CHAPTER-VI

SUMMARY AND CONCLUSION
CONCLUSION

In this chapter we shall draw together the ideas and impression arrived at from the previous chapters of this study under the theme of problems and prospects of brick manufacturing industry in Manipur. Further, it explores and offers suitable solutions which seem destined to affect significantly the future development of brick industry, along with the summary of the major findings of the present study.

In Chapter One we attempted to highlight the need and problem of the study on the brick manufacturing industry in the economy of Manipur along with the socio-economic profile of the state. It also bestowed the objectives, the hypothesis and the methodology adopted in conducting with the scheme of chapterisation of the study.

While doing this an attempt has been made to explain the profound value of brick manufacturing industry in a state where other industrial activities are almost nil, and majority of the population are engaged in agriculture with low productivity. It is justified that since brick manufacturing industry is labour intensive one it can absorb increasing rural work force and could improve their standard of living. Brick has become a basic raw material for construction of houses for common
people and development of infrastructure for overall economic development of the state.

Manipur is a tiny hilly state, connecting with the rest of the country through only two National Highways viz., NH-39 and NH-53. Since 1961 rate of growth of population, literacy and unemployment are continuously rising in the state. It has been observed that male and female workers have been participating in economic activities more or less proportionately in the state. Main workers which form the major work force in the state have been declining while the marginal workers have been increasing significantly.

Due to backwardness of agriculture accompanied by absence of large scale manufacturing industry the state income is low and fluctuating. The per capita income at Current prices increased from Rs. 1,419 in 1980-81 to Rs. 13,658 in 2002-2003(Q)\(^1\) registering an increase of 862.51 per cent. The per capita income at Constant (1980-81) prices has increased from Rs. 1,419 in 1980-81 to Rs. 2,592 in 2002-03(Q)\(^2\) registering an increase of 82.66 per cent.

In Manipur about 80.00 per cent of the total cultivated area is cover by paddy\(^3\) with low productivity due to low percentage of irrigated area.

\(^1\) Govt. of Manipur, Directorate of Economics & Statistics, State Domestic Product of Manipur, 1996-97 Imphal, Table No. 3 & 4.
\(^2\) Govt. of Manipur, Directorate of Economics & Statistics, Estimates of State Domestic Product, Table No. 12 & 17.
\(^3\) Govt. of Manipur, Directorate of Economics & Statistics, Economic Survey Manipur 2002-03 op.cit.,p.VII
The total rice grown area during 2001-2002 is recorded at 162.57 thousand hectares\textsuperscript{4}. Out of it, the gross irrigated area is recorded as 40.14\textsuperscript{5} thousand hectares i.e. 24.96 per cent. Wide prevalence of poverty stricken farmers and eventual inability to invest sufficiently to their traditional method of cultivation.

State Government’s initiative for industrialization with due emphasis on the prospective and potential areas of public sectors industries became perverted due to inadequate raw materials, poor infrastructures, financial constraints, paucity of funds for maintenance etc. The state is totally based on imported industrial finished goods and unables to create a self reliant economy and creation of jobs. Lack of employment opportunity resulted socio-economic instability. In such a juncture, the study has the elation to throw light on the role of brick manufacturing industry with epecial reference to the sources of rural employment and income.

A total of 5263 persons comprising of 2775 male workers i.e. 52.73 per cent and 2463 female workers i.e. 46.80 per cent are engaging directly to 63 brick firms (42 TBFs and 21 SMBFs) in Manipur during 2004. Creation of assured employment to rural work force is a great boon to the state where the importance of agriculture as a source of rural employment and income have become stagnant.

