International Journal of Engineering and Management Research
e-ISSN: 2250-0758 | p-ISSN: 2394-6962
https://ijemr.vandanapublications.com

Peer Reviewed & Refereed Journal
Volume-13, Issue-5 (October 2023)
https://doi.org/10.31033/ijemr.13.5.10

A Study of the Significance of Mini Cement Plants in Building A Self-Reliant Economy

Rashmi Sharma[1] and Dr. Surajit Kr. Bhagowati[2]
[1]PhD. Scholar, Gauhati University and Assistant Professor, ADP College, INDIA
[2]Research Guide, Gauhati University and Associate Professor, Nowgong College, INDIA

[1]Corresponding Author: sharma.rashmighy@gmail.com

Received: 26-09-2023 Revised: 11-10-2023 Accepted: 27-10-2023

ABSTRACT

Nowadays, usage of cement is recognized as the most influential yardstick of urbanization vis-à-vis development of the economy. With the increasing demand for this wonder material, the mini cement plants are emerging as the counterpart of large plants in making the material available in the remotest of locality. In this process, they are remarkably fostering self-reliance while giving due consideration to environmental protection too. In this paper, attempts have been made to highlight the significance of mini cement plants in encouraging local entrepreneurship along with shaping a concrete economy for the region. The study will also try to analyze the performance, problems, and prospects of the mini cement plants along with the extent to which various factors influence their existence in the region of study.

Keywords-- Mini Cement Plants, Entrepreneurship, Sustainable Regional Development

I. INTRODUCTION

Cement is undoubtedly the essence of construction. It is the most widely used man-made material in existence. The constant and increasing demand for modern structure in the developing world has made cement the second most consumed commodity after water (WBCSD 2002). Worldwide, on an average, approximately 1 ton of cement per person is produced annually.

Cement Industry is one of the largest industries of the world and occupies a predominant position as a basic industry to accelerate development and enhance employment generation capacity of a region. This mineral based industry ranks next only to Steel in construction material and forms the bedrock of all modern infrastructures. In fact, the per capita consumption of cement is taken as an important indicator of the industrial vitality of a country. The economic significance of the cement industry is also evident from its long and diversified supply chain that contributes 5.4 per cent of global GDP and 7.7 per cent of global employment (Schlorke 2020). Recognized as a core industry, cement manufacturing is capital-intensive, energy-intensive and transport-intensive too. It is also the basic and consumer industry whose product is the need of the development of modern civilization.

India is the second largest producer of cement in the world following China. In fact, both these countries represent almost 90% of the global cement market. With 509 million metric tonnes per year (MTPA) of cement production capacity as of 2018, India accounts for over 8 percent of the global installed capacity as of 2018(CMA Reports, 2018). The Indian cement industry uses the most modern and world-class technology and is a very promising manufacturing segment. Cement is an important part of our industrial infrastructure, providing direct and indirect employment to many persons and contributes a major part to GDP. In FY20, the production of cement stood at 330 million metric tonnes (IBEF,2022). Of the total capacity, 98 percent lies with the private sector and the rest with the public sector. A total of 210 large cement plants together account for 410 MT of installed capacity in the country, while 350 mini cement plants make up the rest of the estimated capacity of around 11.10 MT. The top 20 companies account for around 70 per cent of the total production (IBEF, 2017). The Indian Cement Industry is expected to continue its fast-paced growth and attain installed capacity of 850 MT by 2030.

The rising opportunities in the cement sector motivated the small entrepreneurs to join in by setting mini cement plants to serve the local markets of their areas. Depending upon the easy availability of raw materials and accessibility to local markets, several such plants surfaced in the adjoining areas of Assam-Meghalaya border and Karbi Anglong- North Cachar Hills districts of Assam. These mini cement plants soon became an integral part of the cement industry contributing significantly towards the demand of cement in the rural segment, government projects and among the less privileged sections of the society.

