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CHAPTER I

APPRAISAL OF THE PROBLEM

1.1 INTRODUCTION

The term ‘Industry’ in its widest sense refers to all economics activities. Industries can be classified into three major groups-primary, secondary and tertiary which have many sub-divisions amongst them again.

The word ‘Industry’ is loosely used to denote a vast range of human activities which are economically gaining and undergone the process of production. The term ‘Industry’ is often used by itself to denote manufacturing.

The term ‘manufacturing’ includes those activities concerned with the processing and altering of raw materials and semi-finished products into finished products. These transforming operations are conducted in factories to which are brought raw materials from various source regions and from which go finished products to diverse market regions.

Another important principle of manufacturing is that the more processing and altering a material is subjected to, the more valuable it becomes. In this sense manufacturing may be defined as “the processing of raw material to enhance its value.”

An industry is a group of enterprises who came together or united for common purposes. “The processing of raw materials to exchange its value” is another sense in which we use the term ‘industry’.

A very few of the primary products of agriculture, fishing, forestry, mining and animal etc. are in the forms in which man can use them directly. They have to pass through a process before coming to the form as required by man. The various processing steps undertaken by man for converting the unprocessed primary products (raw materials) into articles of utility may be called as industrial activity and the sites at which raw- materials are processed are termed as factories. In other words, industry involves in the production of consumer and producer goods, especially in factories.

The term ‘industry’ in a border sense, then, is quite flexible and embraces all these economic activities whereby goods are extracted from the earth, they are transformed into useful finished products and finally taken them away from the production centre’s to the market.
To overcome the confusion of range of economic activities and for the convenience of study, geographers usually use the term ‘industry’ in its strict sense to describe the activities in the secondary sector and particularly concerned with manufacturing (an economic activity involves mechanical processing of raw materials and assembly of produced part to give them more useful, value added form), which excludes agriculture and mining.

Therefore on the basis this meaning (according to the operational process that term industry uses) industry can be classified into four groups—extracting, processing, assembling and servicing. Each group requires specific inputs (raw material, capital, labour, water) from specific sources for its operations and provides specific outputs for purchase in specific markets and market areas.

Besides above, the term ‘industry’ refers mainly to manufacturing activity and the essential function of it is the transformation of material or materials into a product which is of greater value than the original materials. The purpose of manufacturing industry is to alter and to process materials so that they serve new ends and satisfy different requirements.

The term ‘industry’ refers mainly to manufacturing activity, agriculture, and mining and most other services are excluded from it. And it is in this sense that the term ‘industry’ will be mainly used in the present study.

1.2 MEANING OF AGRO-INDUSTRIES

‘Agro-industries’ include industrial activities based on the processing of agricultural raw materials and on the manufacture of products required for the land, and its people. The agro industries are those industries which are linked with, and are set up to meet the needs of the agriculture. Actually all industries draw their raw materials from agriculture.

The term ‘Agro-industries,’ may be defined as those industries which are dependent on agriculture and draw their raw materials from agriculture, horticulture and Sericulture, etc. which create supplementary sources of employment in addition to agriculture and allied activities.

Conceptually ‘agro-industries’ are those industries depend not only on the out-put of agriculture and allied activities, but also on the inputs in agriculture like agriculture equipment, fertilizers and pesticides.
The concept of ‘agro-industries’ is not however, new although the term is recent. Formerly they referred to industries which survived in rural areas and which had either a direct or an indirect link with population in the rural areas.

The ‘Agro-industries’ also includes the various production units engaged in processing the agricultural produce such as wheat milling, rice mills, dal mills, oil crushing, cotton ginning, sugar and khandsari units, jaggery, tobacco manufacturing, bidi, cigarette, canning and preservation of fruits and vegetables and so on. It can be safely deduced that ‘Agro-industries’ have both forward and backward linkages.

The definition given by Units Nations Industrial Development Organization (UNIDO) is based on functional criteria and establishes a fairly sound basis for the understanding of the term. According to the UNIDO, the term ‘Agro-industries’ signifies those industries which use raw manufactured goods are produced on a commercial scale. The agriculture as used in this context also includes fisheries and forestry and in certain cases, the term ‘Agro-based industries’ is also used to describe these industries.

The term ‘Agro-industries’ as referred to in the national context applies to ‘those industries which are contributing for the development of agriculture including agricultural produce’ these are further clarified as input based industries, such as fertilizers and pesticides, and output based industries, such as rice milling, paper products and leather products.

The ‘Agro-industries’ can be defined as those industries which are dependent on agriculture and or on which agriculture is dependent. It can be further elucidated as those industries which utilize the agricultural produce for processing/fabrication of various products, process/ fabricate inputs used for agricultural production depend on agriculture for production, help in protection of agricultural produce, and utilize agricultural by-products and waste products for processing / fabrication of products used in agricultural production or commercial purposes.
1.3 CLASSIFICATION OF AGRO-INDUSTRIES

The Agro-industries can be classified into the following categories, namely

1) Agro-based industries; b) Agro-allied industries; c) Agro-related industries; and
d) Agro-service industries.

a) Agro-based industries: These industries utilize raw material from agriculture the main material for processing / fabrication of various products. The industries which come under this category are: (i) Grain milling; (ii) Processed cereals, pulses, oilseeds, tap roots and tuber crops; (iii) Processed fruits and vegetables; (iv) Sugar; (v) Tobacco products; (vi) Spices and condiments; (vii) Milk and Milk Products; (viii) Meat, fish and poultry products; (ix) Brewery; (x) Agro-based pharmaceutical and cosmetic products; (xi) Natural perfumery products; (xii) Natural colours, flavours and preservatives; (xiii) Cotton textiles; (xiv) Leather and leather products; (xv) Wood processing and wood products; (xvi) Natural gums and resins; (xvii) Jute and coir products; (xviii) Paper and paper products; (xix) Surgical cotton and bandages; (xx) Drying oil for paints; (xxi) Natural rubber and their products; and (xxii) Wool and woolen products.

b) Agro-allied industries / Agro-inputs industries: These industries process / fabricate inputs used for agricultural production. These are i) Chemical fertilizers; ii) Biofertilisers; iii) Agricultural machinery and tractors; iv) Pesticides; v) Poultry equipment; vi) Seeds and other propagation material; vii) Soil amendments; and viii) Irrigation and drainage material such as tiles and pipes.

c) Agro-related industries: The industries which are dependent on agriculture (such as sericulture and apiculture), utilize by products or waste material for production of either inputs for agriculture or commerce (such as compost, feed and oil bran) or help in protection of agricultural produce, such as packing, warehousing, cold storage come under this category. These are: i) Bee-keeping; ii) Sericulture; iii) Lac culture; iv) Animal feeds; v) Composting; vi) Packing; vii) Cold storage and refrigeration; viii) Warehousing, storage bins and silos; ix) Oil bran; x) Active carbon and particle board from husk and coconut shell; xi) Furfural from corn cobs; xii) Paper and board from groundnut shell; xiii) Cement for masonry mortar work husk; xiv) Cashew nut
shell and shell liquid; xv) Alcohol; xvi) Bees wax and products; and xvii) Animal casings, surgical sutures, brushes, ghee, buttons, handles, combs, horn meal and foam components made from animal by-products.

d) Agro-service industries: These industries are concerned with the organization of services and custom hiring for effective agricultural operations. Areas covered under this category are: i) Land development; ii) Water management; iii) community nursery and storage; vi) Tube-well drilling; vii) Repair, overhaul and supply of spare parts; and viii) Crop protection services.