\textsuperscript{4} Govt. of Manipur, Directorate of Economics and Statistics ; Statistical Abstract Manipur, op.cit., p.141.
\textsuperscript{5} Ibid., p.162.
In the Second Chapter of the present study we have examined the trend of sectoral employment in Manipur by grouping all the economic activities under three major heads viz., Primary, Secondary and Tertiary Sector. And it is observed that a large number of workers have been shifted from agriculture to services sector bypassing secondary or industrial sector particularly during 1991 to 2001 (Table 2.13). The size of worker in service sector was 20.34 per cent of the total main workers during 1991 and it increased to 43.76 per cent in 2001. It is a peculiar phenomenon which requires further examination. During the present study several attempts have been made to find out which sub-sector of the Tertiary Sector absorbed the highest number of workers, but could not materialize. However, it is clearly observed that number of workers in Secondary Sector has been declining throughout the period under investigation. The percentage of worker in Secondary Sector was 13.35 per cent in 1981, which declined to 9.66 per cent in 1991 and further declined to 6.55 per cent in 2001. From the trend of workers engaged in Secondary Sectors, we may conclude that industrial development in the state is almost negligible. However, due to increasing demand and favourable supply conditions brick industry in the state is flourishing without interruption. As brick industry is a labour intensive enterprise, there is enough scope for absorption of more workers irrespective of sex and level of education.
Chapter Three attempts to portray the emergence of brick manufacturing industry in Manipur and its growth upto the present with its role and position in the state.

The civilization of Sind Valley and Nile Valley knew the art of brick making as early as 10,000 years ago, the art reached Manipur only as early as 1250 A.D. It is mentioned that the Chinese captives taught the art to the people of Manipur. In those days brick firms were concentrated around the palace producing limited quantities which were used to construct a few temples, bridges and royal residential. The bricks were found quite long and wide but thin in size. It was after the introduction of the issue of pattas of the land owners in 1893 that, to ensure occupancy right of the cultivators, private brick firms started operation under the individual proprietorship at large scale in Manipur. Further, it was since 1989 with the emergence of BEM, the art attained the present stage of its development in the state.

With the gradual change in the socio-economic condition in Manipur, people of the state came to know the importance and uses of bricks. The old traditional indigenous materials for construction become obsolete especially in valley areas. There has been increasing demand for brick among the common people who are economically better off. In fact, bricks have gradually become the dominant materials for varities of structural purposes replacing traditional indigenous materials. The
significance of brick industry has emerged in the state and it become one of the most outstanding manufacturing industries in the state.

There are 63 running brick firms in the state during 2004. It comprises of 42 TBFs and 21 SMBFs located at 6 different Districts of the state viz. Imphal East District, Imphal West District, Bishnupur District, Thoubal District, Senapati District and Churachandpur District respectively. Imphal East District has 18 firms (13 TBFs and 5 SMBFs), Imphal West District has 17 (9 TBFs and 8 SMBFs), Bishnupur District has 8 TBFs, Thoubal District has 14 firms (6 TBFs and 8 SMBFs), Senapati District has only 1 (One) TBF and Churachandpur District has 5 TBFs. The growth of brick industry was very slow and remained unchanged but, after 1980 the industry made a rapid progress. The number of TBFs was only 4 in 1980 then increased to 14, 39 and 42 in the years 1990, 2000 and 2004 respectively. This indicates that the growth rate are estimated to be as 250.00 per cent during 1980 to 1990, 178.57 per cent during 1990 to 2000 and 7.69 per cent during 2000 to 2004 respectively. So far as the SMBFs are concerned, there was only one firm in the year 1990 which increased to 12 firms in 2000 and 21 in 2004. The growth rate are estimated to be as high as 1100.00 per cent during 1990 to 2000 and 75.00 per cent during 2000 to 2004.
Chapter Four presents the working of brick manufacturing industries in Manipur. In the state, bricks are manufactured either manually or with modern BEM. Some firms are operating under tiny industrial unit with TM in which manual are mostly used. Whereas some firms which are using power and machines are generally called as SMM of firming of brick operating under Small Scale and Large Scale Industrial Units. Under TM, sun drying was the only method adopted for hardening the raw brick whereas under SMM, raw-bricks are allowed to dry both naturally and artificially on the open ground or in drying sheds. Baking can be done in traditional kiln or in modern HDK. Machine-made bricks are usually heavier than manually made brick. However, it has higher crushing strength and low water absorption, better finishing, correct dimension and good to look at. Manually-made bricks still retain the demand despite the good market of mechanised bricks. Production cost of brick under TM is higher than that of SMM of firming. Apart from high cost of production operation in case of TBF is usually seasonal in character, and that of SMBF a perennial.