At present, the demand of cement in NE States is about 7.5 million tonnes, out of which 65% is produced in Assam, 8% in Meghalaya and balance 27% is fed from the other neighbouring states. The eastern states of India are likely to be the newer and virgin markets for cement companies and could contribute to the bottom line in future.

Peer Reviewed & Refereed Journal
Volume-13, Issue-5 (October 2023)
https://doi.org/10.31033/ijemr.13.5.10

II. MINI CEMENT PLANTS

As per the Excise Notification no.4/2007-Central Excise dated 1st March, 2007 "Mini Cement Plant" means:

i) a factory using vertical shaft kiln, with installed capacity not exceeding 300 tonnes per day or 99,000 tonnes per annum and the total clearances of cement produced by the factory, in a financial year, shall not exceed 1,09,500 tonnes, or

ii) a factory using rotary kiln, with installed capacity not exceeding 900 tonnes per day or 2,97,000 tonnes per annum and the total clearances of cement produced by the factory, in a financial year, shall not exceed 3,00,000 tonnes.

The Government of India announced on 4th of January 1979 (vide Notification No.9-28/78-Cem), the policy for promotion of mini cement plants, entailed with several incentives and concessions. While enunciating this policy, the following socio-economic objectives were identified for the mini cement manufacturing units:

1. To bring Cement industry within the financial access of smaller entrepreneurs.
2. To create a sense of ownership among entrepreneurs with relatively smaller means.
3. To enhance employment opportunities in rural areas on a well-dispersed basis.
4. To contribute towards uplifting the local economy.
5. To generate quicker returns on investment owing to low gestation period.
6. To facilitate exploitation of scattered and smaller deposits of limestone.
7. To ensure economic utilization of industrial wastes and by products.
8. To develop cement industry in regions with difficult accessibility.

With time, the mini cement plants positively advanced towards evolving a new generation of entrepreneurs, developing the local regions, enhancing availability and accessibility of cement etc. However, the objectives of being synergistic with the large plants in the remote and unexplored areas did not seem to be effective.

Advantages of Mini Cement Plants

P.N.Dhar and H.F.Lydall in introduction to their book, "The Role of Small Enterprise in Indian Economic Development" have observed that "The promotion of small scale industries has been widely recommended as one of the most appropriate means of developing industry in over populated backward countries",(Ministry of Small Scale Industries , Government of India ,2006).

Like other small-scale industries, Mini cement plants also have certain unique features that distinguish them from the large plants.

- It is not feasible for the large plants to access the scattered limestone deposits that are available in the remote areas without adequate basic infrastructural facilities. The mini cement plants could harness the possibility of exploiting the cement grade limestone of such inaccessible areas, thereby contributing towards the goal of achieving a socialistic pattern of industrialisation.
- The MCP bring in various socio-economic benefits like intensification of regional development, creation of employment opportunities, optimum utilisation of locally available capital, labour, technology, resources etc.
- The mini cement plants mostly adopt the new dry process for cement manufacturing that is energy-saving and meets the requirements of environmental protection. The production process does not involve any effluents and hence is free from water pollution; also, the technology used in VSK plants ensures negligible emissions of greenhouse gases.
- With use of smaller, simpler, and cost-effective machinery, the production process in mini cement plants is less complicated as compared to the large plants.
- The investment cost of a mini cement plant is lower than that large-scale cement plant, which makes it suitable for small entrepreneurs. Against the requirement of Rs. 3500 per tonne of capacity of large plants, capital costs for mini-cement plants come to about Rs. 1400 to Rs. 1600 per tonne (ICRA 2006).
- The short gestation periods of mini cement plants assure quick returns and these results in rapid pace of economic development.
- The USP (Unique Selling Point) of MCP is that due to the smaller scale, they can respond quickly to market and environmental trends.
- By promoting decentralized development of industries, the MCP helps in removing regional imbalances in the country.