1.4 SIGNIFICANCE OF AGRO-BASED INDUSTRIES

India lives in villages. The agriculture and allied sectors contribute nearly 22 per cent of Gross Domestic Product (GDP OF India), while about 65-70 per cent of the population is dependent on agriculture for their livelihood. Agricultural produce forms the back-bone in providing the basic raw materials to several industries all over the country.

Developing countries are characterized by large population, mostly dependent on agriculture, unemployment, poverty and underemployment. These countries are inhabited by poor people with low levels of living, lack of capital resources and managerial skill. According to J.P.Lewis, the dangers of unemployment and ‘low-end-poverty’ look ‘most inflammmable’ in the large towns and cities, and the countryside appears comparatively uniform in its backwardness. Rural poverty becomes ‘explosive’ as agriculture spins off its excess population into the large towns and cities but the modernized sectors there cannot fruitfully absorb that population with the result that it is constrained to live there in ‘accumulated misery’ shorn of ability of incentive to its places of origin. But this is true not only of India but also of several western countries. South Italy has experienced for long a high rate of population growth and immigration on a mass scale. The rural areas in North Italy have suffered from demographic and economic depletion. On the contrary, Rome and northern industrial belts have been faced with excessive concentration of population and activities. In France, migration from the rural to the industrial regions has been on increase. In Germany, there has occurred an enormous exodus of population from the rural to urban areas, causing disequilibrium in the settlement pattern. The United States of America has depressed areas in the
countryside on account of mechanization of agriculture, depletion of natural resources, and lack of jobs, adverse climatic conditions and distance from the major market centers’. Migration of the cream of the rural society to the big towns and cities owing to limited employment opportunities leads to its further impoverishment and deprivation besides producing an injurious effect on those towns and cities.

The solution lies in a systematic planning of idle man-power in each village. This should require a highly decentralized development of rural industries particularly the agro-based industries for meeting the local needs by introducing higher productive techniques and labour intensive small-scale projects of rural industrialization. The remedy for eradicating poverty and unemployment lies in taking industry to agriculture. This will have a multiplier effect by creating new avenues of employment. The emergence of new agro-industries will definitely change the rural complex and will provide additional source of livelihood, social amenities and effective community organization.

The increasing population of the world in developed as well as underdeveloped countries cannot be fully engaged in large scale industries. They can also be absorbed by the decentralized small units of agro-industries to a large extent. These industries can be run as ancillaries and subsidiaries to add to their earnings. By relieving the pressure of population on land they help to raise average productivity. They can also provide the basis for an essentially decentralized economy. The incidence of costs, such as overheads, interest on capital invested, depreciation on machineries, heavy cost of distribution etc. is relatively low in agro-industries and as such they are the most suitable industrial enterprises for the developing economies.

Rural industries particularly agro-industries play an important role not only in the developing countries but also in some of the advanced countries of the world. Small industries, employing less than 50 people each, constitute more than 98 per cent of all industrial establishments and produce about one third of all manufactured goods in the United States. In Japan, industrial units in the small sector account for over 99 per cent of all enterprises, employing 83 per cent of the total workers and yielding 55 per cent of the output. About 90 per cent of the West Germany establishments, each having less than 100 employees, claim 27 per cent of the total number of industrial workers and 23 per cent of the total output. If this is reported by the best
industrialized countries of the world, the case for small-scale industries particularly of agro-industries for developing countries like India is move justified.

Developing countries have no subsidiary industries to engage the manpower, but the peasantry of other farming countries is more fortunate in this respect. Agro-industries assume great significance in an economic prosperity of the nation, would, depend upon integration of its agriculture with industry. Hence, the bulk of our population and their emancipation from evils arising out of economic imbalance would depend upon how best we diversity our rural economy. Small farmers and individual farm ownership are economic realities with which we have to live for a very good future. Taking away a few million of people from village to the industrial cities would not remove the fundamental problems of increasing pressure of population on land. Lack of employment opportunities in the rural areas and unequal distribution of national income responsible for economic distortions are the two main problems before us. Our strategy of economic growth has, therefore, to be such that it integrates rural and urban economics by eliminating regional imbalances.

The micro and small enterprises (MSEs) sector provides livelihood, checks rural-urban migrations, generates export earnings, and touches upon the lives of the remotest and most marginalized people. Worldwide, MSMEs have been recognized as engines of economic growth. In India, MSEs (till recently, known as village and small enterprises) are, instruments of inclusive growth which touch upon the lives of the most vulnerable, the most marginalized—woman, Muslims, SCs, and STs and the most skilled being the largest source of employment after agriculture. The following points will explain the significance of agro-based industries for the development of rural areas.

1) Growth of employment

Agro-based industries develop human resources through the employment of the technically skilled and the semi skilled workers of the region along with the managerial staff. They promote local entrepreneurship, generate employment and provide jobs for rural workers and put a check on the migration of rural labour to urban areas. The role of agro-industries is immense in fostering, strong linkages between agriculture and industry and thereby accelerating the process of industrialization in the rural areas. The progress in the agriculture sector not only
provides food grains to the people but also brings about progress in the field of industry.

2) Industrialization of the rural areas

Industrialization of the rural area can be achieved by taking industries in the rural areas on the large scale. For this purpose the industries can play a very important role. Agro-industry in our countryside holds great promise to bring about substantial improvement in the quality of life of rural people. Agro-industries, if they setups on the large scale in the rural areas. It purifies the rural atmosphere and brings about the desired social and economic changes. That’s why the policy makers have laid emphasis on the rural development. The following points would be emphasized in this regard.

a) They bring prosperity of the rural areas as well as scope for saving and investment and provide incentives for rural areas.

b) Direct investment into rural sector is likely to build up the industrial base.

c) Regulating investment for exploiting inter-industry linkages as well as for increasing productivity for labour and capital.

d) Ameliorating the lost of the rural poor and other deprived classes of the society.

Our planner’s emphasis to achieving the aforesaid objectives in quite justified in the wake of widening rural urban disparities.

