CHAPTER VII

SUMMARY AND CONCLUSIONS

Kerala was enjoying a dominant position in tile production in the country for a century. The demand for Kerala tiles was steadily increasing till 1965 both in the local and external markets. But the situation changed since 1965. Development of tile factories in other states like Tamil Nadu, Karnataka, Andhra Pradesh and Gujarat reduced Kerala's external markets. Preference for RCC houses further crippled internal markets. Scarcity of good clay, opposition from environmentalists towards clay mining, scarcity and high price off firewood and other inputs and persistent increase in the cost of labour adversely affected the tile industry and the majority of the factories are on the brink of sickness. Hence a study was attempted on tile industry in Kerala with the following objectives.

i. To study the economics of the tile industry in Kerala for the period 1978-79 to 1987-88.

ii. To examine the regional variations in the economics of the industry.
iii. To identify the major problems and constraints confronted by the tile industry in Kerala.

iv. To examine the prospects of tile industry in Kerala.

In order to study the stated objectives data were collected with the help of pre tested schedules from 32 factories spread over four regions namely Calicut, Trichur, Alwaye and Quilon for a ten year period (1978-79 to 1987-88). The findings emerged from the study are the following.

7.1. Location and ownership

The historical factors mainly the works of Basel Mission played an important role in starting tile factories in Kerala particularly Malabar area. Of the 32 factories surveyed, 80 per cent were established prior to 1947. The present generation inherited the factories and this was primarily responsible for lack of entrepreneurship in the industry.

Sixty nine per cent of the sample units had a rural location due to easy availability of clay and firewood in such areas.
93.75 per cent of the sample units were organised on partnership basis and the remaining two units were public limited companies. Individual proprietorship concerns are absent mainly due to the high order of investment required.

7.2. Capital structure

Significant changes have not taken place in the composition of fixed capital and it was seen that generally firms refrain from incurring much expenditure on items of fixed capital. Among the regions, two factories at Calicut made some attempt for modernisation in 1982-83.

An increasing tendency for the units to store materials particularly clay and firewood has been observed. For instance, the stock of materials increased by 259.11 per cent over the reference period. Among the regions, the stocking of materials was found to be maximum in Calicut region while the stock of finished goods was found to be minimum.

Trends in the composition of working capital revealed that the factories raised enough working
capital by loans and advances for meeting day to day expenditure.

Substantial changes have not taken place in productive capital which further strengthen the view that the factories in general once established do not incur much expenditure for any of the fixed capital items.

7.3. **Employment and emoluments**

There was a marginal decline in the average number of workers from 93 in 1978-79 to 87 in 1987-88. This was not the consequence of any labour displacement whereas it arise from the prospects of the industry arising from cyclical fluctuations in demand. Nevertheless, the industry continues to be labour intensive. But there has been a labour cost escalation which was more pronounced in the Alwaye region due to alternative employment opportunities in the area at higher wage rate.

The workers of the tile industry come under the purview of Minimum Wages Act and they enjoy ESI benefits also.
7.4. Inputs

While clay accounts for about 25-30 per cent of the input cost, firewood constitutes about 60 per cent. The major reasons responsible for a high price of firewood are,

i. the reduction in the forest area and stoppage of clear felling.

ii. the increasing demand for wood from other industries.

iii. growing demand for fuel wood in the domestic sector

iv. rise in the cost of all other sources of fuel.

7.5. Cost of production

The cost of production consists the input cost, labour cost and establishment cost. Input cost went up from 51.14 per cent in 1978-79 to 55.77 per cent in 1987-88. The corresponding labour cost and establishment cost however declined marginally from 36.91 per cent to 34.43 per cent and from 11.94 per cent to 9.80 per cent respectively. These trends reveal that the rise in labour cost was not acute in tile industry compared to input cost
Among the regions, rise in input cost was maximum in Quilon region and minimum in Calicut region. Similarly, labour cost was maximum in Alwaye region and minimum in Calicut region. Hence, among the regions, Calicut region was capable of producing tiles at low cost basically due to the easy availability of fire wood and economies of scale enjoyed by the factories in the region because of their large size.

7.6. Products

Among the products, roofing tiles had the preeminent position whose share had gone up from 74.97 per cent in 1978-79 to 81.55 per cent in 1987-88 when the demand for roofing tiles are stagnant if not fast declining. This shows the lack of product diversification and increasing reliance of the industry on roofing tiles.

7.7. Gross profit

The prosperity of the industry depends on the margin of profit earned. The margin of profit earned continuously declined inspite of fluctuations and these fluctuations occurred due to,
a) fluctuations in sales
b) fluctuations in input cost
c) fluctuations in selling price.

Among the regions, Calicut region alone enjoyed better margin which was the result of,

i) goodwill of the factories in that region
ii) size economies enjoyed by the factories
iii) availability of inputs at low cost

7.8. Value added

Wide fluctuations were observed in the behaviour of value added and these fluctuations were due to fluctuations in demand and consequently production. Hence a direct proportional relationship between profit and value added could not be established particularly in Alwaye and Quilon regions.

7.9. Structural ratios

The structure of the industry was examined with the help of selected ratios and the findings emerged are,
i. fixed capital-invested capital ratio and fixed capital productive capital ratio were found to be low which reflects the high labour intensity of the industry. The ratios were found to be higher in Calicut region and this was due to some attempt for modernisation by two units.

ii. invested capital output ratio showed a rising tendency in all the regions as a result of accumulation of materials, semi finished goods and finished goods.

iii. the continuous increase in cost of inputs was revealed by the input output ratio. The ratio was found to be low in Calicut region.

iv. value added input ratio and value added invested capital ratio fluctuated over the years which strengthen the view that the prospects of this industry is subject to cyclical fluctuations.

v. input per worker, output per worker and value added per worker increased over the years as a result of price rise and wage rise which are only part of the economic changes that have taken place in the country over the years.
7.10. **Capacity utilisation**

The declining trend in capacity utilisation is shown by the fall in capacity utilisation from 70 per cent in 1978 to 40 per cent in 1988. The high cost of material inputs and inadequate demand for the products led to such a predicament. Capacity utilisation declined from 85 per cent to 60 per cent in Calicut region, 75 per cent to 40 per cent in Trichur region, 80 per cent to 45 per cent in Alwaye region and 75 per cent to 50 per cent in Quilon region over the reference period.