It is found that 4 female proprietors are operating brick firms in the state. Out of 63 proprietors 54 proprietors accounting for 85.72 per cent are experienced aged proprietors. TBFs operate during the dry season i.e. just after harvesting days (2nd week of November to last week of May). SMBFs on the other hand used to operate all the year round.
The basic raw-materials of brick manufacturing industry are clay soil, sand, firewood, coal, water etc. Soil and sand are available around the firm's sites. Fuelwood is also available from the nearby forest. Coal is not found in the state and imported it from other states viz. Nagaland, Assam, Arunachal Pradesh etc. For water adequate quantity of water is stocked at their own ponds situated at their firm's complexes.

Large number of labours are required where machines are used. Inversely smaller number of labours are required in manually made brick firms. TM incurs higher making charges, higher fuel charge, low quality and productivity, higher rate of wastage hence, higher cost of production. Whereas mechanical production reduces cost of production due to low making charges, higher productivity, higher fuel efficiency, better quality, less wastages etc.

Generally, marketing of brick is done at factory site. To promote maximum sales firms used to adopt different strategies such as:

- Advertising through attractive sign boards, radio, television, newspaper etc.
- Home delivery system by bearing free transportation cost to a certain distance.
- Concessions and discount in kind and
- Opening of retail shops at urban and semi-urban areas.
Interestingly, there is no fixed price of brick in the state. Commonly, the price of brick of Class-I category costs Rs.3,200/- (Three thousand two hundred) per 1000 bricks during 2004. While some firm charge not less than Rs.3,400/- (Three thousand four hundred) for the same quantity of the same category at the same time. Price discrimination among the firms is due to difference in firm location and their methods of production.

Manufacturing of brick is not so complex and requires less skill and training. However, for faster production of better quality which has its own attraction, the firms used the latest technology, equipments, tools etc.

Bricks firms in Manipur are set up with their own capital and supplemented by personal borrowing from the money lenders. Due to complicated process and lack of security they hardly approach to financial institutions. The minimum capital requirements for a TBF and a SMBF of large size in Manipur are Rs.30,37,800/- (Rupees Thirty lakhs thirty seven thousand and eight hundred) and Rs.1,71,69,900/- (Rupees One crore seventy one lakhs sixty nine thousand and nine hundred) approx.

Due to insecure and part-time nature of TBFs experienced labours migrated from other places are not willing to work at TBFs. Consequently, productivity of these firms are very low. In SMBFs secured and full-time job opportunities are provided and many efficient and experienced labours are absorbed. As a result, desired volume of production can be made in time.
The employment of brick makers, carriers, stackers, lifters, porters of finished bricks are done mainly on contract basis. The present wage rate of brick makers is Rs. 220/- (Rupees Two hundred and twenty) per 1000 bricks. Wages of the mistries and the ordinary workers are paid commonly weekly or fortnightly whereas the wages of firemen and persons who are engaged in selling and other administrative activities are paid on monthly basis.

Of the total workers engaged in different brick firms in Manipur, Imphal West District stood first with 1506 workers comprising of 704 (13.38 per cent) male workers and 802 (15.24 per cent) female workers accounting for 28.61 per cent. Thoubal District stood second with 1426 workers comprising of 826 (15.69 per cent) male workers and 598 (11.36 per cent) female workers accounting for 27.09 per cent. Imphal East District stood third rank with 1398 workers including 638 (12.12 per cent) male workers and 760 (14.44 per cent) female workers accounting for 26.56 per cent. Since there is no SMBF in Bishnupur District, Senapati District and Churachandpur District the total number of workers engaged are quite low. The total employment in these three Districts together constitutes only 17.73 per cent of the total workers employed in brick firms in the state during 2004. In a word, Imphal East District, Imphal West District and Thoubal District can be termed as a brick bowl of the State. TBFs have a production capacity ranging from 7 lakh to 15 lakhs bricks per season. Whereas, SMBFs have a production
capacity ranging from 20 lakh to 45 lakh bricks per annum. Larger the capacities of the machines applied, larger the employment opportunity because of the volume of production. The total production of bricks by 63 different firms during 2004 is estimated at 952.05 lakh bricks (352.75 lakh brick of 42 TBFs and 599.30 lakh bricks of 21 SMBFs). Both TBFs and SMBFs are playing an important role in the economy of the state by providing a considerable number of employment, supplying significant size of output and fostering the cause of industrial development in the state of Manipur.

