2 Review Of Literature
2. Review of Literature

As a matter of fact author was anticipating from references indicating the studies already conducted in this particular scheme has been introduced throughout the country. Author however, in spite of her best efforts and exhaustive search could not come across a references directly satisfying to the requirement. Author however was happy to read and knows the important aspects in a large amount of literature on the various aspects of housing as a topic for convenience sake and with a view to present the entire literature in to various sections the entire chapter has broadly been divided in following sections.

2.1 Need and importance of housing

2.2 Review of various housing schemes introduced from time to time mainly with a view to provide shelter to the rural poor.

2.3 Housing design to fulfill condition and requirement with regards to design, construction materials, amenities, health and hygiene, social securities and social forestry for better living.

2.4 Smokeless chullah most desirable component in rural housing with particular reference to adoption and non-adoption.

2.5 Housing in India – problems and perspectives.

2.6 Studies conducted

2.1 Need and importance of housing

Need and importance in general and rural housing in particular for survival of man needs no special emphasis. Which
many people have stated. How and in what way housing is important can be seen from the statement made by writer in the section.

According to Nickell, P. (1951), it contributes to the sense of human’s worth and dignity and thus to mutual respect and companionship. It provides sensibility for the widely varying need of family over the cycle in their lives.

According to Agan, T.G. (1956) Housing has a deep effect on family life. Home is a place where one gets protection from weather. It gives sense of stability and adds impact to the personality of individuals. Housing also satisfies ego of human beings. Housing has the deep effect on family life. Housing may affect the social and emotional aspects of family life by influencing directly the recreations of the members of the groups.

Devadas, R.P. (1958) opined that home has been regarded, as a primary school of a child it is must for families to have space and comfortable atmosphere that can only be produced in a pleasant dwelling. For the over all progress for raising the nation to the sky, it must provide all its citizens with at least minimum housing.

According to Tiwari (1961) Housing or shelter is one of the three basic needs of human beings; the other two being s food and clothing and therefore the history of human habitation is closely linked with history of mankind.

According to Beyer, G.H. (1965), the importance of home for family life is stressed in the statement that the success of any man’s service in the public order depends upon a state of mind that provide the family life keeps alive.

Willey (1966) emphasized the importance of housing at Good housing makes good people and good people makes good society.
Dwelling not only satisfies one's elementary need for protection from weather but also frame works for the development of social life.

The proper housing exercises a profound influence on people's health and develops characters among them. Housing influences maintenance and preservation of health. Vital statistics from USA, Great Britain and other countries shows that better housing had resulted in lower infant mortality rate.

In the words of Pandit Jawaharlal Nehru at reproduced by Willey (1966) A house is not nearly a place take shelter from sun, cold or rain. It is, or should be. An enlargement of ones personality and its human welfare is our objective that is bound up with house.

According to Graig, H.T. and Rush, O.D. (1967), the terms ‘Housing’ means satisfactory relationship with your family, warmth, security and support.

Nickell and Dorsey (1967) stated, housing for comfortable living should provide space for the family’s daily activities as well as for the personal activities of each members of the family. A house should be a place where each member of the family finds relaxation, opportunity for self-expression as and happy group living. A well-built and well-kept house stimulates hopes and ambition. The important of housing comes on the screen as we glance and the concept of it.

According to Ramchandaran (1972) Provision of shelter is a social welfare and is essential for the well being of individual, the families and the nation. Therefore it is desirable that every family should have a house of it own.

According to Dholkia (1982) shelter is an essential ingredient in basic requirement of civilized living. Quality of life depends largely on the kind of housing facility that are available. Shelter is a basic
human need for all sections of our society for protection of against the
element of weather and even for survival. Housing or provision of
shelter for any living being comes in the list of priorities second only
to food.

According to Gupta, R. G. (1983), the standard of life may be
measured by the availability of quantity and quality of shelter,
infrastructure and services. In any economy it is very important, as 60
percent to 70 percent of the total investment goes to the shelter,
infrastructure and services. National housing policy must aim at
providing adequate shelter and services to the lower income group and
distribution of available resources on the basis of greatest needs. The
informal sector should be supported in its efforts to provide shelter,
infrastructure and services, especially for the less advantages.

According to Sarma, B. (1984) a house shall cater for the
following functions viz., Environmental, Physiological, Biological,
Psychological, Sociological, Cultural and Economical. Most of middle
income and higher income houses are usually design for all the above
functions excepting for the economic activities. Few houses also have
some economic activities in those houses such as consulting offices of
Doctors, Architects and Engineers etc. But these houses are well
planned as per the requirements of the owner to suit their individual
needs. These middle and high-income group families have complete
decision-making process in their domain. The situation in low housing
income group is quite different. Usually the plot sizes and even the
house design is decided by the official in charge of the projects and
families have almost no decision making power. Mostly the houses are
designed for mere shelter without any consideration for economical
activities of individual needs.
Verma, N. and Datta, A. (1984), opined that need for shelter is generally restricted to the poor villager, the necessity for getting better environmental condition is felt by the whole of the village community. The need for improvement in public health services, road and drainage and general improvement to reduce congestion is felt by the rich and the poor alike.

According to Mohanty, A. B. (1985) a low cost house has necessarily to be small but not one built of mud and thatch. It must be leak proof and hard floor. It must be safe from intruder and it must be durable. It must not only cost less to built but also cost to maintain. The basic requirement must be met. A low cost house must be of a standard of being accepted as security or it must be marketable. It must appreciate in values like any other real estate property.

In rural areas there is need for providing cheap dwelling for millions of peoples. Mud walls and thatch roof have been in use since time immemorial. Such houses have stood the test of time. This traditional method can be improved by using stabilized soil for walls and floors and asphaltic sheets in placed of thatch to make it fire proofs.

A house in the lower income group can also be decorated within the means of the owner. We cannot do without electricity. It is need for every human being. Sanitary service is needed for every home. Each one of us can contribute to enrich our environment.

Housing activities not only improve living conditions but also stimulate employment potential. “Housing has been the largest employment sector, it is the biggest industries spreading through out the length and breadth of the country;” but it is unfortunate that ‘Housing’ has not been recognize as the industry so far.
According to Veena, D. R. (1985) Housing help in increasing productivity and creates a favourable environment for better income opportunity and better living condition. Housing, conceived as a set of services, is an important environment that has profound impact on the socio-economic and physical psychological development of human being.

While stating the importance of housing, the eminent home scientists Vergheese, M. A., Ogale, N. and Srinivasan, K. (1985) reported that we should be aware that housing not only provides a physical shelter but it affects our family life in many ways, favourably or adversely.

Hirwery, I. (1987) has very rightly spelled out housing policy suited to rural situation in our country. According to her it is necessary to understand a house in rural area is not merely a product of consumption. It is also

1) A service for improving the quality of life
2) A means of improving the labour productivity
3) A way of life which is influenced by social culture and economic environment
4) A place for carrying out production.

Housing programme therefore will have to take care of these various dimension of housing activity.

Census of India, 1991 defines ‘houseless population’ as the persons who are not living in ‘census houses’. A ‘census house’ is referred to a ‘structure with roof’. The enumerators are instructed ‘to take note of the possible places where the houseless population is likely to live such as ‘on the roadside, pavements, in hume pipes, under staircases or in the open, temples, mandaps, platforms and the
like’. The terms homeless, houseless, roofless, shelterless people, pavement dwellers do not always cover the same target group. The same term may correspond to different definitions depending upon the studies. Problem of reliable estimation and clear definition of houseless population are encountered in the surveys conducted for Indian cities.

According to Hiraskar, G. K. (1993) “A shelter is necessary for the protection against wind, rain etc.” But the man does not need a mere shelter or roof over his head with haphazard collection of building materials, instead he needs a cheap but cozy house affording the maximum utility, safety, comforts and convenience with a background of serenity. The man is primarily a social creature. He loves to live in society or community. Hence housing does not mean a covered roof for every family. It is a social unit, planned on neighbourhood or community principle. Housing, in general sense, is the lay out and development of residential units in which people can live in pleasant, peaceful and healthy surrounding with social, cultural and recreational facilities.

Rangwala, S.C. (1996) stated that a housing has potentially to a great extent in promoting human welfare, social life, economic growth, health of community and various other related aspect of human life.

The socio economic development of any country can be assessed with regards to the prevalent housing condition. Housing advancement indicate the progress achieved, cultural level attained and general nature of the people. The good housing with proper recreational facilities prevents juvenile delinquencies, on the other hand bad housing will results in ill health, excessive mortality, vices and lack of
educational refinement. Thus, the man made environment of human living has remarkable influence in making life of human being most desirable.

From the above writing of eminent author the need of housing in the life of individual and family is emphasized in various ways to protect against wind and rain, safety, comforts, convenience, to allow the following functions viz. environmental, biological, physiological, psychological, sociological, cultural and economical, it is place of our life favourably and adversely in promoting human welfare, social life, economical growth, health of community, shelter is basic need of human being. Housing determines quality of life of its occupants. Home is a place of primary school of child. Housing as a development of characteristics influence on health, linkage of human welfare and personality development of house, productivity and favourable income of better opportunity, deep effect of family life satisfies ego of human beings, sense of stability, relaxation, opportunity of self-expression, happy group living, stimulate hopes and ambition. Prevention of juvenile delinquencies, success of man's service in public order in to society as dignity and respect.