7.11. **Productivity and economies of scale**

The term productivity is broadly meant to connote the input use efficiency of a production process or any activity. The productivity of the tile industry was examined with the help of Cobb-Douglas production function treating monetary value of output as dependent variable, wages and salaries paid and invested capital as independent variables, respective coefficients being $\alpha$ and $\beta$. The value of $\alpha$ was quite large for all the regions except Trichur which confirms the finding that the industry is labour intensive. A comparatively higher
value for $\beta$ in Trichur may be the result of stock piling. The coefficient of capital (pooled) was found to be negative but insignificant due to,

i. over capitalisation as a result of stock accumulation

ii. low share of fixed capital in the capital structure.

The sum total of $\lambda$ and $\beta$ was found to be less than one in all the regions which implies a state of decreasing returns to scale. The sum of coefficients was found to be higher in Calicut region reflecting higher economies of scale which confirms the earlier finding that Calicut region enjoyed better economies.

7.12. Intra regional and inter regional variations

Intra regional and inter regional variations were studied with the help of ANOVA (RBD type) and critical difference test. Intra analysis proved that there is significant difference in the behaviour of majority of the variables over the years which emphasis the view that the behaviour of this industry is subject to cyclical fluctuations. This argument was further supported by the results of critical difference test.
Similarly, with respect to the behaviour of variables between regions, Trichur, Alwaye and Quilon formed a homogenous group. The behaviour of Calicut region was found to be distinct from the behaviour of other three regions.

7.13. Technological problems

Barring a few units, the technology was seen to be outdated. Fuel efficiency can be achieved only if Hoff-man type kilns are used. But even today majority of the factories use the traditional intermittent kilns. Similarly, the traditional technique of drying the tiles by keeping them in pallets was followed by almost all the sample units.

As the quality of the product is determined by the quality of the clay, it is essential to make proper testing for ensuring the quality of the products. But the clay testing and product testing facilities are available in a handful of units only.

7.14. Marketing problems

The market for tiles consists of three sub markets namely export market, external domestic market and home
The British colonies which became independent since 1950 started tile factories and this curtailed our exports drastically. Heavy export cost also reduced the incentive for export by our manufactures.

The marketing of tiles became further complicated due to the wrangle of domestic market. The main factors which led to this situation were,

i. higher labour cost in Kerala compared to other states

ii. rising transportation cost

iii. starting of tile factories in other states

iv. shifting of the industry from Kerala to neighbouring states due to wage advantage.

The home market also declined at a fast rate due to,

i. shifting preference for RCC houses

ii. heavy maintenance cost of tile roofed houses

iii. rising cost of wood which is a complementary for tiled roofs.

7.14. Organisational problems

The organisational structure is an important factor for the success of any industry. About 80 per cent of the
tile factories continue to be family concerns and are not properly organised as industrial units. Hence, sentiments to maintain the inherited property is the only motive in running the units and not the entrepreneurship. Eventhough a good proportion of owners/managers are well experienced in the field, few are totally new. Similarly, among workers, skill based labour segmentation is almost absent.

7.16. Share of the tile industry in the housing sector

Census reports provide information on the proportion of houses used tiles as roofing material and bricks as wall material. The share of houses used tiles as roofing material increased from 37.6 per cent in 1961 to 48.5 per cent in 1971. Similarly, the share of houses used burnt bricks as wall material reached 23 per cent in 1971 compared to 1.71 per cent in 1961. Considerable changes have taken place in the materials used for building construction since 1970. But secondary information on recent developments was not available pending the publication of 1981 Census Report on Housing.
To bridge this gap, the details of roof material, wall material and plinth area of 600 residential houses built since 1975 were collected from the offices of local bodies. To get a cross section, the entire state was divided into three strata namely Northern Kerala, Southern Kerala and Central Kerala. From each strata 200 houses were examined, 100 each from rural and urban. The highlights of the enquiry are

i. Fifty per cent of houses constructed in Kerala since 1975 used tiles as roofing material.

ii. Sixty four per cent of houses used tile as roofing material had plinth area below 600 sq.ft.

iii. Twenty five per cent of houses constructed in Kerala since 1975 used burnt bricks as wall material.

iv. Five per cent of houses constructed in Kerala since 1975 used wire cut bricks as wall material. This constituted 18 per cent of houses constructed in Kerala since 1975 used burnt bricks as wall material.
v. Seventy nine per cent of houses used burnt bricks as wall material had plinth area above 900 sq.ft.

These criteria were used to project the annual requirement of roofing tiles in Kerala until 2001 AD and also to examine the prospects of diverting into the production of burnt bricks.

7.17. Prospects of tile industry in Kerala with reference to the production of roofing tiles

The requirement of tiles varies from design to design and hence a precise estimate of the requirement of tiles is rather difficult. However, projections made under alternative assumptions revealed that the external and home demand together is just sufficient to absorb the production when the factories are operating at about 50 per cent of the installed capacity. Also, there are no reasons to believe that the situation will turn in favour of roofing tiles. Hence the researcher concludes that the prospects of tile industry in Kerala with respect to the production of roofing tiles as major product is very bleak and therefore recommends urgent diversification.