The production cost for 1000 bricks under TM and SMM are Rs.1,653.88/- and Rs.1,560.33/- respectively. Again, income from the sales of the available finished bricks after baking 1000 raw-bricks under the two different methods are Rs.2,508.40/- and Rs.2,741.50/- respectively. Then, the net income is estimated at Rs.854.52/- and Rs.118.17/- i.e. Rs.0.85/- and Rs.1.18/- per brick. Thus, the total money income from all the firms (63 nos.) putting together during 2004 is estimated at Rs.1007.01/- lakhs approximately.

Chapter Five spells out various problems encountered by brick manufacturing industry which are likely to hamper the rapid growth and profitability of the industry and prospects of the industry in the state. It also attempts for future production possibility in the years 2005 and 2011.
Problems in procuring raw-materials and essential inputs are the basic problem of the industry. Since brick industry required more and more land for soil excavation and future expansion of the plant, it has to encroach on the scarce land resource in the state. Declining fuelwood supply in the state, due to imbalance between felling and re-generation the sources has become another serious problem. Long distance of the sources creates not only cumbersome when collecting but also pushing prices of it. While procuring coal, BEM and other parts relating to the machines, etc. from the other states the industry is confronting with many hardship due to transport bottleneck in the state. Power availability in the state is too low and uncertain for smooth functioning of the manufacturing processes which may cause labour lay off, delayed in production, late delivery etc.

Most of the brick firms are confronting the problem of finance. To renovate the firms huge amount of investment is required. Due to too long time consuming for formal gestures to be furnished and cumbersome in applying for institutional loans and least access to the sources of the funds, TBFs have been confronting the real and acute problem of inadequate working capital to support satisfactorily the investment in fixed assets and to ensure smooth functioning of the business operations. Practicing large number of TM firms with unsuitable process and low quality product and running intermittently and tardy industrial performance in the state is a brilliant example of financial constraint.
In Manipur, most of the bulk brick consumers have the behaviour of buying on credit. Credit sale is really a curse to the business. It leads to distress and loss in future. Applying low technology and lack of efficient production operation, most firms in the state resort to produce inferior quality with higher rate of wastage of the valuable resources which is also the main reason behind the slow growth of the industry.

Since there is no cheap form of transportation in the state, road transport is playing crucial role. Due to socio-economic crisis in the state, bandh, blockade, strike, agitation, become a common phenomenon which have been disturbing a lot in transporting the industrial raw materials from different sources. Due to non-availability of adequate spare parts and other unfavourable infrastructures in the state, producers are compelled to use their costly machines below its average production capacities.

The workers engaged in brick industry are composed of different workers of different characters as they are coming from different localities. To manage the workers effectively for smooth functioning of the business another serious problem.

The impact of using traditional kiln on air pollution and erosion of soil around the brick firms, due to the fumes emitted by the chimney, is really threatening.
During May to September TBFs suspend manufacturing due to rain. Some small firms are not able to arrange sheds for making, drying and roofed kiln. During rainy season construction works in the state is comparatively low when compared with dry season. Eventually, SMBFs also suffer a lot during these months with low production.

In spite of the constraints, we can be optimistic that brick industry with employment potential and generation of regular money income can grow further as the industry is based on labour intensive one. It can absorb rapidly growing underutilised labour force particularly in the rural areas where by and large brick firms are located.

Secondly, wages in brick firms are not so low and work is also not too much hard, complex, dirty, unrespected and uncomfortable. Rural work force are quite suited with works of brick firms.

Thirdly, in rural Manipur there is insufficient source of income to supplement the family’s meagre income.

Fourthly, since the demand for brick has been increasing and the speed of modernisation from traditionalism is very high in the state, there is a considerable potential for creating employment opportunities.
Fifthly, there is a good relationship between the proprietors and the employees. No discontent among the workers for their wages. Most of the workers have good sense of ownership which is one of the most important determining factors for developing the industry. Healthy working environment promotes efficiency and productivity which led the industry prosperous.

Brick industry can generate a reseable profit which may help both the proprietor & labour in the state. The following could be the main reasons which justify prospects of the industry in generating regular flow of money income.