III. REVIEW OF LITERATURE

Nirmal, Bhojendra Kumar (1982) in his research paper "Cement Industry in Madhya Pradesh", discussed several incentive schemes introduced by the Government of India for the mini cement plants. These schemes focused on optimum utilization of the unexploited limestone deposits in the country and enhancement of cement availability. In addition to these, the Government also aimed at rapid industrialization of the industrially backward areas through the mini cement plants.

Das (1987) extensively studied the cement industry of his period and highlighted on all factors related to locations, degree of concentration, competition, capacity, efficiency, performance appraisal, procurement of materials, pricing policies as well as Government measures. To study the structural change in the industry

Peer Reviewed & Refereed Journal
Volume-13, Issue-5 (October 2023)
https://doi.org/10.31033/ijemr.13.5.10

and its implications, the writer analyzed 18 companies for the period 1971-1980. The major findings of the study revealed that there was a high degree of concentration existing in the cement industry. It suggested that to lessen the dominance of large industrial houses, more new entrepreneurs must be encouraged in the industry so that market concentration can be reduced to optimum expansion of capacity.

Dr. Anand D. Mulgund (1992) in his thesis on "The Economics of Mini Cement Plants at Lokapur" brings to fore the arguments that despite high demand for cement, a large number of small limestone deposits were lying idle due to their inability to sustain the conventional large size cement plants. He stressed on the fact that India has numerous scattered deposits of limestone and the utilization of these to the fullest is possible only through the mini cement plants and not the large- scale plants. He also added that in a developing economy like India, with limited availability of capital, mini cement plants with moderate investment expenditure are more viable than the large ones which demand heavy investments. According to him, the north-eastern part of the country has abundant sources of unexploited limestone and the mini cement plants are an ideal solution to profitable exploitation of such deposits. Considering the socio-economic impact of mini cement plants, the writer says that the mini cement plants not only support dispersal of industrial activities in the rural areas, but also help in creating economic and social infrastructure for benefitting the rural economy. Emphasizing the significance of mini cement plants, he says that such plants are capital-saving, technically feasible, economically viable and ecologically sound.

Gokarn and Vaidya (1993) undertook their study by classifying the cement industry into three types of firms, (i) Big Old firms (ii) Big New firms (iii) Minis. The study then tried to analyze the performance of these firms post decontrol and opined that the competitive nature of the cement industry boosts the new entrants which leads to decline of both price and profitability. At the same time, there are several constraints in the way of graceful exit of the Big Old firms and thus firms with superior technology can sustain in the industry.

J.B. Ganguly (1996) in his research paper titled "Status of and Sociological Constraint on Industrial Development in North-east India" explained the comparative benefits and opportunities between large scale and small scale. The writer here focused on the opportunities prevailing in the northeastern region which is abundantly blessed with mineral resources as well as workforce. Procuring large investments is a little difficult in the region, yet if the small-scale sector takes the core position in exploiting these resources, then a successful industrialization program can take the northeast towards development. The small sector can help in diversifying the productive activities and generating surplus for enhancing savings and investments in the region, thus bringing in sustained economic development in the region. The writer also added that the large scale always stands at an advantageous position as compared to the small- scale sector, but if the latter applies necessary entrepreneurial skill in mobilizing capital, adopts higher technology for turning out cost-effective output of goods and services, marketing of output etc. along with improved management system and government support; it can certainly help in the sustenance of small-scale amidst competition.

Availability of raw materials, therefore, is a vital element that affects the location of any cement plant and mini plants are viable only if they can bag the necessary resources conveniently. While maintaining feasibility, the mini cement plants must combat the large-scale competition in the industry, but at the same time, their effective practices can significantly contribute towards the regional development of their areas.

IV. OBJECTIVES OF THE STUDY

1. The paper aims at studying the performance of Mini Cement plants in northeast India.
2. It focuses on highlighting the way such small-scale units are contributing towards achieving self-reliance.

V. METHODOLOGY

The paper presents an analytical study of the subject. It is based on both primary and secondary data. For collection of primary data, a questionnaire has been prepared and the management of the sample plants were directly interviewed. The secondary data has been collected from the books, journals, newspapers, internet sources etc. The area of study will have the focus on establishing the importance of mini cement plants in meeting up the infrastructural requirements and assisting in socio-economic development of the region.