Gopalan, S. (1984) stated the importance of housing particularly for the economically weaker sections. She worked out magnitude of shortage of housing. The magnitude of the shortage is quite alarming was brought out in the 1981 census. As against the 44.23-lakh households, residential houses (including 9.67 lakhs huts) were only 42.97 lakhs, causing a numerical shortage of 1.26 lakh housing units in the state. It has been estimated that annual rate increase in the housing stock has just kept pace with the annual increase of households at 88,000 per annum, keeping the housing shortage
constant for a whole decade between the two census. In making this assessment of housing stock against households, no qualitative analysis of the housing stock has been considered; consequently the need for replacement of dilapidated houses is not accounted in these statistics and further observed during the plan period 1980-1985, including qualitative improvement of dilapidated houses (1.31 lakhs) and huts (6.00 lakhs), now addition to economically weaker section households (2.64 lakh) the demand for housing units had to be placed at 11.21 lakhs, while the estimated addition was 1.41 lakhs only, leaving a shortage of 9.80 lakhs of housing units. If this shortage is to be wiped out along side building houses for 2.64 lakhs new households that would come up between 1985-1990, the number of housing units to be built per annum would be in the order of 2.5 lakhs units.

In an attempt to evaluate the role of Kerla state housing board and suggesting implications she observed that the introduction of this scheme has made a big shift in the composition of the categories if houses sponsored by the Housing Board with the largest amount of resources channels through the board going to economically weaker sections. The Housing Board has become the single largest agency aiding the construction of houses for the weaker sections, in the sixth plan period, taking credit for 97317 houses out of 161959 estimated to be complete in the state. Further she has also stated role of government and voluntary organizations in the implementations of the scheme mentioned above.

Government has taken a very active role in canvassing voluntary organization to participate in this programme through a series of meetings with different groups of organizations. The district
collectors are specially charged with the responsibility of enlisting cooperation of voluntary organizations in the Districts to promote the scheme. Government has also issued series of instructions simplifying procedures and cutting down red tape for the smooth and quick implementations of the programme, apart from providing its share of finance.

The most significant feature of this scheme is the utilization of the network of voluntary agencies as the infrastructure to identify beneficiaries, sponsor their applications with a financial input, assistance in the security and clearance of documents by the land revenue officer, organize collection and supply of building materials, supervise construction, arrange flow of installment of fund from the housing board along with the inspection reports of the authorities delegated to furnished this work to expedite stage certificate for sanction of installments. (This authority has been delegated to all engineers of the government and autonomous bodies above the rank of overseers, panchayat officer and village officer and village extension officers.)

The role of voluntary agencies is very crucial in this programme as they ensure proper utilization of the funds and easy implementations. Houses have been constructed within a three to six months of starting construction. In most of the government scheme the release of installment of funds is spaced over long spans due to time taken by the beneficiary to construct and the multifarious duties cast upon the functionaries who are responsible to inspect and report on the progress resulting in construction spreading over the long period of time. This major bottleneck has been eliminated in this programme by the simplified procedure and the utilization of the voluntary agencies.
About 700 voluntary agencies in the state, including panchayats, cooperative societies, welfare corporations are participating in this programme and hold a lot of promises for further expansion of this project.

According to Rangacharyulu, S.V. (1994), One of the objectives of the Indian Government in the housing sector has been to improve the quality of life, particularly of the poorer sections of rural areas, through the provision of the houses and house sites. Rural housing was accorded priority during the fifth plan period. Subsequently the eight five year plan also recognized the housing needs of different groups, with special attention being paid to the housing needs of poorer sections, women and disabled.

2.2 Review of various housing scheme introduced from time to time mainly with a view to provide shelter to the rural poor.

At this juncture it may be mentioned that government has introduced various housing schemes from time to time with a view to provide shelter to rural poor as one of the basic need. Although those schemes differ in their nature and modes of operandy, yet objective remained the same. An attempt has been made in this section to present the schemes introduced by the government from time to time for providing houses to the rural poor based on certain eligibility criteria indicating their significant features.

According to Kukreja, S. (1997) the need of rural housing was considered and the security of problem was experienced hence at central level in 1974 many sub-schemes concerning rural housing were started.
As per the 1991 Census, the total number of occupied residential houses in rural areas was 10, 79, 40, and 429. It has been estimated by the National Building Organization that as on March 1991, out of the total housing shortage of 310 Lakhs units in the countries, 206 lakhs units are in rural areas. In addition, 20 lakhs new units are needed every year for the increasing population.

The rural houses are mostly Kutchha and only a small percentage can be categories as semi-pucca or pucca. Pucca houses have walls of burnt bricks, stones, cement, concrete G. l. or other metal sheets, timber etc. with roofs made up of tiles and G. l. sheets, besides corrugated iron / zinc sheets, R. B. C. and R. C. C. etc. Serviceable kutchha unit is a unit with mud wall and thatched roof. Unserviceable kutchha unit is made up of thatched wall and thatched roof. Semi pucca include all units, which do not fall in any one of the above categories.

Government announced, in 1998, a National Housing and Habitat Policy which aims at providing ‘House for All’ and facilitating the construction of 20 lakh additional housing units (13 lakh in Rural Areas and 7 lakh in Urban Areas) annually, with emphasis on extending benefits to the poor and the deprived. An Action Plan for Rural Housing has, accordingly, been prepared.

Under ‘Rural Housing’, an allocation of Rs.1710 crores had been made during 2000-2001 to implement the Action Plan, which has been approved with the objective of providing “Shelter for All” by ending shelterlessness by the end of Ninth Plan period and conversion of all unserviceable kutchha houses to pucca/semi pucca by the end of the Tenth Plan period, through the construction of additional 13 lakh houses annually.
Hirway, I. (1987), although the first village housing scheme in India was introduced as early as the second five year plan, the Government has never carried out a comprehensive survey to assess the nature and extent of the housing needs in rural areas, nor has it ever allocated adequate funds for rural housing. The Government approach to rural housing has been based on four considerations:

1) Highly subsidized housing should be provided for the rural poor, the poor should use their own labour to construct their houses,
2) Low cost housing should make use of local materials and local skills, and
3) The public cooperatives and the household sectors should be involved in housing activity.

Housing being a state subject, state / UTs are implementing their own housing programme depending upon the availability of resources, both plan and unplanned. At the national level, allotment of house – site cum construction assistance, which is a state sector scheme, is being monitored. It is 14-20 point programme –1986 and included in the Minimum Needs Programme (MNP). IAY is a central sector scheme for the benefits of Schedule Caste (SC), Schedule Tribe (ST) and freed bonded labours. The Rural Housing Schemes are also finance by the Housing and Urban Development Corporation (HUDCO) an apex level housing finance and corporation under the Ministry of Urban Development. HUDCO provides loan up to 90 percent of the project cost with unit cost not exceeding Rs.15200/- for the economically weaker sections rural landless category and Rs. 26400/- for the economically weaker sections landed category.

Various Central and State government Housing Schemes for rural and landless people are
2.2.1 Allotment of House – Sites – Cum – Construction –

Assistance

The scheme of allotment of houses – suites initiates in October 1971 in the Central sector to provide house sites to landless rural agricultural worker at free of cost. This scheme was transferred to the state sector with effect from First of April 1974 and included in Minimum Needs Programme. Later it was made part and parcel of the twenty-point programme. This scheme originally intended to benefit the landless agricultural workers, was later widened to cover all landless rural artisans. The norms of assistance have been fixed at Rs. 500/- for meeting the cost of site development and Rs. 2000/- as construction assistance.

Mathur, G.C. (1984), in order to ameliorate the living condition of the landless rural poor, the Government of India introduced a scheme of provision of house size to landless in rural areas in 1971 in the Central Sector as component of a Fourth Five Year National Plan (1969-1974).

Under the scheme, the state government and union territories are to provide house size measuring not less than 83 Sq. meters free of cost to 14.5 Million landless rural family who do not already own house size or a built up house or a hut on land of their own. On the house sites so provided the landless rural family are expected to build houses / huts with their own resources.

Under the scheme 100 percent grant assistance not exceeding Rs.150/- per house site is provided to the state Government to cover the cost of acquisition of house site as well as the cost of its development. The term development covered acquisition and leveling of land, provision of paved streets and storm water drains and a
covered masonry well for the cluster of 40-50-house site where adequate supply of potable drinking water was not available.

A scheme had been continued in the Fifth Five Year Plan (1974-1979) where its scope was extended to other landless worker who are bonafide artisans, such as potters, carpenters fishermen, blacksmiths etc. who had no house sites or other land of their own.

The ceiling cost of development was also raised to Rs.300/- per house site in the plain area and Rs.500/- per house site in hilly areas.

2.2.2 Indira Awaas Yojana

Housing is one of the basic requirements for human survival, besides providing significant economic security and status in the society for a shelterless person.

Indian constitutions provide equal justice and opportunities to the citizens of India for their welfare and socio-economic upliftment through various incentives, programmes and schemes critical perusal of eligibility criteria prescribed for beneficiaries would reveal that schemes are great in number particularly for underprivileged and those below poverty line. Indira Awaas Yojana is one such of the schemes. This scheme is the largest rural housing scheme to be launched in India, has been modeled as an epitomizes these aspects.