Firstly, nature has been providing adequate provision of raw materials for the industry. The clay soil found in the state where the firms are operating contains high proportion of clay mainly composed of sand, clay, silt etc. which is the best suited for making best quality brick.

Secondly, there is no dearth of labour for the industry. A large number of uneducated and semi-educated youths are available in rural and urban areas who are looking for a job. At the same time skilled workers from other neighbouring states are also migrating in Manipur.
Thirdly, many funding agencies of private institutions are also inviting the firms for providing credit facilities because of the prospects of firms. Government of India is also giving a measure of incentives for construction of dwelling houses and construction of housing projects under World Bank.

Fourthly, since bricks tend to be expensive to import because of its volume and weight no other state is willing to export brick to Manipur. So, there is no competition between the local producer and producers of other states which may cause external inflicting injuries to discourage and repress to the industry directly and indirectly.

**SUGGESTIONS:**

This is in the light of the above discussion of brick manufacturing units in Manipur that several conclusions can be drawn and suggestion can be made for its prospects.

That raw-materials and concomitant infrastructure substantially determine the growth of an industry. So, before starting the industry one has to survey the location of the industry and find out whether enough stock of raw-materials and other pre-requisites are available or not because factory organisation tend to be quite immobile and once
established in a location tend to remain there. Again, right selection of location can save 10.00 per cent in cost of production and distribution. Judging the above statements the following factors may be suggested for selection of firm site.

Since brick industry is based on long run business planning of about 20 to 30 years, and raw-materials are bulky and weighty availability of suitable soil around the location of the industry is, therefore, recommended. Long distance of the sources of raw-materials will increase cost of production which ultimately shifted to final consumers. Typically, collecting raw-materials and other pre-requisites economically aggrandize in pulling the business profitable.

As brick industry is a labour-intensive enterprise availability of adequate labour in and around the location of the industry is, therefore, imperative because dependence on migrating labours creates additional problem for accommodation, but no such arrangement is required for the local ones. Again, local labours in general, have the sense of ownership and spirit of sacrifice than that of the migrant workers. This is the most important factor for speedy and long run development of the industry.

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The local labours consider the firm as their main granary, whereas, to the migrant workers it is a mere work place. Thus, the personal risk of the latter for the industry is less than that of the former. Difference in attitude and motives among the workers sometimes creates conflicts when working together. Occasionally, some key employees fled away from the industry due to the conflict which led to the industry unrest. Rural workers should be motivated to join the industry as their secondary source of income. This will reduce dependence on migrant workers to a great extent and will also restrict transfer of wealth to other states through migrant workers. In the recent past a good number of workers from neighbouring states have joined in brick firms in the state. This should be avoided by motivating local workers.

One of the major responsible factors for developing the industry is availability of suitable and adequate roads link with main roads or nearby pucca road because both the basic raw-materials and finished goods of the industry are bulky and weighty. Again, both supplier of the raw-material and the brick consumers are always gravited toward their economic affairs under favourable circumstances. So, in order to attract both the suppliers and the consumers, the location of the industry should be selected in such a place where the two prefer the most. Further, industries located near the roadside enjoy for double benefits; of exposing themselves for selling their products and hiring skill and cheap labours.
The clay required for making good quality brick should generally contain the following constituents.

<table>
<thead>
<tr>
<th>Clay fraction</th>
<th>35 to 50 per cent</th>
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<tbody>
<tr>
<td>Silt</td>
<td>15 to 25 per cent</td>
</tr>
<tr>
<td>Fine Sand</td>
<td>20 to 25 per cent</td>
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and it should be free from stones, gravel, and course sands. Clay testing should be practised as a obligatory for quality and productivity. It is being arranged by C.B.R.I. on request. The methods of testing are:

1. Sieve Analysis
2. Mean Analysis
3. Chemical Analysis
4. DTA Analysis
5. Extrusion Test

One of the simple tests of clay is that brick in wet condition kept in open ground for drying should not crack. Still a simpler method is to make a round ball with a stiff wet clay and allow it to dry in open ground. Good clay should not develop crack. Testing of clay should be practised before making bricks to reduce the potentiality of high rate of wastage and low rate of high quality products.