VI. RESEARCH AREA

In Assam, mini cement plants are mostly found in either the Assam-Meghalaya border areas or Nagaon-Hojai districts. This is due to the availability of necessary raw materials and well-developed communication network in these regions. Based on the convenience of the researcher, the area of study is confined to the mini cement plants of Nagaon and Hojai districts of Assam.

VII. LIMITATIONS OF THE STUDY

1. The study does not cover all the districts of Assam and thus generalization may not be possible of findings with that of the whole state.
2. Lack of supportive information by the cement industry of Assam will hinder the extensive coverage of the study.

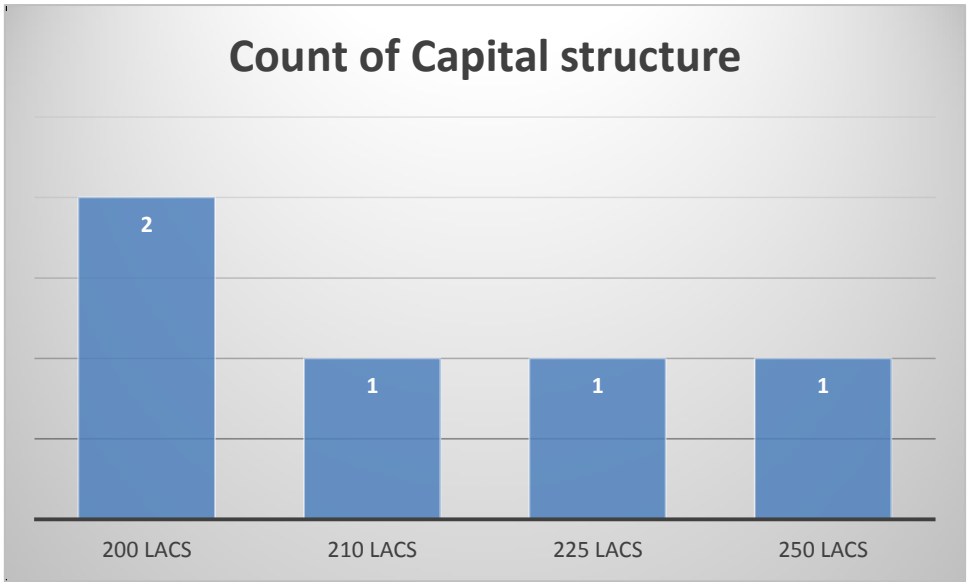
Peer Reviewed & Refereed Journal
Volume-13, Issue-5 (October 2023)
https://doi.org/10.31033/ijemr.13.5.10

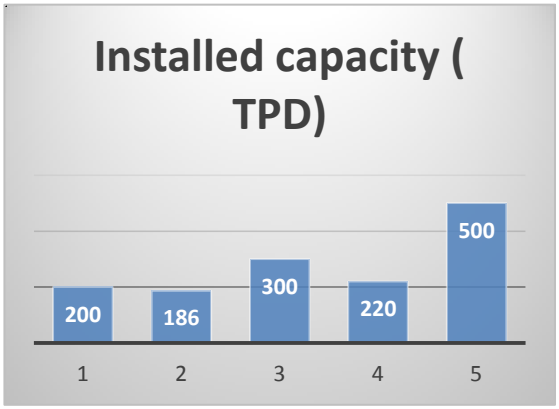
VIII. ANALYSIS OF THE STUDY

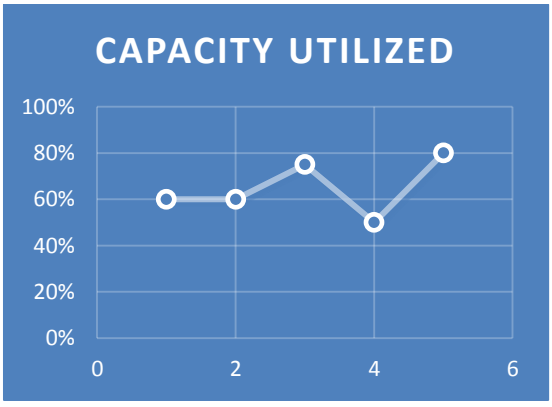
As per the Cement Statistics, September 2001, published by Cement Manufacturing Association, there was only one cement plant in Assam with an installed capacity of 0.20 MT but currently, there are around 20 active cement plants in Assam with huge installed capacities.