In the book titled ‘Laurie Becker’ by Deulgaonkar, Atul (1997) Guidelines for IAY has given by Laurie Becker. In the book it is also mentioned that Government of Kerala has decided to built houses of IAY according to Becker’s idea in 1975. The guidelines are given on the basis of eligibility criteria of beneficiary, distribution of shelter, selection of beneficiary, place for houses, cost of houses, distribution of fund in installments. With the help of Rashtriya Seva Yojana,
Nehru Yuva Kendra, low cost building construction technologies can be carried out. Success of IAY is depend on participation of people.

The genesis of the Indira Awas Yojana (IAY) can be traced to the programmes of rural employment, which began in the early 1980s. Construction of houses was one of the major activities under the National Rural Employment Programme (NREP), which began in 1980, and the Rural Landless Employment Guarantee Programme (RLEGP), which began in 1983. There was, however, no uniform policy for rural housing in the states. Some states allowed construction of only new dwellings; others permitted renovation of existing houses of beneficiaries.

As per announcement made by the Government of India in June 1985, a part of the RLEGP fund was earmarked for the construction of houses for SC/ST and freed bonded labours. As a result, Indira Awaas Yojana was launched during 1985-86 as a sub-scheme of RLEGP. IAY thereafter continued as a sub-scheme of Jawahar Rozgar Yojana (JRY) since its launching in April, 1989. 6% of the total JRY funds were allocated for implementation of IAY. From the year 1993-94, the scope of IAY was extended to cover below the poverty line Non Scheduled Castes/ Scheduled Tribes families in the rural areas. Simultaneously, the allocation of funds for implementing the scheme was raised from 6% to 10% of the total resources available under JRY at the national level, subject to the condition that the benefit to Non-Scheduled Castes/Scheduled Tribes poor should not exceed 4% of the total JRY allocation. IAY has now been de-linked from JRY and has been made an independent scheme with effect from 1st January 1996.

The objective of Indira Awaas Yojana is primarily to help construction / upgradation of dwelling units by members of Scheduled
The objective of Indira Awaas Yojana is primarily to help construction/upgradation of dwelling units by members of Scheduled Castes/Scheduled Tribes, Freed bonded labours and also below the poverty line non-SC/ST rural households by providing them with grant-in-aid.

From 1995-96, the IAY benefits have been extended to widows or next-of-kin of defence personnel and paramilitary forces killed in action irrespective of the income criteria subject to the condition that they reside in rural areas; they have not been covered under any other scheme of shelter rehabilitation; and they are houseless or in need of shelter or shelter upgradation. Benefits can also be extended to ex-servicemen and retired members of the paramilitary forces as long as they fulfill the normal eligibility conditions of the Indira Awaas Yojana and have not been covered under any other shelter rehabilitation scheme.

Funds to the tune of 3 percent have been earmarked for the benefit of below poverty line, physically and mentally challenged persons. This reservation of 3 percent under IAY for below the poverty line, physically and mentally challenged persons would be horizontal reservation i.e., physically and mentally challenged persons belonging to sections like SC/ST and others would fall in their respective categories.

District Rural Development Agencies (DRDAs) / Zilla Parishads (ZPs) on the basis of allocation made and targets fixed shall decide the number of houses to be constructed/upgraded Panchayat wise under IAY during the particular financial year. The same shall be intimated to the Gram Panchayat. Thereafter, the Gram Sabha will
select the beneficiaries from the list of eligible households, according to IAY guidelines and as per priorities fixed, restricting this number to the target allotted.

Allotment of dwelling units should be in the name of female member of the beneficiary household. Alternatively, it can be allotted in the name of both husband and wife.

Indira Awaas Yojana dwelling units should normally be built on individual plots in the main habitation of the village. The houses can also be built in a cluster with in a habitation, so as to facilitate the development of infrastructure, such as, internal roads, drainage, drinking water supply etc. and other common facilities. Care should always be taken to see that the houses under IAY are located close to the village and not far away, so as to ensure safety and security, nearness to work place and social communication.

A maximum assistance of Rs.10,000/- shall be provided to the beneficiary for conversion of unserviceable kutcha houses into semi pucca/pucca house, and to provide sanitary latrine and smokeless chullah in it. The beneficiaries should be involved in the construction of the house.

The dwelling units should not be less than 20 sq.mts. The layout, size and type design of IAY dwelling units should depend on the local conditions and the preference of the beneficiary. The houses should be designed in accordance with the desire of the beneficiaries. Keeping in view the climatic conditions and the need to provide ample space, kitchen, ventilation, sanitary facilities, smokeless chullah etc. and the community perceptions, preferences and cultural attitudes.
INDIRA AWAAS YOJANA (TYPE DESIGN)

LOW COST HOUSES

INDICATIONS
(D) DOORS
(J) JALLI (060X045)
(ST) SEPTIC TANK

PLINTH AREA
21.07 SQ.M.

SECTION AA

FRONT ELEVATION

PLAN OF TWIN HOUSE

SOURCE - IAY INFORMATION BOOKLET - AMRAVATI DISTRICT
INDIRA AWAAS YOJANA (TYPE DESIGN)

LOW COST HOUSES

INDICATIONS

D  DOORS
J  JALLI (0.60X0.45)
ST SEPTIC TANK

PLINTH AREA
2107 SQM

FRONT ELEVATION

SECTION AA

PLAN OF INDIVIDUAL HOUSE

SOURCE: IAY INFORMATION BOOKLET + AMBALI DISTRICT
It should be ensured that each Indira Awaas Yojana dwelling unit is provided with a smokeless chullah. This is a fuel-efficient alternative and being smoke free is healthy and more convenient to use.

The availability of drinking water supply should be ensured by the agencies responsible for the implementation of the Indira Awaas Yojana. Where necessary, a hand-pump should be installed on the site before the work is started, from the funds available under rural water supply or other similar programmes. Construction of sanitary latrine forms an integral part of an Indira Awaas Yojana dwelling unit.

Plantation of trees in the entire habitation or around the individual house should be taken up simultaneously. Trees may be planted near the housing clusters so that, in due course, enough trees are available nearby, to enable the beneficiaries to source fuel/fodder/small timber.

Here an attempt has been made to take stock of achievement of IAY, which revealed, a total houses have been constructed since the inception of the programme up to 1994 to 1995. The table 2.1 shows the year wise details of number of houses constructed under the Indira Awaas Yojna during the period 1985 to 1995.
Table No. 1: Physical and financial achievements under Indira Awaas Yojana (IAY) during the year 1985 – 1995.

<table>
<thead>
<tr>
<th>Sr No.</th>
<th>Year</th>
<th>Expenditure (Rs. in Crore)</th>
<th>No. of Houses Constructed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1985-1986</td>
<td>57.93</td>
<td>51,252</td>
</tr>
<tr>
<td>2</td>
<td>1986-1987</td>
<td>149.18</td>
<td>1,60,197</td>
</tr>
<tr>
<td>3</td>
<td>1987-1988</td>
<td>235.37</td>
<td>1,69,302</td>
</tr>
<tr>
<td>4</td>
<td>1988-1989</td>
<td>149.65</td>
<td>1,39,192</td>
</tr>
<tr>
<td>5</td>
<td>1989-1990</td>
<td>188.50</td>
<td>1,86,023</td>
</tr>
<tr>
<td>6</td>
<td>1990-1991</td>
<td>213.07</td>
<td>1,81,800</td>
</tr>
<tr>
<td>7</td>
<td>1991-1992</td>
<td>263.01</td>
<td>2,07,299</td>
</tr>
<tr>
<td>8</td>
<td>1992-1993</td>
<td>238.84</td>
<td>1,92,582</td>
</tr>
<tr>
<td>9</td>
<td>1993-1994</td>
<td>229.99</td>
<td>1,54,739</td>
</tr>
<tr>
<td>10</td>
<td>1994-1995</td>
<td>237.50</td>
<td>1,95,607</td>
</tr>
</tbody>
</table>

Reporting the performing, achievements and progress may in the implementations in the IAY it has been brought to the notice in Gramin Vikas Newsletter (May-1997) that the Indira Awaas Yojana (IAY) has many positive features. Its major achievement has been to provide the homeless poor a feeling of security, status and identity thus integrating him in the social milieu. This is a programme, which is well received by all the status. Planning Commission evaluation has also highlighted its positive aspects. The IAY has proved to be popular programme and targets have been exceeded in almost every year since its inception. A total of about 30 lakhs houses were constructed from 1985-1986 to 1995-1996 under the scheme. During 1996-1997, an allocation of Rs. 1425/- crores (including 20 percent state share) has been made for the construction of 11,23,560 houses.

Gupta, K. N. (1996), Collector Jhalwar from Rajasthan presented the group report on initiatives in rural employment and IAY.
housing programme undertaken by DRDA’s groups made following recommendations.

Recent increase in the allocation per unit of IAY house to Rs.20,000 is welcome step. The group felt that the selection of beneficiaries among target group may be kept as given below:

1. Widows, deserted or single women
2. Family adopting to two children norms
3. Freed bonded labours
4. SC / ST households affected by flood, fire, earthquake and similar natural calamities
5. SC / St who are victims of atrocities
6. Other eligible households.