3) Interlinking between agriculture and industry

A developing country should have an integrated and coordinated plan to achieve balanced economic growth with proper emphasis on both agriculture and industry. Development of industries cannot progress beyond a certain stage without the assistance of agriculture. Likewise, agricultural development beyond a certain stage is subject to industrial development. Industry depends upon agriculture for labour force, raw materials and foreign exchange required to import industrial machinery through the agricultural exports. A prosperous agricultural sector provides market for industrial products. Industry, in its turn, fosters agricultural growth by providing fertilizers, pesticides, various agricultural implements, tractors, etc. further it will siphon off excess labour force from overcrowded agricultural sector and thus help to increase agricultural productivity. This is to say, surplus population depending upon land for their livelihood will be
absorbed by the industrial sector and thus facilitate increased yield from land. Thus agricultural and industrial sectors are interlinked and interdependent and in the process of economic development they exert profound influence on each other.

Agriculture and industry are complementary to each other; industrial expansion depends on increase in agricultural produce and agricultural improvement depends on industrial development. In this context, agro-industries which support agriculture and process agricultural produce of manufacture other goods there form have a crucial role to play in building up an agro industrial economic structure.

4) A toad for rural transformation

Industrialization of the rural areas brings structural changes in the society. Development of agro-based industries being a part of the overall process of economic development also brings about changes in the rural sector through the establishment of linkages between agriculture and industry. When the establishment is strengthens then that will be the balanced growth of these sectors and it would be leaves the healthy impact on the overall economy of the region.

The fundamental requirement for the aforesaid linkage between these sectors is to bring about an increase in agricultural productivity. Improvement in agricultural productivity would result in agricultural surplus which in turn would encourage growth of output and employment in the industrial sector. Improvement in agricultural productivity cannot be achieved without the support of industrial activity.

5) Advantages of agro-industries

The emergence of new agro-industries and agro services will definitely changes the rural complex and provides source of livelihood, social amenities and effective community organization. The importance of agro-industries in this regards as such

i) Agro-based industries are comparatively easy to setup and generate income in rural areas with comparatively less investment, thus they are suitable for the rural industrialization and they makes the use of local resources and skill.
ii) Agro-based industries disseminate the fruits of industrial progress to rural areas by enlarging the flow of goods and services both ways.

iii) They can fight and create job opportunities and lessen the burden of unemployment in the rural areas.

iv) To setup rural industrialization, agro-industries also help to growth of entrepreneurship in rural areas on dispersed basis and thus check concentration of economic power.

v) Agro-industries by transmitting industrial cultural in rural areas bring modernization and innovations in agriculture, thus dynamiting the rural economy.

vi) Agro-industries boost agricultural production. They facilitate effective and efficient utilization of agricultural raw materials. They encourage and stimulate farmers to enhance the production and productivity of each agricultural crop.

vii) Agro-industries can set up on co-operative basis ensuring participation of the people in process of development.

viii) Some of the agro-industries have tremendous scope in rural areas e.g. oil mills, dal mills, rice mills, processed foods and fruits and also they have tremendous export potential.

ix) Agro-industries help to eradicate the social and economic imbalances.

At present, it is agreed on all hands that the agro-based industries can play a vital role in the national economy. Industrial development is today considered as prerequisite for modern economic development. That is why all countries of the world whether big or small, rich or poor, and developed or developing are channelizing their resources to promote rapid industrialization. Before the rise of the modern industrial system India had a flourishing state of cottage and household industries and Indian manufacturers had a world-wide market. The government of India has made considerable efforts to develop the industrial sector since the beginning of the five year plans of the country.

A number of measures, such as package of incentives, launching development programmes, enhancing plan allocation and financial support through the network of financial institutions were undertaken.
At present, still 64 per cent population of the district (study region) is engaged in primary sector, 17 per cent in secondary and 19 per cent in service sector. Still today many of the peoples from backward and hilly areas of the region are migrated towards urban and semi-urban areas or near by the towns in search of the jobs and services. To overcome this problem needs to take projects using more labour intensive techniques, local resource-based and demand based industries should envisaged in the various parts of the district. Necessary and adequate infrastructural facilities should be provided for the industry. The study region is rich in agricultural potential. It is essential to utilize all agricultural potential for the development of agro-based industries; more presence of resources in any region does not necessarily make for their development in an economic sense. Therefore whatever, resources the region possesses they should be utilized effectively and optimum.

There is heavy concentration of large, medium and small scale industries in and around the Kolhapur city. Agro-based industries like sugar factories scattered nearly in the every tahsil of the district. They have changed the social and economic status of the people in the sugar producing belt of the region. If this is the reality, then there would not be the other alternative except the development of agro-industries in the rural areas and the towns of the study region.

1.5 INDUSTRIAL GEOGRAPHY

Industrial Geography is one of the youngest and well established branches of economic geography. After the first and second world war rapid industrialization has started in most of the countries of the world. The traditional and village industries slowly started to disappear and several new types of industries came into existence.

Besides, small scale industries have also expanded considerably, due to this, the industrial structure has become more diversified and expanded. As a result most of the sociologists, economists, regional planners and economic geographers are attracted towards the new study of industries, with the view in the development plans of the country.

Economic geographer started to study the new discipline i.e. industries related to geographical factors. The location factors are determined either
by the economic conditions or by natural conditions or by both. However, there are other factors also which have some bearing on the location of industries. Economic Geography sort out the most favorable locational factors those go to develop the industries. Even, the industrialists’ ultimate sources will depend upon his behavior in the geographic environment.

However, the study of industries from geographical point of view was until 1950 were more concerned with theoretical matters. Most of the work till this period was done in the content of industrial location as a response to the physical environment. The era of new concepts in industrial geography started only with the work of Hortshorn, Walter Christaller, George Rener and E.M.Rawston.

What is geography of manufacturing? What features of manufacturing are significant? The Geographers’ interested primarily in three aspects of manufacturing: its pattern of distribution, its relationships to other elements within its region of location, and its relationships to other regions.

Industrial Geography is essentially associated with productive efforts of man for manufacturing the things to satisfy his needs. Therefore, simply defined, industrial geography is the study of the distribution of manufacturing industry. In the broadest sense “industrial geography is concerned with the interpretation of present distribution patterns—global, continental, national or regional. The geographic approach using the map as the chief tool of analysis is eminently suited to type of study.

1.6 INDUSTRIAL GEOGRAPHY APPROACH

In the field of industrial geography, we can study in depth the resource based industries particularly those related to agriculture, forests, minerals etc. such a study is very essential for the backward regions which are far away from industrial resource development of any region, industrial geographic approach is desirable particularly in a backward areas of the study region.

Traditionally there are two approaches in the industrial geography for studying the distribution of manufacturing industry by industry and by region. First approach is to account for difference in the development of particular industries as between nations, while the second and more useful approach is to
analyse the distribution of industries within a smaller area for example a nation, state or a region and district. The former is analytical while the later is synthetic.

Due to the first approach (analytical) industrial geography becomes relatively precise study of the distribution of factories that collectively make up in industry. By considering the distribution of many plants in several industrial areas of nations, it becomes possible to formulate general principle of location. Such geographical generalization about manufacturing industry may prove meaningful. However, there are several types of industries and each industry has its own locational characteristics. Therefore, most generalization that can be made about the economic geography of one industry is irrelevant, for the other industry and vice versa. Therefore, synthetic approach of industrial geography becomes sometimes meaningful and more useful.

