The welfare of the people is the purpose and object of all our planning and development. Housing is one of the major constituents of our standard of living and is the second most important component of people's welfare. Despite India's conscious striving to house teeming millions, the housing shortage is on an increase and it has various dimensions. Moreover the nature of housing problem varies from one section of population to another. The problem of housing the urban poor and providing shelter to low and middle income groups cannot be treated alike. The former category requires free public housing purely on welfare grounds whereas the latter needs only some form of economic assistance to ease their housing situation.

So, for the purpose of housing analysis, the population is stratified on the basis of income into various categories such as the economically weaker section (EWS), the low income group (LIG), the middle income group (MIG) and high income group (HIG). Those earning between Rs.201 and Rs.350 per month are
classified as economically weaker section; for low income group it is between Rs.351 and Rs.600 and it is between Rs.601 and Rs.1500 for middle income group. Those who earn more than Rs.1500 per month are classified as high income group.

It is estimated that in India 45% of the total population live below poverty line. Another estimate indicates that EWS constitutes 75% of the population. 1 According to Housing and Urban Development Corporation the LIG percentage is 15 and that of MIG is 8. Only 2% of the population belong to high income group. Providing shelter to the major section of the poor is beyond the reach of market mechanism. Therefore public housing assumes greater significance.

The present study is an attempt to inquire into housing condition of LIG people in Madras Metropolitan city and highlights the role of public housing. The choice of LIG housing is not without a purpose. The Indian definition of low income group has no universal application. Housing studies in the developed nations on low income group refer to people who are economically 

poor, socially neglected and who reside in slums without permanent income and employment. In India we would call them broadly as slum dwellers or specifically the urban poor. The low income group in India has a specific identity having a stable fixed income, a capacity to save for house purchase and have aspiration for a decent house either rental or own. They are unable to afford a house because of the high production cost of house on the one hand and their limited income on the other. What they require is State assistance either to channelise their meagre savings in the form of own house or to secure a low rental. This particular category of people are increasing in metropolitan cities where tertiary sector is on a continuous increase, leaving behind a host of LIG people. Though there is no correct estimation to show the extent of LIG population in Madras city, the Madras Metropolitan Development Authority's (MMDA) Report on household income (1976) reports that 6.7% of households have a monthly income of Rs.100 or less, 37.6% of households have incomes between Rs.101 - Rs.200, 27.9% of households have incomes between Rs.201 and Rs.350, 16.1% of households have incomes between Rs.351 and Rs.600 and 11.7% of the households have incomes above Rs.600.

As regards low income group housing it is not a remunerative venture for the private sector to
undertake and co-operative building societies hesitate to advance finance for the LIG housing because of the inherent risk and also the lack of adequate finance on the part of the societies. LIG housing is therefore mainly public housing which contemplates for cost reduction by innovating new techniques of construction, thereby making house purchases within the paying capacity of the LIG people. It is a lucrative field for a researcher to analyse the economic implication of the LIG public housing.

1.1. **Nature and Scope of Study:**

A study of low income group public housing mainly hinges on the public housing agency. As such the Tamilnadu State Housing Board (TNHB) is the arena of this study. Even though the Board has jurisdiction throughout the State, the present study is confined to Madras Metropolitan area alone. Usually an economic analysis of low income group housing envisages either an ex-post evaluation of the Housing Board in terms of low income housing or an evaluation of the low income group programme in terms of benefit accruing to the participants of the LIG housing programme. The Board implements various housing programme by creating
composite housing schemes where EWS, LIG, MIG and HIG houses have been built side by side. As such break-up cost figures pertaining to LIG housing alone is not readily available with the Board. Therefore this study deals only with costs and benefits accruing to the participants of the LIG housing scheme. It also evaluates the effects of new LIG housing technology on costs, input demands and input substitution.

The objectives of the thesis are to find answers for the following questions:

1. What are the benefits (measured in rupees) of the LIG public housing programme to its participants? How do they arise?

2. What proportion of the LIG families receive monetary benefits from the public housing programmes?

3. How the participants' benefits vary with income, size of household, age of head, education and caste?

4. Has the shift in housing technology followed by the Board produced favourable effects on LIG housing?
5. With a given institutional framework what role does the Housing Board play to relieve the existing LIG housing shortage?