It was informed to the group that the enhancement in per unit cost has been made applicable from 1st August 1996. This date should be amended and made applicable with effect from 1st April 1996 otherwise it will lead to discontentment among the earlier beneficiaries and new beneficiaries and also encourage long reporting by field agencies.

Cost effective building technologies should be promoted. Building Centres (Nirmiti Kendras) should be established in the district level primarily to demonstrate cheaper low cost housing technologies conductive to local conditions and cultural ethos and traditions. Local building materials and local patterns should be promoted.

Maintenance of buildings (MBs) and preparations of estimates should be done away with. Final assessment should be done on the basis of plinth area and other essential requirements as per the manual.
The earmarking of funds under IAY has been increased from 6 percent to 10 percent and that of Million Wells Scheme (MWS) from 20 to 30 percent. The benefit of IAY and MWS have also been extended to non-SC /ST families. With effect from 01-04-1994, the permissible expenditure on a house under IAY including the construction of sanitary latrine, smokeless chullah and infrastructure and common facilities has been increased from Rs. 12700/- to Rs. 14000/- in plain areas and from Rs. 14500/- to 15800/- in remote and hilly areas.

Chauhan, S.C. (1997), opined that IAY is in conformity with the provision of National Housing Policy 1988 which recognized the importance of rural housing in the overall development of rural people. Rural housing promotes economic activity, raises quality of life and creates substantial additional employment opportunity acts as a strong motivating force to generate voluntary savings, which ultimately affect the health, sanitation etc. Investment of housing is therefore, necessary for overall development of people in rural areas.

2.2.3 Pradhan Mantri Gramodaya Yojna – Gramin Awaas

The Pradhan Mantri Gramin Awaas Yojna is based on the IAY and has already been implemented in the rural areas throughout the countries. This scheme has been launched only from 2000-2001. The target group for houses under these scheme would be the people who are living below poverty line in the rural areas particularly belonging to SC /ST, Freed bonded labour and non SC /ST categories.

The allotment of dwelling units should be in the name of female members of the beneficiaries of the households alternatively, the dwelling units can be allotted in the name of both husband and wife.
Dwelling units should normally be built on individual plots in the main habitation of the village. The houses can also be built in a cluster if in a habitation, so as to facilitate the development of infrastructure, such as internal roads, drainage, drinking water supply and other common facilities. Care should always be taken to insure that the houses are located close to the village and not too far away so as to insure safety and security, proximity to place of work and social communication.

The house should also not be constructed by any Government / Organization who may, however, extend technical assistance and arrange for coordinated supply of raw material such as cement, steel or bricks if the beneficiaries so required. The spirit underlying the scheme is that the house is not be constructed / delivered by any external agencies and is to be constructed by the beneficiary himself / herself.

Efforts should be made to utilize local material and cost effective technology (developed by various institution) to the maximum possible extent. No type design should be prescribed for dwelling units except that the plinth area of houses should not be less than 20 Sq mt. The lay out size and type design of dwelling should depend on the local condition and preference of beneficiary. The houses should be designed in accordance with the wishes of beneficiaries, keeping in view the climatic condition and the need to provide ample space, kitchen, ventilation, sanitary facilities and smokeless chullah and also the community perceptions, preferences and cultural attitude.

It should be ensured that all dwelling units are provided with smokeless chulahs that are fuel-efficient and being smoke free are
more convenient to use. The construction of sanitary latrines will form an integral part of the Pradhan Mantri Gramodaya Yojna – Gramin Awaas (PMGY-GA) dwelling unit. Plantation of tree in the habitat (or around the individual house) should simultaneously be taken up.

The ceiling of construction of assistance under the scheme will be Rs.20,000/- per unit for plain areas and Rs. 22,000/- per units for hilly / difficult areas. For the conversion of unserviceable kutcha houses in to pucca / semi pucca houses, the maximum assistance limited to Rs. 10,000/-.

The State Government should forward the proposal to the Government of India under the scheme. In addition to proposal may also include provision for internal roads, drainage, drinking water, plantation, improvement of habitation for making houses cyclone and earthquakes resistant.

The funds for the scheme should be released to State / UTs in two installment by the union Ministry of Finance on the recommendations of Union Ministry of Rural development The funds for the second installment will be released after producing utilization certificate.

2.2.4 Credit-Cum-Subsidy Scheme for Rural Housing

The needs of this large majority meet through a scheme, which is part credit and part subsidy, based. The introduction of apart credit, part subsidy based scheme is an important step in the direction of redefining the role of government from that a ‘provider’ to ‘facilitator’ as envisaged in the national housing and habitat policy 1998.
The target groups under the Credit-Cum-Subsidy scheme are rural household having an annual income of up to Rs. 32,000/- only. However below poverty line rural household shall be given preference. Identification of beneficiaries under the Credit-Cum-Subsidy scheme and the modus operandi to be adopted for implementations of the scheme is the sole prerogative of the states.

The implementation agency for the Credit-Cum-subsidy scheme for Rural Housing may be the state housing board, state housing corporation, specified scheduled commercial bank, housing finance institution or DRDA / Z.P. The identification of most appropriate implementing agency under the Credit-Cum-Subsidy scheme shall be left to the state government.

Ceiling of subsidy that can be given under the scheme is a Rs. 10000/-per household. The upper limit of construction loan admissible under the scheme should be Rs. 40000/- per households. The state government is free to identify the agencies from whom the loan should be source and disbursed.

The IAY guidelines pertaining to sanitary latrine, improved chullah, use of cost effective and environment friendly design, materials and technology shall apply mutatis mutandis to be Credit-Cum-Subsidy scheme for rural housing.

2.2.5 Samagra Awaas Yojana

Recognizing some of the lacunae, the Finance Minister in his budget speech 1999 stressed the need to ensure integrated provision of shelter, sanitation and drinking water and announce the launch of a comprehensive scheme namely Samagra Awaas Yojana. The underlined philosophy of Samagra Awaas Yojana is to provide
convergence to the existing rural housing, sanitation and water supply scheme with special emphasis on technology transfer, human resource development and habitat improvements with people’s participation.

The basic objective of Samagra Awaas Yojana is to improve quality of life of the people and overall habitat in rural areas. The scheme specifically aims as providing convergence to activities, till now separately undertaken such as construction of houses, sanitation facilities and drinking water scheme and ensure their effective implementations by suitable and sustainable induction of technology.

To improve the housing stock and availability of housing finance, Credit Cum Subsidy scheme of Ministry of Rural Development, Golden Jubilee Rural Housing Finance scheme of national Housing bank, rural housing scheme of HUDCO and State Rural Housing Scheme are being implemented on priority basis with regular monitoring.

Different line department, namely DRDA, Housing Public Health, Agriculture, and Forest etc, should implement various components of these schemes. In view of this it would be necessary that the scheme be supervised, coordinated and monitored by District Collector. The scheme should be monitored by the Ministry of Rural Development through State Government / District authorities.

Hiraskar, G.K. (1993), stated that the housing board undertakes the execution of the following housing schemes.

Government of India under the housing development plans and provides the funds for the implementations of housing scheme. These are augmented by loans got from the Life Insurance Corporation of India.
2.2.6 Integrated Subsidized Housing Scheme

Ministry of Works, Housing and Supply formulated the scheme in 1952. The houses for industrial workers are provided under subsidized scheme and for economical weaker section houses are provided under subsidized rental housing scheme with a uniform pattern of central assistance i.e. 50 percent loans and 50 percent subsidy. For the employees the maximum period of repayment is 25 years at the rate of interest 7 percent and 11 percent in case of default in payment.

2.2.6.1 The Subsidized Industrial Housing Scheme.

The Government of India provides the assistance for housing construction for labour. The board has suggested the following types of accommodation.

1) Small two-roomed houses with minimum plot size of 232 sq ft. or (21.56 sq. mt.).
2) Regular two-roomed houses with minimum plot size of 356 sq. ft. (33.0 sq. mt.).
3) Hostel with minimum plot size 112 sq. ft. or (10.40 sq. mt.).
4) Dormitories with minimum plot size of 87 sq. ft. or (8.08 sq. mt.).

The eligibility for occupant is as under.

a) For small two room houses, the maximum wages of the workers should not exceed Rs.250/- per month.

b) For regular two room houses the maximum wages of workers should not exceed Rs.350/- per month. A worker whose wages fall above
Rs.350/- per month but do not exceed Rs.500/- per month may continue to occupy subject to his capacity to pay the economic rent.

c) No Workers whose wages exceed Rs.500/- per month is not eligible to occupy the house.

2.2.6.2 The Subsidized Rental Housing Scheme

The houses are provided on rental basis for the Economically weaker section of the community, whose annual income is below Rs.4200/-. The loan assistance is based on ceiling cost of standard rent. The ceiling costs are also revised for different types of accommodation and places.

2.2.7 The Low-Income Group Housing Scheme.

The low-income group-housing scheme (LiG) was introduced in 1954 for the persons whose annual income does not exceed Rs.7,200/- and who do not own houses either in their own name or in the names of their wives / minor children. Long term house building loans are given to eligible persons. The loan assistance is restricted to 80 percent of the estimated cost of construction, which should not exceed Rs.12,500/-.