1.7 CHOICE OF THE REGION AND TOPIC

The choice of the area and the topic under investigation has been influenced by several considerations.

Firstly, the Kolhapur district has comprising the 12 tahsils 18 towns and 1217 villages. The district is situated in the extreme southern part of Maharashtra state. The district lies in the eastern plateau of the micro level division of Deccan plateau. The district as whole is a table land which descends towards south-east. The physiography of the district has distinct characteristics and they influenced on socio-economic setting of the study area.

Secondly, where the district having hilly and intervening areas are the small valleys a number of streams has originates. There are the farmers growing hill millets and paddy in this area. There are seven tahsils came under this division. The plateau region of the district having gentle slope towards east and thick layers of alluvium soils and yield good crops of kharif jowar and groundnut, sugarcane, vegetables and tobacco are also grown intensively. This is the favorable condition to set up and development of agro-based industries in the district.
The river basins of the river Kirishna and its tributary river Warna has developed a thick layers of alluvium soil which very retentive in moisture and fertile. Rice, sugarcane, jower, groundnut, tobacco and vegetable etc. are grown in the basin. There are many agro-based industries developed in the river basins, especially in the Hatkangale, Shirol and Karveer tahsils of the district. There is still scope for the development of the agro-based industries in the area.

Thirdly, about 90 to 95 per cent annual rainfall is received during the south-west monsoon season. This percentage is decreases in the north-east to about 60 per cent. The winter season accounts only 10 per cent rainfall in the district. The Kolhapur district known for the K.T. wears and it is useful for the irrigation purposes. There are 4 major, 11 medium and 47 minor irrigation projects in the district. The 79566 hectare area irrigated (58.87 %) by different sources of irrigation against the gross area (135151 hectare) irrigated in the in the district. There is scope for the irrigation and there is the opportunity to growing crops. There is effect of good yield of crops and a result; it would be favorable for the set up and the development of agro-based industries in the study region.

Fourthly, the region has Laterite, shallow and medium and Black soils. The agriculture is developed in the deep and medium black soils because they are having good irrigation facilities. They are favourable for the good yield of crops in the region and provide very good condition for the agro-based industries in the study region.

Fifthly, the chief mineral of the district is Bauxite. Copper, gypsum, iron and kaolin are found in small quantities and they are important economically. Hence there is no scope for the mineral based industries.

Sixthly, the pressure of population on agriculture land was more in last twenty years. The per capita cultivated land was only 0.16 hectare. It varies from tahsil to tahsil. It is essential to divert the population towards the agro-based industries in the study region.

Seventhly, the development of agro-based industries specifically, sugar factories have come up as growth points, which provide the financial assistance to the peasants the study region particularly for agricultural
inputs. There is a significant growth in the area under cash crops with increasing facilities of irrigation, modern implements etc. so the crops gives good returns of yield.

Eighthly, there is a wide scope for the production of oil seeds, pulses, fruits, and other cereals in the study region. Ultimately this production will support to the small scale agro-based industries in the study region.

It is felt that the system of agro-based industries offers a helpful approach to obtain a more complete understanding of the problems and prospects of the agro industries.

Moreover, the composite circumstances that contributes to the existing problems facing by agro-based industries today a time and space perspective that may be appreciated.

All these considerations motivated the researcher and he has turned his attention to this region and its agro-based industrial development.

1.8 AIMS AND OBJECTIVES OF THE PRESENT STUDY

The main aim of the proposed research work is to map, describe and analyze the present distribution of agro-based industries in the study region from the geographers view point. The specific objectives as under:

1. To investigate the brief review of development of agro-based industries in the study region.
2. To find out the spatio -temporal development of agro-based industries in the study region.
3. To classify the agro-based industries in the various groups and their distribution.
4. To find out concentration, diversification of agro-based industries.
5. To evaluate the efforts made by the individuals, co-operative societies and Government Agencies for the growth of agro-based industries in the study region.
6. To examine problems arises in the development of agro-based industries in the study region.
7. To assess the existing agro-based industries and expected agro-based industries in the study region.
8. To suggest remedies over come to the problems and provides better frame work for the growth of agro-based industries.

1.9 DATA BASE AND METHODOLOGY

The data collected and used for the research comes both from the primary and secondary sources. The primary data is the raw data collected through different sources for which special questionnaires were designed. The basic unit of the investigation is tahsil as well as major group of agro-based industries. Particularly these questionnaires were used for the collection of data from different agro-based industries in the tahsils. For the generation of the primary data the field work was carried out by sampling method and personal observations. It would not be possible to collect the data in each case of the agro-industries. Therefore the questionnaire is circulated to selected sample industries to obtain information about input and output.

The basic data regarding population, irrigation, land use pattern, animal husbandry, agricultural implements, improved seeds, chemical fertilizers, cropping pattern, electricity, market and transportation etc. has obtained from the socio-economic review of the district, district statistical abstract, district census handbook, district gazetteers, agricultural epitomes’ periodical season and crop reports published by the depart of agriculture.

The secondary data regarding agro-based industries has been collected from the District Industrial Centre, Maharashtra Agro Industries Development Centre, and District Maratha Chambers of commerce and Industries, Khadi and Gramodyog Mahamandal.

The obtained data is applied to find out the levels of industrialization of the district. The data thus collected, through primary and secondary sources, were processed and represented by statistical and cartographic techniques. The statistical data arranged in several tables and percentages are used for the analysis of location aspects of agro-based industries, land use, irrigation and agriculture. It is worthwhile to study the crop land use, agriculture landuse as basis of development of agro-based industries.

The locational analysis of agro-based industries is derived through the Bhatia’s crop concentration method, it will be used for the class of
concentration e.g. to show high, medium and low grades of concentration of these industries spread within the district. The diversification of agro-based industries is dealt with Gibb’s and Martin’s method. For the case study of agro-based industries the researcher has carried out the intensive field work through questionnaire method.

1.10 REVIEW OF LITERATURE

For the present investigation, the literature from the different disciplines has been refereed. The role of geographer is very vital in analyzing and synthesizing and the comprehensive study of an issue. Studies in the field of industrial geography by Indian geographers can be traced back to early forties of the twentieth century. Before Independence very little work was done in the field of Industrial Geography by Indian geographers in the various parts of the country. The following are the notable studies done by the geographers in this field. Iyengar C.V.V.(1930) studied “The Oil Industry in Coimbotore”, Rao R.H. (1930), ‘A Note on the Home Industries of Coimbatore District’, Rao R.S.(1931) studied “Cottage Industries of Malabar”, Loknathan (1932, 1936, 1939) studies ‘Localization of Industry in India, Recent Trends in Cotton Textile Industry and Industries of Madras’, Kalyansundaram (1934) examined ‘Geographical Basis of Iron and Steel Industry’, Prakash Rao V.L.S.(1941) studied “Geographical Factors and the Ship Building Industry”, Ghosh S.C.(1946) studied ‘Spatial Distribution of Industries in India’, Gandhi (1945) studied ‘Problems and Prospect of Sugar Industry in India’.