The Nagaon and Hojai districts of Assam are known for the extensive cement market and flourishing construction sector. In addition to this, the adjacent districts of Karbi Anglong and Dima Hasao are abode to limestone deposits which is the main raw material for cement industry. As such, there are several mini as well as major cement plants in and around this region. The construction industry of the area under study, thus, serves as the most convenient and profitable market to the nearby cement plants. At present, there are 6 cement plants in the area (1 major and 5 minor).

The mini cement plants under study have been established between 2005-2012 with an average investment of 220 lacs. 2 of the plants are operating with Vertical Shaft Technology (VSK) and the other 3 are grinding units which procure clinker from other clinkerisation units and grind them into fine cement.







The capital structure of the plants under study varies from 200 lacs to 250 lacs i.e. an entrepreneur with an investment of around 2 crores can start a mini cement plant. The installed capacity of the plants ranges between 186 TPD and 500 TPD; but none of the plants in the research area has successfully produced to the optimum level. 1 of the 5 plants utilizes only 50% of the installed capacity annually, 2 of them utilizes only 60%, 1 utilizes 75% and only 1 plant utilizes 80% of the installed capacity. It means that the mini cement plants are yet to expand their reach to gain the economies of maximum production. Yet certain factors contribute towards motivating the small entrepreneurs for setting up mini cement plants.

Peer Reviewed & Refereed Journal
Volume-13, Issue-5 (October 2023)
https://doi.org/10.31033/ijemr.13.5.10

Reasons behind setting up MCP

- Growing demand in the market
- Prospective sector with reasonable investment
- Availability of raw materials
- Less Capital Investment
- Readily available Dealers network

These factors induce the entrepreneurs to get started with their initiatives. While implementing their ideas into feasible projects, they create employment for the local people and provide a variety of other benefits to the society. These plants have expanded their reach and network to almost all the north-eastern states.

Distribution network

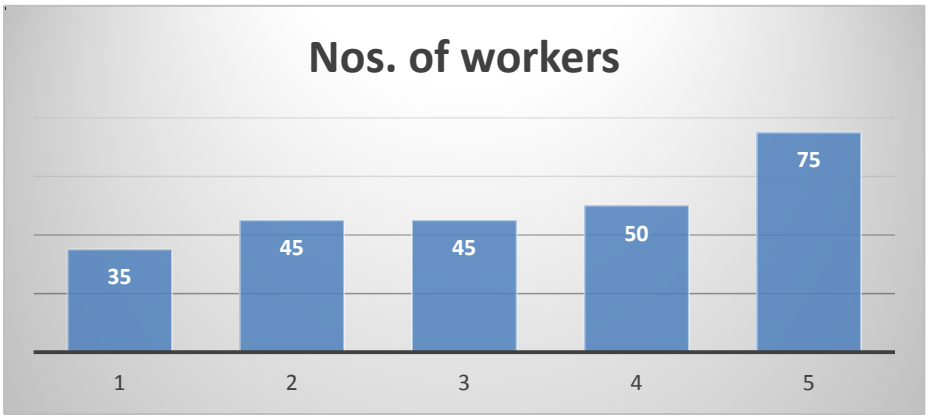
PLANT 1: Sonitpur, Upper Assam, Arunachal Pradesh