The rate of interest is 7 percent for the repayment for the period of 10 years and 7.5 percent of the period exceed 10 years or of any other rate that the board may prescribe from time to time. However, the maximum period for repayment is 25 years. The rate of panel interest if 11 percent an over due installment.

The accommodation to be provided in each house built under this scheme should not be less than 232 sq. ft. (21.56 sq.m.) and not
more than 1200 sq. ft. (111.54 sq.m.) of floor area. As far as possible two room houses are built and costly structure are discouraged. Suitable typed designs are prepared by the board and are made available for sale.

Whenever houses are ready the board calls for application by way of notification published in Government gazette and in the local newspaper. Eligible persons who do not own houses or site in their name or in the names of their wives / minor children can apply for the allotment of the houses in the prescribed form accompanied by the necessary deposit. The houses are disposed of on lease-cum-sale basis as per the allotment rules and regulations of the Board. In case of allotted houses supervision charges at 9 percent on construction cost and percentage at 1 percent are levied for providing civic amenities.

Cash loans are admissible to eligible persons and institutions like local Bodies, Co-operative Housing Society, Public Institution run on “No profit No Loss” basis and Non-Government recognized Health Institution and Hospitals. A scrutiny and inspection fee of 1.5 percent of the sanction loan will be levied.

2.2.8 The Middle-Income Group Housing Scheme.

The Middle Income Group Housing Scheme (MIG) was introduced in 1959 for the persons whose income is between Rs.7,200/- to 15,000/- per annum and who do not own house either in their name or in the name of their wives / minor children. The loan assistance is restricted to 80 percent of the estimated cost of construction, which should not exceed Rs.25,000/-. The maximum period of repayment is 25 years at the rate of interest of 7 percent for the 10 years and 7.5 percent or any other rate that the Board may
prescribed from time to time for the remaining 15 years and 11 percent in case of default in payment on over due installment. The accommodation to be provided in each house built under this scheme should not be less than 700 sq. ft (65 sq. mt) of floor area.

2.2.9 Plantation Labour Housing Scheme

This scheme is provided to benefit the plantation labours. The ceiling cost is limited to Rs.3,200/- per house. The central loan is up to 50 percent and subsidy is 37.5 percent. The remaining 12.5 percent has to be borne by the planter. The plantation area should not be less than 25 acres. The assistance for house construction to a planter sanction during any financial year should not exceed the amount admissible for the construction of houses for 8 percent of the total number of resident workers employed on the plantation on an average during the preceding financial year. The rate of interest is 6.25 percent or as prescribed by the state government from time to time and maximum period of repayment is 25 years. Penal interest at 11 percent is levied on over due installments.

2.2.10 Land Acquisition and Development Scheme

Under this scheme financial assistance is given to the State Government as a loan repayable in a period of 10 years at interest of 61/2 percent or any other rate prescribed by the Government for acquiring and developing lands in selected areas. A penal interest at 101/2 percent is levied on defaulted repayments. The land acquired is to be used for house building under different schemes and for providing community facilities like schools, playgrounds, parks, shops, hospitals, offices etc.
2.2.11 **Slum Clearance / Improvement Scheme**

The Slum Clearance / Improvement Scheme was introduced in 1956 to aid four types of accommodation: open developed plots, skeletal houses, pucca house, hostels and dormitories. Various factors such as rent payable depend on the capacities of the slum families; the cost and availability of land and other local condition are taken in to consideration.

2.2.12 **Village Housing Project Scheme**

The Village Housing Project Scheme was introduced in 1957 for the establishment of housing project in about 5000 selected all over the countries. Financial assistance is given in the form of loans not exceeding Rs. 2,000/- or 66.66 percent of the cost of construction of the house, subject to a ceiling of Rs. 2000/-. The scheme is thus based on the principles of aided self-help with technical guidance to the beneficiaries. The programme is administered through Rural Housing Cells set up in the different states.

2.2.13 **Life Insurance Corporation Funds for Middle Income and Rural Housing Schemes**

Since 1958 Life insurance corporation funds are being systematically controlled to finance middle-income group housing schemes. This was set up particularly for the benefit of the employees of state Government but rural housing scheme are also obtained aid from this source.
2.2.14 One Lakh Housing Scheme (OLHS)

One of the most important efforts in serving the rural poor has been the ‘One Lakh Housing Scheme (OLHS)’ that was implemented during 1972-1976. This scheme was essentially a support the Central Scheme of provision of house sites to landless workers in rural areas launched in 1972. Developed house plots were to be given free to eligible beneficiaries through grants from the Central Government. However, additionally, the state government ‘decided to give a house practically free of cost’. Each family had to pay only Rs.100/- towards a house built and a cost of between Rs.1250 – 1500/-. The main efforts by the state government were to turn this opportunity into a popular mass movement to boost the Central scheme. Besides the governmental grants, efforts were made to mobilize resources from public at large through donations also. Out of this massive effort, about 60,000 houses were completed over a period of about five years, averaging about 12000 units per annum.

2.2.15 Cooperative Housing Colonies

Several cooperative housing colonies have sprung up through the entire scheme mentioned above. They sponsored different categories of housing colonies such as ‘low income’ ‘middle income’ ‘high income’ and ‘workers’ colonies. This entire scheme provided reasonable houses and thus helps to improve housing situation in India.

2.2.16 Rural housing project scheme

According to Prayag, Anjali (2002), its a Programme that’s popular with Legislators across the State. And how popular it is can be measured by the number of EWS (economically
weaker section) houses that the State-owned Rajiv Gandhi Rural Housing Corporation (RGRHC), has helped build- 4,14,424 units across all districts of Karnataka.

RGRHC was set up three years ago with an ambitious programme- to build 11 lakh houses for homeless people by the year 2004.

RGRHC has initiated self-help groups under this programme. This implies that the beneficiaries of the EWS project would get the first option to construct the house themselves. Only if the beneficiary refuses, then the contract would be awarded to a construction agency.

The selection of the beneficiary - which is done by a local committee headed by the local MLA, documentation - the beneficiary needs to produce certain documents for verification, agreement, mortgage deed to the building and ownership takes about nine months time.

The assistance given to each house is Rs. 20,000 in rural areas and Rs. 25,000 in the urban areas. Between April 2000 and September 2002, RGRHC received Rs. 440/- crore subsidies and Rs. 346/- loan assistance.

The Corporation has adopted a loan recovery method to facilitate easy repayment for the beneficiary- Rs. 115/- a month for rural areas and Rs. 150/- a month for urban houses for 180 months.

The Corporation has experimented on an integrated housing project where the houses are equipped with solar lighting and stoves, drinking water, the roads are lined with trees and there is a school and a temple.
2.3 Housing design to fulfill conditions and requirement with regards to design, construction materials, amenities, health and hygiene, social securities, social forestry and environment for better living.

Besides providing the shelter, it also provides other conditions and requirement for better living which are the necessary requirements in terms of design, number of rooms, space, construction materials, ventilation, light, other amenities including health and hygiene besides social security and clean environment. Many people have their own reservations to disclose for rural poor housing. Information pertaining to the same will certainly find place in this sector to read and know.

Carter, D. C. and Hinchcliff, K. S. (1944) stated that “Research in Housing must be dependent on to solve pressing problems of family, needs, better comforts and convenience, greater economy and improved materials and methods.” Basic faults cannot be corrected as long as houses are individually designed and traditional construction practices are followed. Potential betterment in housing will be realized in many ways if research is adequately supported. Among the needs are

1) Studies in construction process, especially to utilize the machines, equipments and new building techniques to reduce labours and speed up construction.

2) Development and utilization of new materials or combinations of materials to produced sizeable construction units easily put in place.

3) Studies of family living activities, family needs and preferences.

4) Development and specifications that can be adopted to various situations.
In other countries, many institutions are engaged in research to low cost and better results. In India too, building materials producers such as Associated Cement Companies (ACC) etc. can come forward, has they already have started and with special interest may help some experts to engaged in research in housing such researches should be conducted about other building materials.

According to Ramaiah, M. (1984) the housing policy must not be viewed simply as an instrument for providing shelter but rather as an instrument of social policy to achieve growth with social justice.

According to Agan, T. (1956), the response of an individual may be limited or heightened depending on the provision made in this home for rest, the privacy or peace and inner strength. For centuries privacy was the privilege of religious devotee who sought freedom from the pressure of worldly things and the fear that he might become more "Outer Worldly". Housing may affect family life by the provision its make or does not make for those persons not of the immediate groups as aged aunts or grand parents who are included in the family although not an immediate part of it. Unless the house is so planned that the apartment of such persons is recognized, there will be a marked complication of group life.

The house should also facilitate self-expression and the degree of freedom of action on the part of individual member of the family. Houses that attics or basement where the creative efforts of members of the family may be undertaken without affecting the serenity of lives of others, houses that afford space for the storage of collection of stones, birds eggs and stamps and houses that provides for workshop and play rooms are serving the family not only by affording shelter but
also by giving an adequate background for desirable activities members of the groups.

Housing may affect family life either favourably or adversely depending upon the provision it makes for the routine activities of the households. Mothers are often so weary that they are unable to contribute to the social life of families because of heavy toll of them by house, large in size and with scattered and unorganized work center.