The LIG public housing programme is of two kinds viz. the rental housing scheme and the hire purchase scheme. From 1961 to 1975 the Board has built 280 low income rental houses at 5 centres in the city. Those LIG rentals were built in different years and hence location, cost, plinth area, plot sizes, composition of rooms and structural design vary from scheme to scheme. Owing to the heterogeneous nature of the housing services, rent is determined on the basis of original cost of construction and other liabilities such as payment of Corporation and Government taxes and cost of maintenance. The rent charged by the Board is much lower than the market rent. The difference between the market rent and the rent charged by the Board is a naive measure of benefit. A survey of literature shows that studies by Prescott and Olsen¹ used Marshall's consumer surplus to measure this direct benefit. But this naive measure takes no account of any distortions in the consumers'

consumption pattern imposed by the subsidy programme. De Salvo\(^1\) employed Hicks' equivalent variation of benefit to measure the change in income required for the beneficiary to be just able to achieve, at market prices, the level of satisfaction reached under the subsidy programme. This study also uses this measure. A particular equation has been adopted and to apply the model, the necessary data, apart from those that are collected from the ongoing programme are obtained from a random sample of LIG household under the rental scheme.

Under the hire purchase housing programmes, houses or flats have been constructed with a plinth area varying from 350 sq.ft. to 500 sq.ft. at costs varying from Rs.18,000 to Rs.21,000 in 1978-79 prices. So far the Board has constructed 9371 LIG houses in Madras city at a cost of Rs.17.57 crores. The LIG hire purchase scheme enjoys certain concessions like purchasing of building materials at controlled prices and securing loan at low rate of interest. These concessions together with the new housing technology followed by the Board result in low production cost.

Therefore an evaluation of LIG hire purchase public housing programme is done on the basis of differential cost between the private and public construction. It is nothing but a comparative study of "with the project" and "without project" situation in cost benefit jargon.

To work out the production cost of an identical LIG house both under public and private construction a model LIG house is selected and product cost is estimated under the following assumptions:

1. Both the sectors are equally efficient.
2. Land cost remains same.
3. Location, design and type of structural construction remain same and
4. Only price of input varies.

The estimated production cost difference between the public and private units gives rise to the major benefit. Furthermore, under public housing the participant pays 8% interest whereas the interest rate under private housing scheme is 10%. The interest variation computed for the cash flow (yearly instalment) over a period of time yields another measure of benefit. To study similar benefits for different hire purchase
schemes a random sample (5% of the household) is chosen. The sample study shows whether the LIG hire purchase Scheme serves the LIG people or not. The distribution of benefits among the households is analysed by multiple regression.

After evaluating the LIG rental and hire purchase public housing schemes, the performance of the Tamilnadu State Housing Board is assessed in terms of cost-saving production techniques in the context of ever increasing construction cost. Literature on cost saving construction techniques tells us that minimisation of cost in construction could be achieved either by pre-fabrication techniques or by 'low-cost housing' technology. It is reported that the Housing Board in its drive towards cost-saving efforts, experimented with pre-fabrication techniques but has not attained the anticipated success. On the other hand the Board has given up the conventional technology which utilised large quantity of steel and cement and follows a new technology incorporating cost reducing economic specifications since 1970.

To study the effects of new technology once again the model LIG house is referred and the production cost of the model house both under conventional
technology and new technology is computed. To find out the effect of new technology alone on production cost, the two cost estimates were standardised and the input price variation between 1969-79 has been eliminated by computing Laspeyres cost index.

Finally the study analyses the price trend in building industry and assesses the role of the Housing Board in the context of increasing housing shortage in the city of Madras.

1.2. Organization of the Thesis:

The second Chapter deals with the rationale for public intervention in the housing market and of different forms of public intervention based on the experiences of other countries. The need for public housing in India, estimate of housing shortage and the historical review are dealt with.

Chapter 3 is devoted to the organizational set up, working, financial capabilities and performance of the State Housing Board with particular reference to low income housing.
Chapter 4 reviews the existing literature on evaluation of LIG housing scheme. It adopts De Salvo's model to estimate mean tenant benefits and distribution of tenant benefits for the participants in the rental scheme of the Tamilnadu Housing Board.

Chapter 5 deals with the methodology for evaluation of hire purchase scheme and provides estimates of benefits to participants under the hire purchase scheme.

Chapter 6 describes the new technology adopted by the Board and assesses its effects on costs, inputs usage and input substitution.

Last chapter summarises the main findings and limitations of the study and contains suggestions for further research.