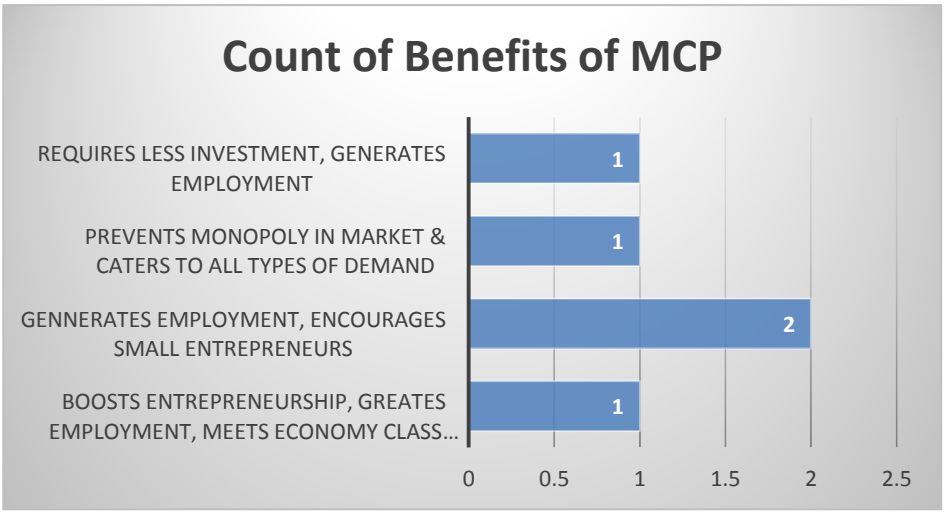
PLANT 2: Nagaon, Hojai, Karbi Anglong(KA), Golaghat, Jorhat

PLANT 3: Tinsukia, Dibrugarh, Jorhat, KA, Nagaon, Tezpur, Lakhimpur, Arunachal Pradesh

PLANT 4: Nagaon, Morigaon, Tezpur, NC Hills, KA. North Bank & Upper Assam

PLANT 5: Assam, Arunachal Pradesh.Nagaland, Manipur





Peer Reviewed & Refereed Journal
Volume-13, Issue-5 (October 2023)
https://doi.org/10.31033/ijemr.13.5.10

Benefits of MCP

- Requires less investment
- Boosts entrepreneurship,
- Meets economy class demands
- Prevents monopoly in market
- Generates employment
- Encourages small entrepreneurs

The main advantage of mini cement plants is that they provide employment opportunities to rural and remote areas and make cement easily available there. Further, they help in dispersal of production capacity and reduce strain on transportation structure. The case for developing mini cement plants has arisen from the high cost of installing viably sized conventional cement plants. Assam has about 15 small cement manufacturing units, with each unit having a production capacity of 100-150 tonnes per day. The small units encourage small entrepreneurs to develop local employment. They favour cement production not only because of its high demand but also because the process uses readily available raw materials and has low associated production costs. Moreover, if the units are based closer to the limestone deposits, it helps in cutting down the cost of logistics, which is a major expense for any cement plant. The mini cement plants also get some tax subsidies from the government in the form of excise cuts. Besides, the technology applied in mini cement plants is simple, it doesn't need highly skilled manpower. That helps in keeping the overhead costs low.

Although the mini cement plants are desirable for the socio-economic upliftment of a region, the cement companies today, are going ahead with mergers and acquisitions to maintain economic viability, thus creating varied challenges for the mini plants.The sources of raw materials are not within the direct access of the mini plants as most of the limestone and coal available in the state are under the lease of large players. As such, the small plants must depend on the larger ones for the basic materials requirement at the latter's manipulated credit policies. The production cost of mini cement plant thus, goes up and the gap in the prices of large players and smaller ones also decreases. When there is a marginal difference of Rs.10-15 per bag between the product of big plants and those from the smaller units; it is needless to say that consumers are snow going for bigger brands. In Assam, most of the limestone deposits are found in and around Karbi Anglong ad Dima Hasao districts. The presence of the most important raw material i.e. limestone has made the location quite suitable for setting up cement plants, especially mini plants that cover the adjacent districts of Nagaon and Hojai. The area, therefore, holds high prospects for mini cement brands. But contrary to that, it is seen that the performance of mini plants is declining gradually; some are being taken over by the large plants while others are struggling for their survival. As per the statistical data (2012) of north-eastern cement industry, the mini cement plants were holding a market share of nearly 35% in the districts of Nagaon, Hojai, Karbi Anglong and Dima Hasao (all taken together) which has drastically been reduced to mere 17% as per the records of 2020. Of this 17% share occupied by the mini brands in totality, the consumption in rural markets is 44% while in the urban areas, the mini brands occupy mere 4% of the entire urban sales.

