CHAPTER - I

INTRODUCTION
INTRODUCTION

IMPORTANCE OF THE STUDY

India has been experimenting with the planned development over the last four decades. The industrial development of the country has placed it on the industrial map of the world. India, today, is counted among the ten leading industrial countries. The economic development of our country has not been an unmixed blessing. The benefits of development have not been shared equitably by all the sections of population and all the regions of the country. Along with the economic development, paralysing problems like poverty, unemployment, regional imbalance and pollution have also increased. At the beginning of the 1970's the government embarked upon a programme for the elimination of poverty through the creation of employment opportunities. The beginning of 1980's witnessed the concern of the government over spreading pollution and contamination of environment. These problems claim the urgent attention of the government.

There has been a notion among the academicians to the effect that the blind imitation of western strategy of development has led to more and more concentration of industries, regional imbalance, growing pollution etc. The
stream of thought in flowing to the other end where there would be the dispersal of industrial activity, decentralisation of industries, small-scale production, labour-intensive techniques of production, maintenance of environmental safety by abatement of pollution and other factors. There was a quest for an appropriate technology which would be neither western i.e. highly capital intensive nor traditional which would be inefficient. It should combine the advantages of both without their drawbacks. An appropriate technology for an area should depend upon its resources, pattern and markets. It is defined as "an amalgam of skills, methods, techniques, appliances and equipments that can contribute to solving the basic economic problems of the concerned communities. It should be economically viable, technically feasible and should fit in the socio-economic fabric of local communities. In the Indian context it should be labour-intensive and capital-saving. It should ensure the dispersal of wealth among a larger number of people and create a sense of participation and decision making at the local level. It should be ecologically sound and should be in harmony with local environment". Prof. Vakil and Prof. Brahmananda also favoured this view when they wrote "Each country has to work out its own salvation and particularly to
find out which production methods are feasible for it". References were also made to the countries which had tried to involve masses by taking to small scale production spread over the length and breadth of the country. The United States Bureau of Mines pointed out in a study that the Chinese cement industry had been becoming a world-factor. The number of small cement plants in China located in rural areas increased from 200 in 1965 to more than 2800 in 1975 and to 4800 in the year 1983. And it also noted that 75% of the total cement production came from the small scale cement plants. The study of Chinese cement industry indicated high employment potential.

The Government of India concerned with the crippling problems namely poverty, unemployment, regional imbalance and pollution seemed to have been inspired by the Chinese example, when it announced a policy in 1979, encouraging the establishment of mini cement plants which would exploit the natural resources, create employment etc. The objectives of the policy announced in 1979 were:

1) To bring cement industry within the financial fold of small entrepreneurs.
2) To contribute to uplifting the local economy and development.

3) To exploit the smaller deposits of limestone scattered all over the country.

4) To lower capital investment per unit of capacity and

5) To create increased employment-opportunities in rural areas on a well-dispersed basis.

This technology which is labour-intensive and on small scale, if tried in almost all industries, may contribute substantially to the eradication of poverty and unemployment, reduction of regional imbalance and abatement of pollution.

Attempts have been made by Appropriate Technology Development Association (ATDA), Lucknow (Uttar Pradesh), to scale down the large-scale technology in cement, paper, cotton, jute, wool and chemical fertilizer. It is also suggested that if suitable technology were to be developed, the direct employment would be for at least 20 million people in the villages. Later, this would have multiplier effect in creating indirect employment to at least 60 million people. But the pertinent question is, whether such a technology is economically viable and technically feasible. In cement industry at least more than 150 mini cement plants have been
set up in the country. John Sigurdson and others have argued that mini cement plants vis-a-vis large-scale plants do not have any advantages. According to them:

1) the investment cost per tonne will not be lower in MCPs
2) the employment effects are negligible
3) MCPs are not viable if transport arrangements are efficient
4) MCPs are not viable, if rebate and excise concessions given by government are withdrawn.

It is against this background, that the present study has been undertaken.

OBJECTIVES:

The objectives of the study are:

1) To study the techno-economic viability of mini cement plant.
2) To compare the employment in mini cement plant vis-a-vis that in large units in the cement industry.
3) To compare the capital requirements of the mini cement plants to those of large units in the industry.
4) To study (to the extent possible) the impact of the plant on the local employment.
5) To study the effects of the mini cement plant on the environment around.