After the independence many studies in the field of industrial geography have been undertaken by the geographers. The following studies are the notable. Among them Panday R.S. (1951) has studied “Bagelkhand: A Study of Industrial Geography’, Rangappa K. (1962) worked on ‘Industrial Geography of Mysore state’, Panachal Nandkishore (1967) has done their work on ‘Industrial Geography of Madyapradesh’, Reddy K.V. (1972) has completed their work on “Industrial Geography of Telengana”, Pandy Ram and Dutt (1983) have completed their work on “Chota Nagpur main Virat Udyog ka Bhougolik Vishleshan Audyogik Bhogol main ek adhyayan”, Shisodia M.S. (1983) has studied ‘Industrial Geography of Ghaziabad Town’, Shrama S.D. (1985) has worked on ‘Industrial Geography of Gwalior Division’.

The above mentioned work shows a dominant trend of research in the field of industrial geography in India in the post independent period. Various geographers have done their research work in the field of industrial geography. It is not possible to take review of all geographers’ research. Some of the noted reviews are given bellow.

Mrs. Surinder Shahi (1962)

She has analyzed, ‘Agro-Industrial Relationship in the Sarayupar Plain of U.P.: A Geographical Analysis’. The study presents the relationship of agriculture and industry in the Sarayupar Plain, which comprise five district of Uttar Pradesh. The study proceeds to analyse measure and explain the actual agricultural and industrial conditions. It depicts their relationship and trends as also their economic significance.

The work is divided into four sections and nine chapters which deal with almost all the related aspects of the problem. The first section deals with the Geographical background of the area. The first chapter deals with the physical setting and the
second and second with cultural setting of the study region. The second section deals with the raw material obtained from this region. The third chapter deals with these raw materials. They include raw cash crops such as sugarcane, oil seeds and jute and food grains such as rice, wheat, barley, maize and pulses.

The raw materials obtained indirectly from agriculture are discussed in the fourth chapter. Third section deals with the industries, which are discussed in fourth chapter. The fifth chapter throughs light on the major industries based agricultural raw materials. These are sugar and jute industries. Sugar industries is by far the most important agro-industry of the region and therefore, exhaustive of sugar industry has been made.

The sixth chapter deals with the byproducts of these major industries which can be developed. The small scale and cottage industries based on agriculture raw materials along with their historical background are discussed in the seventh chapter and the eighth chapter deals with the structure of employment in the Sarayupar plain and the importance of industry in the economy of the people living in this region. The forth section deals with planning for the balanced agro-industrial development and with conclusion. In the ninth chapter on planning, efforts have been made to suggest as owned agriculture planning, development of large scale, small scale and cottage industries.


The authors have studied and analyze the locational pattern of the large and medium scale manufacturing industries in Andhra Pradesh. He made an attempt to highlight the potential and the lines on which industries can be developed in the years to come. His study is based on the data compiled from the directory of Medium and Large scale industrial undertakings in published by the department of industries Andhra Pradesh in 1978.

For the purpose of the study of industrial units in the state he has grouped units into the following categories on the basis of the primary raw material used.

1. Agro-based industries,
2. Engineering industries,
3. Chemical industries,
4. Mineral-based industries,
5. Forest-based industries,
6. Food and Beverage based industries,
7. Other industries.

Author has calculated the rank correlation co-efficient by Spearman’s method of rank correlation co-efficient. He found that the ranking of the above mention industries along with the labour and capital variables reveals that the agro-based industries get the first rank in respect of labour employed, while it ranks third in regard to the capital invested. In this way, one may realize the importance of agro-based industries, as they are highly labour intensive and expansion of this section would go a long way to solve the employment problem particularly in rural areas. There does exist a wider scope for the expansion and investment of more capital in this sector. The engineering group of industries ranks first in regard to capital invested, though it ranks only third in respect of labour employed. Most of the engineering industries do located at the capital city of Hyderabad. Author makes a detailed study of agro-based industries, engineering industries, chemical industries, mineral based industries, forest-based industries, food and beverages and other industries.

The author has concluded that, the industrial development is not even throughout the state. It has concentrated in a few industrial conurbations, particularly, at the capital city of the state. Industrial locations normally oriented either to raw materials or to the market. Industries in the category of agro-based, forest based and mineral based are all raw material oriented. In order to eliminate industrial backwardness in the state several new schemes has been taken up by the state government during the fifth five year plan period.

The author reveals that, there exists vast scope for the expansion and development of agro-based industries and mineral based industries.

A.P.Singh (1983)  

Author has completed his work entitled “Impact of Agro-Industrialization on Agricultural Landuse: A case study of Baramati Taluka, Pune
District”. This study addresses itself to the impact on agro-industrialization on agricultural land use in Baramati taluka of Pune district, Maharashtra state.

Chapter first deals with the introduction of the topic defining the objectives and new transformation taking place in the rural areas. Chapter second explains the geographical personality of the study area. Chapter third deals with the agricultural land use in the Baramati Taluka and the last chapter four explains the agro industrialization as dynamics of change.

The data pertaining to the changes in percentage of acreages of certain key crops such as jowar, wheat, sugarcane, and cotton from 1957-58 to 1980-81 has been collected and analysed. Numbers of wells and pumpsets per 100 hectares of N.S.A. have been analysed. Regionalization based upon principle component analysis, factor analysis and cluster analysis has also been attempted by choosing specific parameters.

In conclusion it is observed that the taluka is undergoing transformation from 1957 to 1981. All the major crops show an increase in the acreage as a function of one or major factors. This increase is due to increase in irrigation, demand, agro industrial base and function of rising economic standards. Net sown area is being diverted to cash crops. But there has to be a balance between cash crops and food crops.

D.G. Gatade and M. D. Tawade (1983)

He has examined “industrial potential of Konkan region of Maharashtra”. Author has been considered physical characteristics, potential of natural resources such as water, geographical condition for the generation of hydel power, mineral resources, and agricultural resources. This study mainly focused on the depletion of resources and suggestion for their better utilization for economic development of the region. In this study resources existing in the region being considered assess their industrial development. Due to the physiographic condition, the Konkan region has a potential for the development of hydro-electric power which may be considered a drive force for the future development of industries within the region.
Author have pointed out that Konkan region has great potential for the industrial development due to availability of various resources such as agriculture, forest, marine and minerals.

**P. A. Jadhav (1984)**

He has studied “agro-based industries in the Satara district” (M.S.). His entire work is divided into five chapters. Author has used primary and secondary data for the study region. He used various graphs and maps to interpret the data. He studied cropping pattern of the district. He try to classified and give the spatio-temporal distribution of agro-based industries in the Satara district. He has studied impact of agro-based industries on the cropping pattern in the study region.