The major brands overshadow the mini brands with their huge promotional expenses and unusual technical assistance to the construction sites. On the other hand, due to limited availability of finances, the smaller firms cannot accelerate towards network expansion as compared to the mammoth organisations.

PROBLEMS FACED BY MINI CEMENT PLANTS

1. Scarcity of raw materials
2. Higher cost of production
3. Insufficient Branding activities
4. Competition from large plants
5. Transport hindrances
6. Lack of Government support

Peer Reviewed & Refereed Journal
Volume-13, Issue-5 (October 2023)
https://doi.org/10.31033/ijemr.13.5.10

IX. SUGGESTIONS

As per the findings of the study, most mini cement brands are consumed in the rural areas. From interviews with the retailers of these area, it was found that most of these cements is consumed for the Government Schemes for rural infrastructure such as, Pradhan Mantri Awaas Yojana (Gramin) and Pradhan Mantri Gram Sadak Yojana etc. Such Public Welfare Projects prefer to employ the mini cement brands that can be procured at lower rates and at the same time serves to empower local entrepreneurship. Promoting these mini cement plants can assist in filling up the demand-supply gap existing in the cement industry along with bringing socio-economic upliftment ot the region.

X. CONCLUSION

Mini cement plants are highly desirable in our developing economy as they provide employment opportunities to rural and remote areas and make cement easily available there. They not only help in dispersal of production capacity but also encourage the small entrepreneurs to make best possible use of their potentials. Cement has always been in high demand and mini cement plants can help in optimizing the market by making best possible use of the available resources. But it is only when the local entrepreneurs come to fore that the potentials of the grass root level can be exploited. Mini plants can well serve the purpose of upliftment of the isolated and untapped areas.

But contrary to that, the mini plants must hold up against several odds to remain in existence. There is an increasing trend of larger organizations joining hands to take advantage of scale, hence the mini plants find it very difficult to sustain themselves. Having loss making units, the smaller cement players either opt to switching over to other business or give in to the large players by being a subsidiary to them. As such, a relevant and systematic study into the problems and issues of the mini cement plants is indeed significant to find out the odds and barriers to their sustenance and growth.

REFERENCES

[1] Arora, R.R. & Sarkar, R. (2008). *Detecting cartels in the Indian cement industry: an analytical framework. 11th Convention of the Strategic Management Forum, Kanpur, India*.

[2] Bhanu, V. (1995). Liberalisation and performance of cement industry. *Economic and Political Weekly, XXX*(34).

[3] Buckley, P., Pass, C. & Prescott, K. (1988). Measures of international competitiveness: Critical survey. *Journal of Marketing Management, 4*, 175-200.

[4] Das (1987). *Cement industry of India*. New Delhi: Ashish Publishing House.

[5] Das, G.(Ed). (2005). *Structural change and strategy of development: Resource-industry linkages in north-east India*. New Delhi: Akansha Publishing House.

[6] Dayanandan, R. & Arputharaj, A. Nilasco. (2012). *Entrepreneurship development and small business management*. New Delhi: Deep & Deep Publications Pvt. Ltd.

[7] Desai, Vasant. (1983). *Problems and prospects of small-scale industries in India*. Bombay: Himalaya Publishing House.

[8] Dr. K. C. Biswal & Y.B. Lyngdoh. (2014). Impact of working capital on profitability of cement companies in Meghalaya. *Journal of Business Management, Commerce and Research, 2*(6), 68-87.