Houses constructed on various ground level, approved by artist for their interest and charms may be found by the home makers to be both hazardous and wearisome places if such levels occur in the line of traffic between parts of the works area and social room. The failure to provide all productive activities which are followed in a house such as sewing or laundering and for extra income producing activities such as care of dairy and poultry product leads to crowding and disorder. The provisions made for social life are also important. In olden days the last kitchen served for family gathering. But now days the living room is sued for it. A house with a large living room provide for social activity of the family and permits privacy from the out side world.

It should provide for satisfying social contact between members of the family and the world out side. The house should remains important as a background, it should not become a fetish that hampers rather than contribute to the life of group.

The aim in any housing venture should be provision of reasonable, goods, functional and comfortable housing. Thus today’s housing should provide not merely a shelter but also a comfortable dwelling place constructed with new techniques with ultimately will bring down the cost.
Whittic, A. (1957) opined the house should be of a size and plan to give adequate place and facilities to its occupant for domestic and cultural pursuits, social intercourse, recreation, relaxation and rest. The house should be pleasing to contemplate.

According to Beyer, G. H. (1965), a house plan should give functional. Beyond that the house should be appearance not only to its occupants but also to others of being simple comfortable and interesting rather than ornate or disruptive. A high degree of privacy from without as well from within the dwelling enhances the livability.

Mittal, B.D. (1977) argue that building constructed for rural needs based on the methods and technique developed by the Central Building Research Institute Roorkee for the construction of residential and other building in rural area. It is stated that the buildings constructed for rural needs based on the systems described in the paper will helps to create a better living environment in the villages. The building system are mostly based on partial prefabrication building technique that economize in space, materials and labour besides reducing the construction times considerable as compare with traditional building construction methods.

According to Jayaraman, R. (1984), in his article “Low Cost Housing in India,” he stated, an attempt has been made to develop appropriate, technique for housing construction based on locally available material, climate, culture, pattern of living etc.

**Building Materials**

Since the dawn of civilization, soil has been utilized for building either in the form of burnt or sun dried bricks. Soil particles are characterized by their grains sizes.
Stone

Stone is one of the most important material used in the construction of houses in one or the other form obviously because of its particular types of property its provide considerable strength to the construction. Profuse used attributes to its cheap cost and availability in glut. If fulfilled the other form qualities otherwise should be attached to construction materials as stated below.

1) It should be durable i.e. resist the action of atmospheric agencies, such as heat, cold, piercing range, acid dissolved in rainwater etc, this tend to either discoloured or wear it out.

2) It possesses ease of dressing for this purpose it must be close grained, homogenous and comparatively soft.

3) It should have a good appearance. The colour of the face should harmonize with the general architecture of the building and 4) It should not have flaws or cracks and should give a clear and ringing sound when struck with a hammer.

Bricks

The characteristics of a good bricks are that it should be so hard that it should not be possible to make a scratch on the surface with the fingure nail, it should gives ringing sound when struck, it should be heavy, and if allowed to drop flat from height of three feet on a hard ground should not break. It should have all faces perfectly rectangular and all edges sharp.

Sand

This should be coarse, clean, hard, strong, uncoated and free from clay, dust, mica and soft flaky particles such as of shell. Crushed
stone is also used but it should be free from excessive proportion of very fine particles like dust. Sand required for mortar brickwork need to be sieved through a 3/8 inch mesh # sieve.

**Mortar**

Mortar is a mechanical mixture in varying proportion of binding material like lime or cements and inert materials like sand and surkhi.

**Timber**

Timber like stone is man’s oldest building material.

**Iron**

Iron is the most commonly used metal in building works in three forms cast iron, wrought iron and steel.

He has stated that the utilization of local materials and skills, innovative design and the application of most appropriate technology are central problems in the design concept.

He opined that, the experimental paper houses constructed during 1976 by the Regional Research Laboratories, Jorhat were very economical. The low cost coupled with the rapidity of construction make paper houses ideally suited for housing millions of people who get disrupted due to floods, drought, earthquake and other type of disaster.

enclosure has rightly given some of the key points for consideration in finalizing housing structure such as structural soundness, safety aspect, economic consideration, social aspect, employment potential and finally use of local materials.

**Structural Soundness**

This economy of dead weight makes the structure economical and safe because of continuity. Due to movement resistance of joints the structure as a whole behaves like still frame building.

**Safety Aspect**

Safety against fire hazardous is same as for the conventional brick or concrete building, at least up to five stories. Other safety factors like earthquake are for better in comparisons to conventional brick building because of the light weight resulting in smaller earthquake forces and distribution of the earthquake on all members due to continuity and greater a strength of the building to lateral forces.

**Economical Consideration**

Structural economy has been achieved by keeping the dead load to a minimum. This makes the structure light resulting in saving the materials such steel and cement. This results in overall economy as less interest has to be paid and the equipment gives much more service and reduces the depreciation cost, per unit construction. Detailed estimate shows that amount of cement and steel used is also comparatively smaller and on overall basis this building can compete with conventional bricks or R. C. C. building in terms of cost as well.
This is a major attraction where mass construction of low cost houses for economically weaker section and low-income group people has to be undertaken by public or private agency.

Social Aspect

Even the poorest client will have the safe nice look house though of a small floor area. This may go a long way in reducing the social imbalance in housing between rich and poor.

Employment Potential

In rural areas where the housing schemes are to be undertaken, transportation cost and use of fuel can be heavily reduced in addition to give employment to local persons. Thus there is no danger of factory made houses as happened in European countries where penal houses are just brought to site and assembled by expert technician without any employment to local persons.

Use of Local Materials

These houses try to make a maximum use of locally available materials. Thus in Indian countryside where Baggies is abundantly available it can be used for woods panels.

Mali (1984) in his article structural system for today's housing published in International Conference on Low Cost Housing for Developing Countries reported that the following types of roof construction have been widely used worldwide, however, only a few of them are practical in India. A) Accessible roofs same as floors. B)Non-accessible lightweight roofs. C) Decks. He further remarks that lightweight roof that can offer the speed for construction is generally
desirable, however for maximum use they should be accessible, usable and preferably flat. Therefore they should be similar to floor construction.

Mathur, G. C. (1984) opined that bricks are used in a traditional house building the reason being that bricks building are low in cost and good in performance, in other words, the bricks masonry system will continue to be widely employed for long period of time to come. However, clay bricks production and construction is labour consuming as well as labour intensive and in some areas there is a lack of clay resources. Hence in a quite number of regions, attention has been given to converting industrial wastes and other local material in to new walling material by using new technology and new technique.

He also opined that 1) In general, housing conditions in rural areas are unsatisfactory. Rural dwellings are usually small, insanitary, often in a dilapidated condition and made of locally available building materials that are flimsy and non-durable. The roofs are very low and windows, if provided, are small and inadequate on account of which the rooms are dark and damp. 2) One of the important aspects of unsatisfactory housing condition pertains to inadequacy or absence of essential services such as potable water supply, sanitary arrangement for disposal of wastes, overcrowding, congestion etc. which are detrimental to maintenance of good quality environment, particularly in urban areas. Great emphasis has therefore to be given to the provision of essential services.

Mittal, Ved (1984) in his article “Planning parameters for low cost housing for the poor” appropriately provided meaning of housing concept of low cost housing, location aspects of housing scheme,
design of physical infrastructure, used of local building materials and aided self help housing.

According to him, "Housing is as complex as the societies it serves." The word housing is a understood narrowly to denote a house or shelter without referring to other ingredients which stand for making a satisfactory or acceptable living.

While offering his remarks towards the concept of low cost housing he mentioned low cost housing is a relative concept and is more concerned with economics of scale by way of mass production of indeterminate resources, bulk procurement and building technology associated with the respective technique, many of which seek to cut time of construction rather than the use of labour. Low cost housing for poor is synonyms with their ability to pay. It is not merely the low cost house / dwelling units with low standard and lower finishes but if all other related services are also coordinated and designed with low cost emphasis, within an over all system then it might be possible to achieve successful results below the low cost threshold.

As far as location aspect of housing scheme his concern he is of the opinion that most cities of the developing countries lack rational spatial disposition of land uses. In the absence of work place relationship there definite tendency for growth of squatter settlement. Locations, in addition to the material standards of the dwelling unit is now generally recognized as an equally important factor in housing. Middle and higher income households can afford economic strain of unsuitable housing locations and can often compensate by means of alternative expenditures, automobile or telephones etc. The demand for residential locations near work places is high in bigger cities. The very poor would sleep in the streets rather than accept a house as the
periphery. Similarly the planning of economic activities be synchronized with the investments in housing and development, to avoid marginal settlements at a later date and there after policies of slum clearance.

While proposing design of physical infrastructure be recommended that provision of infrastructure facilities it as costly as construction of house itself and the house without these facilities is an incomplete housing system. Under the Kanpur Urban Development Project (KUDP) the water supply and sewerage connection have been planned at the backside of the plot. For four EWS plots only one inspection would be provided against the normal provision of one for two plots. It would also avoid the unnecessary water supply as sewerage as under the Kanpur Urban Development Project.