His entire work is organized into five chapters. In the first chapter he through light on the importance of the problem, choice of the region, objectives and methodology. In the second chapter he has gives the idea about the geographical background of the study region. The chapter deals with changing cropping pattern of the study region. The fourth chapter deals with spatio-temporal distribution of the agro-based industries. In the fifth chapter the author has discussed agro-potential of the study region. He has concluded at the last.

He has observed that the tremendous change in cropping pattern in the study region. It happens due the development of sugar factories in the study region. The peasants in the study region have attracted towards cash crop like sugarcane and therefore the area under sugarcane is increased on large scale as compare to the last twenty years.

**M. S. Gadekar (1989)**

Author has worked on “Development of Industries at Ahmednagar: A Gographical Study” the present study aims at an appreciation of development of industries at Ahmednagar. It also undertakes a comparative study of locational advantages of the three major zones viz. i) Ahmednagar city ii) Industrial Estate iii) M.I.D.C.

This work is divided into six chapters. Chapter first is an introduction to the study area on the subject matter. Chapter second and third describe
industrial structure of Ahmednagar and spatial distribution of industries in Ahmednagar. Chapter four brings out the relative significance of different types of industries on the basis of no. of units, employment, capital investment, turnover, profit etc. The characteristics and linkages of the most important industry i.e. engineering are studied in chapter five. The last chapter is devoted to the locational analysis of industries of Ahmednagar, followed by an appendix and bibliography.

It is observed that i) engineering-the most important industry is concentrated at M.I.D.C. The land values at M.I.D.C. as lower as they are controlled by the Government. The employment in the large and small scale industries is more or less the same. The proportion of workers engaged at M.I.D.C. is higher than the city. ii) The large scale industries are material oriented units whereas the small scale units are marketed oriented and both are interdependent. iii) A study of some industrial units with a view to appreciate the difference in capital investment and transportation cost at different centers in Maharashtra reveal that total costs for these units at Ahmednagar are less than Marol (Bombay), Kalyan, Ambarnath, Pune, Nasik and Aurangabad. Beed and Solapur have little lower costs but the difference is marginal.


Author has studied “Role of Agro-Industries Corporations”. The study of the Agro-Industries Corporations in India with special reference to Rajasthan is a modest attempt to survey the working of state Agro-corporations with special reference to Rajasthan and also to analyse the impact of financial and other operations of the corporation on the agricultural growth of this stage, it is very difficult to measure the contribution of these Agro-Industries Corporations in agriculture development of the state for this purpose the author has issued the questionnaire to all the state Agro industries Corporations with a view to have their comparative study on similar footing but disappointing the data and could not get the response. Thus, then he has made an attempt to pursue the work on the basis of the existing literature and annual reports of the corporations. His work is the outcome of detailed and intensive study.

The entire work of the study has been arranged into seven chapters. Chapter first provides the conceptual frame work and background of agro-industries corporations’ separately. Chapter second deals with the Agro-industries Corporations in India. In chapter third, growth, functions, working and financial
management of Rajasthan State Agro-Industries Corporations have been discussed. Chapter four presents a detailed analysis of role of Rajasthan State Agro Industries Corporation in the field of mechanization in agricultural development of the state. Chapter five gives an account of various inputs and other important activities of RSAIC. Chapter six seeks to analyse the role played by the State Agro-Industries Corporations in agricultural development of India. In this chapter agricultural development and role played by RSAIC in this direction had been also attempted. Chapters seven, as a prelude, first, summarize whole theme and conclusions of the study. It is followed by problems and suggestions for improvement of the working Agro-Industries Corporations in India.

At the last author has given conclusion, problems and suggestion for the better development and performance of Agro-Industries corporations.

P. L. Mishra (1994)

Author has studied “Agro-industrial development in India”. He has collected the data through the primary and secondary sources available in the study region. He makes the personal visits in the study region and gets the data through the questionnaire supply to the enumerators’.

Author has employed different types of techniques for the quantification, description and distribution of the agricultural and industrial situation in the study region. He has applied the techniques which fall into two categories: a) observational-descriptive and b) observational rational.

He suggests that the investigation in agricultural and agro industrial geography involves four stages such as the identification of the problem, the collection of the relevant data, the formulation of the hypothesis, and the testing and modification of hypothesis to provide an adequate explanation (coppock-1969). The author has undergone through all these stages.

The investigation has been carried out at different level e.g. regional level, district level, tahsil level and sometimes on block level as a unit for collecting data, mapping and observations. The illustration through maps have been made in details and interpreted in terms of their correlations with physical and human
factors operating in the specific areas. The empirical attributes of the land-use combination, crop combination and agro-industrial development in Moradabad region enabled identification of different type of areas. Author has selected three villages from the entire region for conducting sample studies with the objectives of acquiring detailed information and a deeper insight into the distributional regional patterns and agro-industrial development.

Author has completed his work with the following objectives:

1. To find out close relationship between cultivation, cropping pattern and agro-based industries.
2. To capture paradoxical situation in Moradabad region by maximization of agricultural resources for agro-industries and minimization of agricultural disparities.
3. To analyse the pattern and development of agriculture and agro-based industries.
4. To evaluate the development of potentials for agriculture and agro-based industries in Moradabad region;
5. To suggest modern patterns of integrated agricultural and agro-industrial development in Moradabad region in an intra-regional and inter-regional context; and
6. An attempt is made to relate agricultural productivities, changes in cropping patterns and impact of intensive agriculture with agro-industrial development in Moradabad region.

In the last, the author has gives his opinion about his study which provides an opportunities to test i) the concept of regional variation in agriculture and ii) the relationship between agro-industries and farming.

His entire work is divided into ten chapters. First chapter provides introductory in formations. Geographical background, including spatial relation, physical setting, and cultural setting is provided in chapter two. The third chapter deals with land-use patterns: general and agricultural including one crop area, two crop area, and multi crop area and distribution, per hectare yield and production of various crops, various farming methods have been discussed in chapter four. Chapter five provides direct supply of agricultural raw materials including indirect supply of raw materials from agricultural livestock wealth and measurement of
potential supply of agricultural raw materials. Chapter six and seven are devoted to
growth and distributional pattern of major agro-based (Sugar and Cotton Textile
Industries) and minor agro-based cottage industries and their role in the economy of
the area. Chapter eight deals with livestock industries where as chapter nine
Horticulture industries. The suggestions for planning the balanced industrial
development are given in the last chapter.

Author has found that the production of crops and development
of agro-industries are closely related with each other in an agriculturally pre-dominant
region like Moradabad and attempt for planning the balanced agro-industrial
development seems to be the only way out for the progress, prosperity and
development of the region.


Author has Examined ‘Regional Disparities in Industrial
Development in Andhra Pradesh’. An attempt has been made by the author to identify
industrially backward districts in terms of general and small scale industries. They
have been used factor analysis method.