[9] Eheidu, C. (2014). The impact of liquidity on profitability of some selected companies: the financial statement analysis (FSA) approach. *Research Journal of Finance and Accounting, 5*(5), 81-90.

[10] Ganguly, J.B. (1996). Status of and sociological constraints on industrial development in north east india. In: B. Dutta Ray and Prabin Baishya (eds), *Sociological Constraints to Industrial Development in North East India*. New Delhi: Concept Publishing Company.

[11] Gokarn, Subir & Vaidya, Rajendra. (1993). Deregulation and industrial performance- The Indian cement industry. *Economic and Political Weekly, 28*(8-9).

[12] Hrahsel, Anna Lalruatfeli & Umdor, Sumarbin. (2019). A temporal analysis of the growth of manufacturing industries in northeast India during 1981-82 to 2014-15. *Social Change and Development, XVI*(2).

[13] Karthikeyan, M. (2012). *Entrepreneurship in cooperatives*. New Delhi: Discovery Publishing House Pvt. Ltd.

[14] Muiru, C.W. (2016), Factors affecting competitiveness in the cement industry in Kenya, 2000-2015. *Project Report submitted to the Department of Economics, University of Nairobi*.

[15] Mulgund, Anand D. (1992). Economics of mini cement plant at lokapur. *PhD. Thesis submitted to the Department of Economics, Karnatak University, Dharwad*.

[16] Muthukrishnan, S. (2002). Productivity in cement industry—A study with special reference to Tamil Nadu. *Madurai Kamaraj University*, pp. 1-32.

[17] Nirmal, Bhojendra Kumar. (1982). Cement industry in Madhya Pradesh. *PhD. Thesis submitted to the Department of Economics, Dr. Harisingh Gour Vishwavidyalaya, M.P.*

[18] Pande, G.C. (1983). Field report on socio-economic achievements and emerging issues in hill development. *Seminar on Development of*

Peer Reviewed & Refereed Journal
Volume-13, Issue-5 (October 2023)
https://doi.org/10.31033/ijemr.13.5.10

Hill Areas, Himalaya Publishing House, Bombay.

[19] Rahman, M. & Dey, N.B. (2010). *Micro and small enterprises in north east India: Problems and prospects*. Guwahati: EBH Publishers, Panbazar.

[20] Raj, S.N.R. & Mahapatra, M.K. (2009). Growth and productivity performance of small manufacturing enterprises (SMEs): Insights from major states in India. *Journal of Indian Business Research, Emerald Group Publishing Limited, 1*(1), 39-56.

[21] S. Vimala. (2018). Study the problem faced by small-scale industries. *Shanlax International Journal of Commerce, 6*(S1), 116-119.

[22] Saikia, Parinita. (2018). Role of micro enterprises in economic development of assam: with special reference to kamrup district. *PhD. Thesis submitted to the Department of Commerce, Gauhati University*.

[23] Sharma, P.V.; Y.V. Apparao. (1990). Indian cement industry-a regional analysis. *Indian Journal of Regional Science, XXII*(2).

[24] Sharma Rashmi & Bhagowati, S. (2020*).* A study of the retail market share of mini cement brands: With special reference to nagaon town. *Journal of Interdisciplinary Cycle Research, XII*(XII).

[25] Sudha Bagla. (2003). Cement industry in India: From monopoly to competition—A study. *PhD. Thesis submitted to Department of Management, V.B.S. Purvanchal University*.

[26] Susmita Das Gupta. (2002). Globalisation and cement industry. *EPW*.

[27] Vijay, Kumar. (1992). Cement industry in India with special reference to production/demand. *Unpublished Thesis, Department of Economics, Osmania University*.

[28] *Reports on Indian cement industry analysis*. Available at: www.ibef.org.

[29] *How to start a mini cement plant*. Available at www.entrepreneurindia.com.

[30] Chand Smriti. *Growth and distribution of cement industry in India*. Available at: yourarticlelibrary.com.