METHODOLOGY:

The mini cement plant at Lokapur in Mudhol taluka of Bijapur district in the Karnataka state is chosen for an intensive study. This mini cement plant which is based upon the vertical shaft kiln technology is the second plant to be established in India. It is regarded as a model plant in India because of its ideal location in the midst of rich limestone belt and other requisite resources. The MCP at Lokapur has been in operation for the last ten years.

The literature on mini cement plants is meagre. The studies of mini cement plants have been undertaken by the Cement Research Institute of India. These studies are in the form of the publications of the Cement Research Institute of India like Entrepreneurs' Guide I, II and III, Techno-economic viability of mini cement plants, Potential sites for the establishment of mini cement plants etc. A comprehensive study of any mini cement plant in its economic perspective is not available, hence, the importance of the present study.
Sources of Data:

With the scanty secondary data available on mini cement plant, it is necessary to bank upon the primary data. However, the present work has made use of whatever the secondary data are available and in addition, it has collected the primary data. The secondary data have been collected from the various publications of the Cement Research Institute of India, Annual Reports of Lokapur Cement Plant, Kanoria Industries Limited, Bagalkot and Associated Cement Company, Bombay for different years. Besides, a questionnaire also has been prepared and canvassed for collecting the basic information from the Lokapur Cement Plant itself. The techno-economic feasibility of mini cement plant is studied in terms of the break-even analysis. A comparative study of the mini plant and the large plant in cement industry has also been made to prove the point under reference.

Chapterwise Summary:

I Introduction:

This chapter deals with the importance of the study, objectives, methodology, sources of data and chapterwise summary.
II Role of Cement in Economic Development:

This chapter traces the history of cement from its very inception in 1824 when Joseph Aspdin invented this boon to mankind by means of a compound of clay, lime and mortar. In India, cement industry is one of the major and oldest established manufacturing industries in which the country is well-endowed with all the requisite raw materials, skilled manpower, machinery, equipments, technology and know-how. It is both a basic and a consumer industry. It produces a commodity that enters into almost every segment of economy. Its product is required by firms, factories and households. It is needed for the construction of dams, highways, bridges and what not? As such, the content of cement is present in each and every constructional activity. The production of cement is regarded as a major nation-building industry, whose importance in a developing economy can never be over-emphasized. Considering the role of cement in the economic development of India, the cement industry has been accorded a place of pride in the scheme of priorities for the development of industries. India is the fourth largest producer of cement in the world, the first three being China, Japan and United States of America. The per capita
consumption of cement in India is around 60 kgs as against world average of 220 kgs. The economic development of a nation banks upon industrial development, transport, rural development, agricultural development and housing. As such, cement is indispensable to the growth of all these sectors which contribute to the ultimate economic development.

III Cement in India:

This chapter throws light on the factors that lead to the immense popularity of such a glamorous grey-powder called cement. It did not receive due attention under the foreign rule in India. But it assumed primordial place in independent India, so far as Indian Five Year Plans and their execution were concerned. During the First Five Year Plan the production target was 4.8 million tonnes and the achievement was 4.6 million tonnes. In the Second Five Year Plan the target fixed was 13.0 million tonnes and production was 8.0 million tonnes. During the Third Five Year Plan target was 13.0 million tonnes but the actual achievement was 11.0 million tonnes. During the Fourth Five Year Plan the target was 18.0 million tonnes but the production was 14.7 million tonnes. In the Fifth Five Year Plan the target was 20.8 million tonnes but the achievement was 19.4 million tonnes.
In the Sixth and the Seventh Five Year Plans the targets were 32.5 and 49.0 million tonnes, but the achievement was 30.2 and 45.0 million tonnes respectively. The production of the capacity of cement at the end of 1991 was 65.5 million tonnes inclusive of 5 million tonnes in the mini sector. The capacity is estimated to reach 90 million tonnes by the terminal year of Eighth Plan (1996-97) and 100 million tonnes by the turn of the century. On the basis of demand-assessment, targets were fixed for both capacity creation and cement production. But these two targets were hardly achieved. Consequently, in plan after plan the acute shortage of cement was experienced. Cement was brought under the purview of Cement Control Order of 1956 for price and distribution. The control on cement continued till 1982, when partial decontrol policy was announced. Earlier cement was decontrolled for a brief period during the two years 1966 and 1967. In the year 1982, there was growth in cement capacity but not at the requisite pace. This resulted in perpetual shortage till 1986. Cement became surplus from 1987 onwards. Cement was totally decontrolled with effect from the 1st March, 1989. The studies which have been conducted regarding demand for cement from time to time and the emerging demand and supply scenario show that domestic demand for 1994-95
would be around 85 million tonnes. The capacity requirement for 1994-95 would be, therefore, in the range of around 85 million tonnes as against the present capacity of 65 million tonnes. A capacity of around 12 million tonnes is in the pipeline, though in the next two years, no major cement plant is likely to appear on the scene and it will accentuate the shortage. As it is, there appears to be a gap of around 8 million tonnes in the capacity creation.