Its views about aided self help housing are worth considering which suggest that, investment can be kept to a minimum by involving the principles of aided self help housing specially for Economically Weaker Sections (EWS). About 40 percent of total cost of the house is the cost of labour. When centralized systems (Government and Housing Authorities) are used to house the poor, their scale and limitations of management rule out the essential variety and flexibility of housing options, which the poor display in their own housing development evolved over a period. The poor, given freedom and space, have traditions and the capacities for a judicious choice of houses within their means. The planners must devise solution, which permits freedom to the poor to build without making services, social infrastructure and transport facilities expensive.

Sureshchand (1984) in his paper presented in conference on low cost housing for developing countries discuss appropriate flooring
roofing scheme for mass housing and further pointed out that in India, floors and roofs account for 20 to 25 percent of the over all cost of buildings and consumed substantial share of source materials like cement and steel. Any saving in these source materials alone will go a long way in reducing the total cost of buildings to meet the gigantic need of mass housing construction programme, prefabrication is one of the solutions. In this way the houses can be constructed more quickly and better in quality than the using conventional method and a much smaller labour force is needed on site encounters considerable savings in material and time.

Thomos Poulase, K. (1984) opined that some of the international organization like Lions club, Rotory club, Youth’s men’s club and leading religious institutions like “Save a family” society, Vincent Depaul society, Nair service society, Shri Narayan Dharam Paripalana Yogam, Muslim education society etc. has successfully implemented small housing scheme for the poor in limited way. Taking lesions from them, Government decided to enlist there cooperation and get them involved in the Housing Programme. The financial, technical and managerial assistance are given by the state.

The seminar on low cost housing was conducted in March-April 1983 at Tiruananthapuram enable the Government to select low cost design, materials and techniques. Seventeen houses of different design and techniques were constructed for exhibition and evaluation scheme in question are adaptations of some of the award winning design, with minor modifications to make them more suitable to the socio climatic condition in the state. Training courses for Mason were also conducted by the State Housing Board in collaborations with state
wings of the National Building Organization to expose them to some of the new saving techniques in housing.

According to Verma, N. and Datta, A. (1984) in their article “Rural Housing and Environment” appeared in “Three decades of building research in India” published by Rastogi stated that to make the cost of shelter and public health service low and also to reduce the demand of scarce construction materials a few measure, stated below have been recognized as guidelines.

i) Locally available material and reduced the use of scarce material like cement, steel, burnt brick etc.

ii) Encourage use of aided self-help and mutual help for construction.

iii) Develop alternative materials and construction techniques to reduce the cost of construction by exploiting property and limitation of both local and scarce materials.

He has stated that No Research and Development (R & D) efforts is fruitful unless its benefit reaches the people for whom it is intended. Thus the extension mechanism is an essential part of this effort. Unfortunately, in spite of giving best attention to it, it is physically impossible to react with the people with the meager resources, at the disposal of a research establishment. Thus cooperation has to be procured from both the Government and Non Government agencies for this purpose.

Verma and Datta (1984) while stating the importance of improving house condition in rural areas is considered essential not only because it would enable a villager to lead a clean and healthy life, but also indirectly it will bring about an improvement in production of agricultural and dairy products because of better health and
productivity of the villagers. At the same time, a better living environment would stimulate a greater demand for goods and services, generate more employment opportunities and, slow down the migration from rural areas to urban areas. Thus, improvement of housing conditions in rural areas may lessen the pressure on urban housing also.

Wiesinger, Rita (1984) "Housing for the poor: Changing perspectives and Vision." The priority which poor people give to infrastructure is understandable. Existing infrastructure constitute a resource and absence a constraint. Houses for the poor which stand in isolation and away from infrastructure perpetuate under development and the children who are born and grow up in such isolated blocks are further condemned to poverty. It is infrastructure that contributes to the improvement in the "quality of life". Infrastructure, for example, can strongly influence access to a university education. Professor Michapl Lioton has strongly pointed out that a child from an Indian town or city is 8.5 times more likely to go to university education than a village child. In such a case, the lack of infrastructure is further widening in qualities, University places are used to train less able urban children rather than more capable rural children. The absence of infrastructure and essential services often leads to the rejection of isolated modern housing schemes and eventually to out migration.

Varghese, M. A., Ogale, N., and Srinivasan, K. (1985), said that the plot should have water supply, electricity, road, drainage already provided, and where public conveniences are also within reasonable walking distance. The site possesses some natural object of beauties such as trees, slopes etc. So that one can enjoy the view of
landscape. It should not be very close to heavy traffic high way. It should afford ample unobstructed sunlight and breeze.

In the selection of sight one should consider the practical conveniences such as nearness to school, post office, public telephone, banks, hospitals, market and many public conveniences. The site should be free from traffic danger and noise.

Patel, Ishwarbhai (1990) in his article "Low cost sanitation programme" appeared in "Nirnay" reported that under the rural sanitation programme (IDA credit 1643 – IN) it is planned to construct 20000 latrines in rural areas of the state at a cost of Rs. 55 millions. This Gujarat Water Supply and Sewerage Board (GWSSB) was implemented the programme with the help of Non Governmental Organizations (NGO’s) in Gujarat. The concept of involving NGO’s in construction works is based on the fact that NGO’s are directly in contact with rural people and so they can understand their needs and motivates them easily to construct latrines in their houses. The Environmental Sanitation Institute, Ahmedabad, which is actively involved in this field, is appointed by GWSSB as Noble Agency to carry out these works with the support of different NGO’s of the state. On 15th November 1988 GWSSB issued a resolution to handover the works of rural sanitation programme to Environmental Sanitation Institute (ESI).

According to Patra and Suresh, V. (1992) the conventional bricks construction cost was as much as Rs 614/- per sq.mt. The mud house with modern input cost as little as Rs. 215/- per sq.mt.

According Singh, Muha (1992) Our country has a wide range of variation in climatic and geographical condition, living habits, traditions and life style of the people the choice of selecting
construction materials and techniques depend on these factors. The proper selection of materials / techniques can substantially reduce the cost of construction. Such as
1) Sun dried bricks
2) Stabilized soil blocks
3) Water proofing mud wall
4) Fire retardment treatment of thatch roofs
5) Preservative treatment of bamboo
6) Asphalted roofing sheets
7) Used of secondary timbers
8) Precast stone blocks masonry
9) Precast bricks panel roof
10) Clay tile roofing

According to Hiraskar, G. K. (1993) Neglect of sanitation is often evidenced by heaps of rotting garbage and pools of sewage, whilst the absence of latrines enhances the general pollution of air and soil. Houses many without plinths, windows, and adequate ventilation, usually consist of a single small room, the only opening being a doorway often too low to enter without stopping. In order to secure some privacy, old kerosene tins and gunny bags are used to form screens, which further restrict the entry of the light and air. In dwellings such as these, human beings are born, sleep, live and die.

Stating the necessity of drain in the dwelling of IAY, in the manual of JRY (1994) it is mentioned that a system of drainage from the house should also be provided to avoid overflow of sullage from the kitchen, bathroom etc. which causes nuisance and health hazards.

According to Bhalkare, V. K., Gulhane, A.R., Kale, P.B., Kolase M.N. and Awasthi, S. (1996) reported that the present market
rate of ordinary bricks varies from Rs.1,000 to 1,100/- for per thousands bricks. It may also be mentioned here that one block is equal to about 4 bricks, which is the major advantage apart from the product ability of maintaining inside temperature / micro climate and its being of light weight. The brickwork does not give evenness of work. On the other side the block works make the construction attractive and finished work is of good workmanship. The cost of cement, metal, dust blocks for 1: 8, 1: 10 and 1: 12.

The unit of “Samata Ghar” which was design, developed and constructed by department of farm structure, College of Engineering and Technology Akola, Dr. Punjbrao Deshmukh Krishi Vidyapeeth, Akola, was considered for finding out the economic feasibility and saving of construction material cost using cement dust blocks. In case of bricks 1cm. Layer of mortar was laid in between the layer of bricks and 1.5-cm. plasters on each side of the wall, where as 1 cm. Of mortar was laid down the layer of blocks and 0.5 cm. Plaster on each side of the wall.

It has been observed that the construction cost of brickworks for 1cm. block work having cavity 20 percent with 1: 8, 1: 10 and 1: 12 cement metal dust combination was observed to be Rs. 882.20/-, Rs. 777.70/- and Rs. 684.60/- respectively. The results show saving of Rs. 72/- in case of 1: 12 combination, Rs. 21.20/- and Rs. 125.60/- in excess in case of 1: 10 and 1: 8 combination respectively. However, the microclimate in the house can approach to comfortable zone as compared to brickwork.

It was revealed that construction cost for “Samata Ghar” using brickwork is Rs.10,051/- Where as the construction using blocks of 1: 8, 1: 10 and 1: 12 cement dust proportion is Rs.12,451.28, Rs.
10,977.28 and 9,663.36 respectively for 20 percent hollow blocks. The above figure showed that the saving could be achieved up to 9 to 10 percent in case of 1:12 combination. On the other hand the combination of 1:8 and 1:10 ratio combination the cost exceeds and there is no gain. However, the construction of “samata Ghar” using hollow blocks can effectively maintain the inside temperature to convenient level.