Author has find out that the distribution of industries as
revealed by the composition of industries also indicates haphazard and unplanned
industrial development in the state. He compiled production wise small scale, large
scale and medium scale units by the using of investment and employment in the
industries.

Author has used five indicators such as number of industrial units per 10,000
populations, investment per 10,000 populations, industrial workers per 10,000
populations, percentage of industrial workers to total workers and per capita power
consumption are selected to study the spatial distribution pattern of industrial
development and to identify industrially backward districts in the state. These
indicators are subjected to the factor analysis and a unidimensional development of
industries is brought out Hyderabad and Rangareddy district of Telangana region,
with high factor scores of 7.122 and 7.026 respectively, occupy first and second
places in the level of industrial development among the 23 district of the state. The
multidimensional industrial development has led to the highest concentration of
industries of all types in these two adjacent districts in and around the metropolitan Hyderabad city. This region forms the mega-industrial magnet of the state. In the state of Andhra Pradesh there are 10 districts identified as industrially backward and 6 other very backward out of 16 backward and very backward districts, eight districts are found in coastal region. Broadly, speaking as many as seventy per cent of the district in the state are industrially backward districts.

It is evident that Andhra Pradesh is backwards in terms of general industrial development. The development and spread of large and medium scale industries in the state are uneven. Author has given his opinion about the imbalance in the development of industries in the state. He states that in the developing economy, it may not be possible to maintain regional balance in the location of large and medium scale industries. In such instances, the development of small scale industries could be spread equitably to bring about homogeneous development and reduce imbalances in industrial development.

Author studied the spatial pattern of small scale industries. He replied he opinion about the development of small scale industries, he mention that in a developing country like India where the economy is essentially agricultural with limited capital and abundant labour supply an efficient method of resource utilization calls for development of agro-based small scale industries and cottage industries. The small scale industries are recognized as the most appropriate means to achieve a rapid and ubiquitous economic development of developing regions with large population.

Author has expressed the level of development of small scale industries in the state based on the factor matrix. Again he mention that in case of SSI units in the in the state the Hyderabad and Rangareddy districts are leading one because they have highest factor score of 11.403 and 6.996 respectively. It may be note that Hyderabad district is the urban district while Rangareddy is the rural district. The author has observed that very extreme disparities in the development in the SSI units in the state. The range of the index value is in between 11.403 to -2.638. The highest index value is recorded in Hyderabad and the lowest value is recorded in the Anantpur district.

Lastly the author has concluded that large and medium scale industries as well as SSI are concentrated in the Hyderabad and Rangareddy district
only. The industrial development in the state is very poor and unbalanced. It may be noted that the higher the level of development the greater is tendency of diversification of industries.

**Dr. N. C. Joshi (1995)**

Author has studied “Rejuvenating rural life through industrial growth”. He has used some figures to highlight his topic. It is a descriptive work in which author has considered restructuring rural economy, development of agro-industries, infrastructural development to stop the migration from rural to urban and semi-urban areas, improving rural environment, pioneering role of khadi and village industries commission, policy package for small industries, evaluation overdue, thrust on SSI units, industrial backwardness, report of sivaraman committee, arresting reverse transmission of funds and industrial estates for the discussion.

He concludes that all facets of rural life need to be affected by the latest development so that rural people also raise their standard of living in the modern sense. The productivity rate should improve with the help of better tools, implements, inputs and handwork. The unemployment rural youth should be absorbed in skill formation activities in the village itself. A number of technological institutions need to be set up in villages. All these things sound like a wishful thinking but then a day must come when the majority of people of this country are brought into the mainstream of the present-day development taking place everywhere.

**Sandeep Singh (1994)**

He has studied, ‘Advantages and Structural Weakness of Rural Industries in India’. This is the descriptive study of the paper. Author has not used any time series data for his study. He has given advantages of rural industries. Rural industries have an entirely different pattern of development. These industries employ very small amount of capital and employ more human force as a labour. He gives some of the advantages of these industries. Such as light capital investment, huge employment potential, large variety production of consumer goods, economic equality, beneficial to agricultural laborers, full use localized materials, balanced regional development, economic uplift of the poor and contribution to exports. According to author agro-based industries as well as other gainful employment to our
vast population can ensure balanced, equitable growth. Rural industries can play their rightful role only if they are run on sowed and efficient lines.

Author point out that some problem of rural industries like problem of finance, raw materials, power shortage, problem of marketing, competition with large industries, problem of technology, problem of skilled labour, lack of communication and information, problem of transport bottlenecks and other problems. He has concluded that the growth of rural industries helps in raising the standard of living of the rural population by providing them more income, consumer goods at cheaper rate and social economic overheads. Also he states that rural industries save us from the evil effects of the concentration of industries such as pollution, over urbanization, congestion, growth of slums etc. In short rural industries play an important role in the development of Indian economy.

Dr. M. N. Gulve (1998)

The author has studied, “A Study of Small Scale Agro-Based Industries in Bid District”. The author has used primary and secondary data for the period of 1970-71 to 1994-95. The main objectives of the study were as fallows.

i) To study the infrastructural and geographical from the view point of industrial development.
ii) To analyze the trends of area, production and productivity of industrial crops.
iii) To study the small scale agro-based industries such as dal mills, oil mills, cotton textiles etc.
iv) To study the role of different agencies in the development of small scale agro-based industries.

Author has used different statistical techniques such as per centage, variability indices, correlation, compound growth rates, location quotient, industrial combination, concentration and industrial diversification for the interpretation of the data. He has also calculated labour productivity and capital labour ratio for the selected small scale industries. Author used 73 tables and 134 maps for the analysis of the data.

His entire work is divided into eight chapters. The first chapter deals with meaning of industry, meaning of agro-based industry, significance of
small scale industries, aims and objectives and methodology etc. In the Second chapter he through light on the changing definition of small scale industries, industrial policy, small scale industrial growth in India, Maharashtra, Marathwada and Beed district. The third chapter deals personality of the study region. In the fourth chapter, he studied trends in area, production and productivity of the industrial crops. Fifth, sixth and seventh chapter deals with small scale agro-based industries like rice mills, oil mills, cotton ginning and pressing etc. author has case of every agro-based industries in concerning chapter. Last chapter deles with conclusion, problems and remedies to solve the industrial problem of small scale industries in the study region.

1) Problem of finance 2) problem of water 3) lack of facilities of securing adequate and regular supply of raw material 4) absence of adequate marketing facilities 5) inabilities of entrepreneurs.

To solve the above mentioned problem author has suggested the following measures.

a) It is necessary to organize proper survey before the starting the unit in the area.
b) Government should have provided proper water scheme to the industrial estates.
c) Various banks should provided lot of working capital to entrepreneurs at low rate of interest.
d) Government should have fixed marketing prices of finished industrial goods, that prices should be sufficient to the entrepreneurs.
e) Government of Maharashtra should have set separate centers to provide raw materials to the small-scale agro-based industries in the study region.
f) Government should have the training to the entrepreneurs regarding their concerning units.