8. Semi-mechanised Brick Plant, op.cit. p.8
No industry can economically sustain itself if it does not prepare itself for absorbing the advantages and contributions made by modern science and technology. Rapid technological development ushers to higher productivity and maintains its place in the markets. Again good image of the firm induces minds of its consumers. Hence, proprietors should equip themselves with upto date and modern technology for rapid growth of the industry. In this regard, obsolete equipment and methods should be replaced with more efficient one to enable production at a lower cost. So technological development for manufacturing operation should be launched as far as possible. If firms are well acqripped with new and modern technology they can take the advantage of increasing demand in the market. Awareness programme may be organised for entrepreneurs who are using TM to change their mindset for adoption of new technology that will help them to aware long term prospects of brick industry in the state.

Productivity and quality of product of the industry depend solely on the production processes, and efficient and productive utilisation of its valuable limited resources. It is indispensable that labour should be properly managed by close supervision during manufacturing stages such as collection of soil, digging and mixing the clay with water (in case of manual making), transfer of raw bricks to drying sheds/ground, checking the raw bricks (whether sufficiently strong to permit stacking in kiln), feeding of fuel proportionately for obtaining a good and uniform baking, sorting different categories of finished bricks from the kiln etc.
Thus, the industry could reduce the rate of wastages of the valuable resources at minimum extent and could enjoy the fruit of the business by earning more profit.

The compressive strength of brick manufactured in Manipur is not defined, although "a common house brick is likely to show a range of 20-40MPa". Quality control is a staff function whose purpose is to co-operate the elements of production to produce at the desired quality level. So, proper motivational programme should be provided to the workers to develop enthusiasm such as healthy working environment, shelter for the key employees within the factory premises, recreational facilities for the workers to recharge their energies, human approach toward the workers such as regular payment of wages, incentives for wage increment for regular workers and advance payment to the workers for their urgent family needs which make them contented. Job evaluation (What to do? Who must do it?) is also a must. Above all, proper delegation to the employees increases the over-all efficiency of the employees and feeling proud among themselves to be a part of the industry and stabilize in their relation to the industry. Co-ordination among the workers and peaceful environment at the work site should be strictly maintained.

For development of the industry all the available factors of production should be utilised to the maximum extent. In order to avoid suspension at any stage of production processes adequate stock of raw-materials, spare parts of the machines, additional key employees etc. should be arranged as a precautionary measure.

Development of an industry depends, among other things, upon its marketing efficiency. Without good marketing the technically brilliant product can become yet another commercial white elephant.

To produce what market needs is a major thrust for development of an industry. The mere manufacturing of good product is not in itself a cause for success because the product must be accepted in the market by the consumers. For efficient handling and lying brick must be small enough to be picked up by the brick layers using one hand (leaving the other hand free for the trowel).

Time has changed and so has the standpoint. Earlier the boss was always right now-a-days the customer is never wrong. So, it is really significant to keep a close eye on the changing needs of the consumers now and then, because there is no business without buyers and consumers' satisfaction matter the most. In this regard, the

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12. Khan, R.R., Management of Small Industries, S. Chand & Company Ltd., New Delhi, 1979 p.76
13. Dave, V. Nalini., op.cit., p.256
manufacturers should decide first the preferences of the consumers whether it is more of modern machine made brick or traditional manual-made one. In order to maintain stable price, cost of production and wastages should be minimised as far as practicable. Since demand for brick is derived one its price is sometimes determined by the prices of related materials such as cement and iron rod. Entrepreneurs should observe price movement of complementary materials so as to avoid losses. While calculating cost of production interest of their own capital invested in the business should also be calculated.

The development of efficient low-cost marketing techniques also contribute to economic development\textsuperscript{16}. For speedy and efficient distribution, door delivery system of brick at a nominal transport charge and higher discount for the bulk purchasers etc. will accelerate the normal sale proceed of the industry. Again, a proper balance between production and sale volume is also needed to be studied in order to reduce the problems of over production and shortage of supply (In case of newly established firms which are located at far-flung localities). Exploring new markets such as opening of retail shops at urban and semi-urban areas is also a wise strategy. The prices and quality should always be competitive otherwise the product will not survive in the market\textsuperscript{17}.