IV GENESIS OF MINI CEMENT PLANTS :

The production of cement by large scale units involves large capital investment, longer time for machinery fabrication, bottlenecks in transportation, imbalances caused by large-scale movement of workers from their original places of living, constraints in uninterrupted operation of plants, difficulty in exploiting small and scattered limestone deposits, more skilled and qualified personnel, huge man-power requirements and suitable power source. All these factors logically led to the genesis of mini cement plants.

V NEED AND CASE FOR MINI CEMENT PLANTS :

Socio-economic advantages like employment potential, exploitation of natural resources and intensification of regional development necessitate the establishment of
mini-plants. Less investment, scattered limestone deposits, lower gestation period, upliftment of local economy, simple handling of equipments, economical transportation, indigenous technology for cement machinery manufacture, assured efficiency etc. are the factors which make a case for mini cement plant.

VI. LOCATION OF MINI CEMENT PLANTS:

The location of large cement plants demands the availability of large limestone deposits. Wherever limestone deposits are small and scattered and efficient transport system is absent, it calls for the setting up of mini cement plants.

VII. TECHNOLOGY FOR MINI CEMENT PLANTS:

At present, the following five technologies viz. the Fuller Pyzel fluidised bed process, Reba flame firing sintering grate, Travelling grate, Rotary kiln and Vertical Shaft kiln are available for mini cement plant for manufacturing cement. Of them the VSK technology is the most advantageous.
VIII ECONOMIC STUDY OF LOKAPUR CEMENT PLANT:

This chapter presents an integral study of mini cement plant at Lokapur in all its facets like the nature of mini cement plant, geological backdrop, infrastructure, establishment, investment, financial tie-up, working, capacity of output, technical amenities, availability of raw materials, transport and communications, availability of man-power and so on. It also gives the break-even analysis of mini cement plant at Lokapur and the large cement plant of Kanoria Industries Ltd. Bagalkot and A.C.C., Bombay. A comparison of mini cement plant and large scale cement plant as regards the resource utilization has also been made.

IX SOCIO-ECONOMIC IMPACT OF THE PLANT

There is a discernible impact of the Lokapur Cement Plant on the region. There is a need for proper authority to increase the impact of the plant on the socio-economic conditions around.

X MINI CEMENT PLANT AND POLLUTION OF ENVIRONMENT:

The mini cement plants are free from water pollution as no effluents are involved. Even as regards air pollution of both particulates and undesirable gases, the CRI-VSK ensures
negligible emissions of the latter such as carbon monoxide, oxides of nitrogen etc. as the good operating conditions of the kiln generally prevent the emission of such gases. The generation of particulates is inherent in the manufacturing process and the associated unit operations which are controlled by the application of high efficiency dust collectors, wherever required. The various equipments fixed by the Lokapur Cement Plant to curb the dust pollution have been enlisted.

XI CONCLUSION

The study of the Lokapur Cements Private Limited has registered signal achievement in the sphere of cement industry. The progress it has made and the strides it has taken even in its infant stage are incontestably remarkable. There are vicissitudes in the life of an industry like 'tides in the affairs of men'. This plant too is no exception to this universal rule as it is struggling to find itself well-saddled. The study of mini cement plant at Lokapur which is under reference shows that the mini cement plants should be encouraged by the government since they are employment oriented. They minimise the regional imbalance and cause less pollution.
REFERENCES