**Dr. U. B. Pathare (2000)**

He has studied “A Critical Study of Industrial Development in Jalana District.” Author has collected data from primary and secondary sources. The main objectives of his research is as fallows

i) To study large, small scale and cottage industries of Jalana district.
ii) To study physical and non-physical determinants of from the viewpoint of industrial development.

iii) To study the efforts for the growth of industries by industrial estates government agencies.

Author has calculated labour productivity, capital productivity, for the study of industrial development. He has also calculated industrial concentration and diversification of the study region. He used co-efficient of variation, annual variation, moving average methods for the analyzing the data. His entire work is divided into eight chapters. Author has found that the various problems like shortage of capital, less capacity utilization, problem of marketing, shortage of raw material, lack of planned working system and problem of monopoly etc.


Author has worked on ‘Geographical Perspective on Growth of Sugar Industry in Maharashtra’. His entire work is divided into seven chapters. Author has collected primary and secondary data for the study. In first chapter author throws light on introduction, importance of theme selected, objectives, data base and methodology, limitations of the study, review of the literature and outline of the work. The second chapter is on the physiographic determinants, Socio-economic factor and agricultural framework of the study region. Whereas third chapter throws light on origin and development of sugar factories in World, India and Maharashtra and role of co-operative sector in the development of sugar industry. Forth, deals with spatio-temporal perspective on sugar industry, whereas, location analysis of sugar industries have been discussed in fifth chapter. Sixth chapter deals with problems, prospects and by products of sugar industries in Maharashtra where as findings and recommendations given in the last chapter.

Author has used location quotient method for the presentation of sugarcane concentration. Ranking co-efficient method, cartographic technique, Karl Pearson’s Co-efficient technique and nearest neighbor technique are used for the interpretation of data. Author has been found that problem like harvesting and transportation of sugarcane, lack of high yielding sugarcane seeds, and shortage of sugarcane adjustment of crushing season, lack of better management, natural hazards, and low price of sugar, high production of sugarcane and changing government policy.
Author found that locational pattern of sugar factories is uneven throughout the region. He found that the nearest neighbor analysis of locational pattern of sugar industry at district level reveals that the uniform pattern of location of factories in Aurangabad, Akola, Sholapur, Jalana, Osmanabad, Beed, Wardha, Pune, Jalgaon, and Sangli districts. Whereas the absolute clustering pattern has been represented by Buldhana, Amarawati and Bhandara districts.

Omprakesh V. Shahapurkar (2002)

Author has completed his work entitled “Industrial Development of Nanded District: A Geographical Analysis”. Author used primary and secondary data for the period of 1970-71 to 1996-97. The main objectives of the study were as follows.

1. To study the availability of infrastructural and geographical factors on which the development and growth of industries are depend.
2. To study industrial development in India, Maharashtra and Marathwada and Nanded district.
3. To study the population characteristics and its effect on agriculture and industries.
4. To analyze and map the spatio-temporal distribution of irrigation facilities and its effects on industrial cropping pattern.
5. To assess the effect of non-physical determinants on agricultural development.
6. To amp, describe and interpret the distribution of large and medium industries in the study region.
7. To study the performance of small scale units in Nanded district.
8. To study the trends in industrial development in the Nanded district specially form 1971 onwards.
9. To study the cottage and village industry of the study region.
10. To study the efforts for the growth of industries by industrial estates and government agencies.
11. To find out the industrial problems and suggest suitable remedies to solve them.

Author used different statistical techniques such as per centage, variability indices, correlation, location quotient, industrial combination and concentration, industrial diversification for the interpretation of the data. He has also
calculated labour productivity, capital labour ratio for the selected small scale industries.

His entire work is divided into eight chapters. The first chapter throws light on introduction and appraisal of the problem. In the second chapter he throws light on the industrial policy, industrial development through five year plans, and development of industries in the study region. The third chapter covers the geographical and socio-economic setting of the study region. Chapter four is divided into three parts; whereas tahsilwise land use pattern; the index numbers of the crops, changing industrial cropping pattern and tahsilwise trends in industrial cropping, the growth, yield and productivity of industrial crops are discussed respectively. Fifth chapter through light on the efforts made by the indigenous people for the development of large and medium scale industries in the study region

Sixth chapter deals with the growth of SSI units, labour force, investment, production cost, sale value and profit, tahsilwise distribution of SSI units, industrial combination and changes therein, number of SSI in per hundred square kilometers, and per thousand population, concentration and diversification also studied in the same chapter.

Chapter seven is devoted to the development of village and cottage industries in the study region. In the last he covers conclusion, problems and remedies to overcome to them.

Author concluded that the government of India made an effort through five year plans and implement industrial polices for the development of industries in India. He has taken the review of the strategies and success of the industrial policies in India. He found that Out of 274 large and medium scale industries in Marathwada region, about 74.44 % units were found in Aurangabad district. The share in the remaining district is much neglected. Most of the units are sick due to shortage of raw material, lack of skilled labour, strikes, and transports lack of proper guidance etc.

There is same picture about the SSI units in the Matathwada region. Author has suggested some of remedial measures over come to the problems faced by the industries in the study region.
Chauhan P. R. and Singh S.K. (2009) 

Author has studied ‘Industrialization and Regional Development in Chhattisgarh, India’. The study focuses attention on the levels of industrialization and regional development. Author has calculated Z Scores for the understanding of the levels of industrialization in the Chhattisgarh for the year 2007. Author has been collected data from the secondary sources. The data regarding different indicators have been obtained from Directorate of Agriculture, Raipur, 2007; Directorate of industries Raipur, 2007; District-wise indicators of economic development of Chhattisgarh, 2007 and economic survey of Chhattisgarh, 2007.

Author has studied levels of industrialization, indicators of industrialization and levels of regional development. The regional development pattern has been assessed by them on the basis of agricultural sector, industrial sector, social sector and infrastructural sector. Author has studied district level indicators of different sectors and regional development level of the areas has been determined. The district level absolute data have been transformed in Z scores. On the basis of the district level Z scores values they determined and indicates spatial pattern of regional development from high level of development to low level development. Also they studied impact of industrialization on regional development.

Author has concluded that industrialization is capable to generate developmental activities in any region. This is because of the principle that development starts at point and further disperses in the surrounding that says that development at any centre as the location of industries starts up as a mild concentration and further winds up as a massive localization.

1.11 CHAPTER SCHEME

The present study is divided into the following chapters.

- The first chapter is devoted to introduction and appraisal of the problem.
- Chapter second deals, the geographical personality of the study region.
- Chapter third is devoted to assessment of the role of individual, co-operative sector and government agencies for the development of agro-based industries in the study region.
• Chapter four reveals general land use and agricultural land use.
• Chapter five through light on the agro-based industries in the study region.
• Chapter six covered the concentration and diversification of these industries.
• Chapter seven covers conclusion, constraints of development of agro-based industries and planning and suggestions for the future development of agro-based industries in the study region.

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