pattern of the region. It shows the share of each crop in the gross cropped area. The study of cropping pattern helps to identify the major crops in the region under study.

2. TO STUDY THE PERFORMANCE OF SELECTED CROPS DURING THE PERIOD 1960-61 TO 1989-90.

The future of agro-processing industry is mainly based on the performance of a crop. The performance is examined in terms of area, production and productivity. Thus, it is important to examine the performance of a crop for a particular period to see whether the performance is satisfactory or otherwise.
3. TO STUDY THE SOCIO-ECONOMIC CHARACTERISTICS OF SELECTED FARM FAMILIES.

Performance of a crop mainly depends on the attitude of the cultivator. He is the backbone of agriculture. Thus, it is important to study the general socio-economic characteristics of cultivators under study.

4. TO FIND OUT THE COST OF PRODUCTION OF THE SELECTED CROPS ON CULTIVATOR’S FIELD.

Profitability of a crop is an important criteria for getting increased production. Profitability depends upon input utilization, cost of production, total output and net income gained from the crop. Higher the production with lower per unit cost is an ideal situation for growth of agro-processing industry. Thus, it is important to examine cost of production of a crop.

5. TO STUDY THE PROCESSING COST AND FIND OUT THE PROFITABILITY AFTER PROCESSING.

Profitability is the main criteria for the existence and prosperity of an industry. It is important to know the cost incurred on different processing items, main and by-produce gained from raw material used and ultimate price of the main and by-produce obtained in the market. Thus, to examine input-output ratio of an industry is essential.

6. TO EXAMINE PROSPECTS FOR AGRO-BASED INDUSTRIES IN MARATHWADA REGION.

Prospects for the agro-processing industries in the region based on oilseeds, pulses, cotton and sugarcane crops have been examined in detail. Similarly, related, supporting, complementary, supplementary industries have been identified and a list of such industries is documented.

Thus, in all, six objectives have been considered for study.