\textsuperscript{16} James, K.J.J. and Bema, S.J., Industrial Entrepreneurship in Madras State Asia Publishing House, Bombay, 1960, p.171.
\textsuperscript{17} Dave, op.cit., p.290
Mass production could be supported only by means of distribution which is made possible by advertising\textsuperscript{18}. So advertising through a popular media which may carry the information to the consumers about the existence of the firms and its marketing guides should be adopted.

As indicated earlier, there is no alternative cheap transportation facility in the state, the industry has been hinging upon road transport. There is no report of providing transport subsidies by the state Government to the industry till date. In order to promote the industry the Government should provide 100 per cent transport subsidy on road traffic cost from the sources of raw-materials to the factories. Roads and bridges which link the factories should be improved and clear all the barriers and disturbances on routes for free flow of other complimentary goods of bricks such as cement, steel etc. Further, the state Government should extend every feasible co-ordination in reducing duty free export of bricks from the state and Brick Export Promotion Board may be initiated to inflate export. Necessary funds and technical assistance should be provided by the Govt. to improve existing units, and work with a few selected factories to develop and demonstrate new technology. Research programme should work closely not only with the factory workers, but also with the personnel/workers i.e. kiln setters and firemen. A multi-disciplinary strategy should be taken up with social scientists, marketing experts, architects, engineers and contractors

\textsuperscript{18} Harold, T. Amrine et al., op. cit., p.513.
through the demonstration programme. Evaluation and monitoring programme should be conducted in order that policy formulation can be translated after the demonstration programme. The contribution of this industry in the state’s economy in terms of employment and income generation should be given due recognition by the State Government, and necessary incentives and amenities be made to promote this industry.

It is also a fact that brick industry is a energy intensive industry. Energy accounts for more than 30 per cent of the cost of production. Irregular power supply is a big problem of the brick firms adopting modern machines. To install private generators for supplementing the poor and uncertain power supply shall aggravate the cost of production and already worse financial position of the industry. So, the Government should install Thermal Power Generating Stations to meet the growing demand for power. But, due to high cost of fuel and unfavourable financial position some units are working at no loss and no gain position. Without uninterrupted power supply all the suggestions for modernisation would have no meaning/value.

For extensive regenerating scheme of fuel-wood, mass education about the social forestry, and strict restriction of cutting and firing forest areas for meeting the increasing demand for fuel-wood should be initiated.
As mentioned elsewhere, one of the most crucial problems of brick industry is the problem of finance. If adequate provision for long-term and short term financial assistance such as grants, loans, tax reliefs etc. is made with a view to encourage and protect the local entrepreneurs the industry will grow of its own.

Co-ordination among factory owners by forming union of their own is one of the important aspects for development of this industry. A uniform price, at reasonable level, may be fixed so that small scale producers can be protected from price competition. It can help to minimise, to a certain extent, the financial crisis of an individual proprietor by extending necessary help and protects its members from victimization or injustice of the miscreants. Further, it can also check frequent run away of some key employees from one factory to another which disturb production process of some particular firms.

We have also tested the hypothesis presented in the First Chapter of this study and have found that the present study fully substantiate it that the ever growing demand for locally manufactured bricks in Manipur with her rich potential of the raw-materials the brick manufacturing industry will have good prospects in the long run. Secondly, the product will not only improve its quality but also will be able to meet the demand for the state in its perspectives.
From the present study it is observed that brick industry plays an important role in the economy of the state in terms employment and income generation. However, it is pertinent to point out that no brick-field should be established at the cost of agricultural land. State Govt. should take up necessary land regulation in this regard. At the same time, establishing cluster of brick fields at densely populated area should be restricted as it will increase social cost. The State Pollution Control Board, Manipur should monitor the method of operation and technology used by the brick fields to minimise air pollulants. For technical guidance and quality control scholars and researchers should be attracted/motivated. As Manipur is a hilly state different varieties of soils are available. If the red clay available at foot hills is possible to make bricks, it will benefit industry as a whole.

The overall study makes it quite obvious that brick manufacturing industry has been besieging with many constraints in the smooth and efficient running. However, with strong determination, clear vision, conscious and consistent efforts along with co-ordinated policies of the state Government these constraints may be removed. The role and importance of brick industry should be given due recognition by the Government and the public and necessary provisions may be incorporated in the Industrial Policy of the state of Manipur.