Sharma, M. (1997), reported that the traditional building materials like thatch and mud need not necessarily mean a return to destitution and poverty. Mud is not only cheap and easily available, it is also a healthy building material in any case healthier than cement. Mud is an ideal building for hot and dry places. It helps to make the summer more comfortable. Mud is at once the most widely used and most neglected materials in the world. It finds favour neither with architect and engineer nor with builders and building codes. Mud is, indeed the only materials in the world that can provide comfortable shelter to one and all.

According to Raj, K.N. (1996) the most prominent source, evidently, is wells, which is used by about 70 percent of rural households; this figure is higher than that for either hand pumps or taps. Moreover, water available from a well within the household premises.

Das, Kesab and Visaria, L. (1998) made an extensive field survey concerning evaluation of Integrated Rural Sanitation Programme conducted in north Gujurath. It was learnt that the use of latrine facility is taken by all members of the beneficiary household of the scheme.
D'souza, R. (1998), according to him the housing need of the nation is estimated somewhere about 32.85 million units in 1985 in urban and rural areas. In Mumbai 4.12 millions (1990) out of 9.19 millions (1991) live in the slum. Metropolitan cities of India, Mumbai, Kolkata, Delhi and Chennai about 13.82 millions peoples lives in the slum. During 1981 –1991 the population of Mumbai and two adjoining cities of Thane and Kalyan has grown up by 20.2 percent, 15.71 percent and 64.54 percent respectively. Ironically the large number of skilled and unskilled workers engaged in construction of housing and civil engineering works lives in the slum.

According to Sen, Siddhartha (1999) advancement of people's Action and Rural Technology (CAPART) mainly for activities concerning infrastructure of rural housing with the growing proclivity towards economic liberalization and reforms, the state increasingly expected the NGOs not only to emulate its own agenda and pattern of development.

World Bank (1999) reported that the improvement of infrastructure for rural water supply would naturally involve large capital investment and long payoff periods.

According to Florentino, E. (2001) roofing, being one of the most significant parts of the house, has been a big challenge to innovative technology for low cost construction. This patent attempts to produce a roofing product, which is of a tile design that would be reflective of our heritage architecture. Using indigenous materials including rice hull, sawdust, abaca fiber and bamboo reinforcement with cement as a binder, be a good insulative materials.

Gomez, M. (2002), public housing scheme – Up gradation scheme, Rehabilitation scheme and Scattered housing scheme
involving the state and other developmental agencies often call for beneficiary participation in the implementation stage. But beneficiary participation in the actual stage is limited, if not at all. Surely the actual design of the dwelling units has to include the aspiration and needs of individual families to be truly responsive. This calls for users involvement in the design of dwelling units.

The vast numbers, socio cultural heterogeneity and time bound, resource bound state scheme. This complexity naturally calls for more order in the contributions and more organization in the process. Therefore we need to systematize find a feasible, simple; logical and replicable system of incorporating users needs an aspiration in state housing scheme.

The system devised must also

1) Require no particular design skills on the part of beneficiaries or conceptual skills are required to understand two-dimensional drawings.

2) Make the process of interaction between architect and beneficiary goal oriented to the point.

3) The process of participatory design as effortless and time saving as possible for the architect.

4) Make the beneficiaries think for themselves in a systematic manner to cover all aspect of house design.

5) Serves as an educating aid for the beneficiaries regarding wholesome living environment.
2.4 Smokeless Chullah—Most Desirable Component in Rural Housing with Particular Reference to Adoption and Non-Adoption.

The whole nation is turning its attention to ‘Shelter for Homeless’. It is also important that ample attention is paid on kitchen, which is the nerve center of the house. A well-lighted, well ventilated and well equipped smokeless and dirt free kitchen makes the kitchen work enjoyable. Scientists greatly concerned with environmental pollution have started paying attention to pollution free kitchens through alternate fuels and cooking source.

Lakshami, K. and Kamalnathan, G. (1968) observed that there is no trouble in smoke used of smokeless chullah.

Grover and Sharma (1981) stated that adopting the efficient system to eliminate smoke from village homes will solve not only the problem of health and housing but also that of fuel and forestry economy that are essential for the prosperity of the country. The uses of smokeless chullah will help women folk to be healthy and therefore will also increase their life span.

Pandit (1983) recommended thermal efficient smokeless chullah to mitigate the health hazards and drudgery of rural women. A thermal efficient chullah can improve fuel efficiency up to 25 percent as compared to ordinary chullah, which has a fuel efficiency of only 7 percent.

As pointed out by Batish (1985), most of the kitchen in rural India are suffocation chambers of pungent smoke, violently irritating the eye, nose, lungs and also the temper of the housewife.

According to George (1985), efficient smokeless chullah records 50 percent of fuel saving.
Jindal (1987) in her study also observed that the smokeless chullah which is installed in the houses of rural people is easy to ignite, emits no smoke, causes no irritation to eyes, keeps the cooking utensils clean.

Sarin, (1987) opined that the concept of developing village women as chullah mysteries has also been introduced by a number of voluntary organizations in several states as a part of extension methodology. Even with these enormous efforts, improved cook stove dissemination has not gained its popularity.

Kaur, R and Singh, R (1989) observed that smokeless chullah is one of the important energy-conserving devices. It is an improved method of energy utilization to reduce use of fuel wood. Although 50 percent of the respondents had adopted Dhauldhar chullah (smokeless chullah) but none of them was adopting fuel package of practices for efficient use. Numbers of reasons were expressed by respondents for non-adoption and partial adoption of recommended practices of Dauldhar chullah, that 29.67 percent of the respondents pointed out the “Defective Construction” as the main reasons for discontinuance and partial adoption of Dhauldhar chullah. “Not useful of short period” came as the second important reasons for partial adoption of Dhauldhar chullah. “Difficulty in replacement of chimney and dampers” emerged as the third important reason affecting adoption and non-adoption of Dhauldhar chullah. “Difficulty of heating during winter” was found to be the fourth important reason for partial adoption and non-adoption of Dhauldhar chullah.

Other reasons expressed by the respondents of the project group were “not easy to start,” “burning of chimney,” “difficulty of
cleaning of chimney, ” traditional values attached with local chullah, problems of repair and maintenance.

Thus the attempts should be made to appoint well-trained chullah instructor and their proper check should be needed. Intensive and frequent chullah training with respect to construction and maintenance of the chullah should be imparted and follow up action should be intensified to ensure greater adoption of Dhauladhar chullah.

Chandel, S. S. (1990) opined - 1) The survey results indicate that the programme needs a strong political motivation like “a tap, for each kitchen a smokeless chullah for each kitchen.” And, for this purpose no resources are required. 2) The funds at present are provided by the Ministry of Energy Government of India, with a target of Rs. 50000/- improved chullah every year for Himachal Pradesh. 3) Village women are needed to be educated about the health hazards of smoke emissions and fuel wood saving to ease the pressure of forests.

5) Perhaps television is the only medium for instant propagation.

Kaur, R. and Singh, R. (1990) concluded that respondents from the project group has significantly high knowledge and adoption with respect to Dhauladhar chullah as compared to control group. This difference can be attributed to various educational technologies being used in the project area.

Therefore, it can be suggested that frequent individual visit, meetings with Mahila Mandal, Village training camp, tour and dramas should be employed to educate and motivate women to adopt Dhauladhar chullah.

Defective construction of the chullah by the chullah constructor was found to be the main problem in the transfer of technology. Thus the attempt should be made to appoint well trend chullah constructor,
intensive training with respect to construction use and maintenance of the chullah should be imparted and follow up action should be intensified to ensure greater transfer of technologies.

Muneer, K., Doeroi (1990) revealed that 100 percent respondents in the advanced and backward villages reported that there was no smoke in their kitchen when they used the smokeless chullah and even soot formation on the vessels was also very less. Majority of the families in the backward villages (64 percent) reported that it took less time for cooking of food and (50 percent) reported that fuels consumptions was also less in smokeless chullah.

According to Bhat, C. M., Bhagat, R. and Jhamtani, A. (1991), the study revealed that more than 55 percent of families had discontinued the use of smokeless chullah than ladies above 40 years of age. Although many respondents were aware of the advantages of smokeless chullah yet it did not become popular because of the increase fuel consumption, its unsuitability for chapatti making, inability to repair the chullah and clean the chimney. Many of the families did not require the second pothole and therefore, preferred their traditional chullah.

Laxhmi, S. (1992) observed that 70 percent and 86 percent households in districts Coimbatore and Trichy respectively, were of nuclear type while almost 60 percent were medium sized families consisting of 4-6 members. 60 percent heads of households and 75 percent homemakers were engaged as coolies. The average monthly income ranged between Rs. 500/- to Rs. 1000/-.

Source of information for installation of smokeless chullah brought to light the role played by the Gramsevika in 55 percent of
households in Trichy district. The availability of smokeless chullah free of cost influenced its installation.

Some of the suggestion for improvement of smokeless chullah by the users in Coimbatore district included placement of chullah at a raised level and increase in size of fuel feeding mouth (30 percent) increased in diameter of pot seat (25 percent), increase in distance between first and second pot seat (20 percent) and increase in size of as outlet (10 percent).

The assessment made indicated that on an average the time consumed in cooking the selected preparations rice and Dal was 57 minutes using the traditional practice and 34 minutes, after adopting the improved practice arriving at a 20 percent time.

A training programme of two days duration was found absolutely essential for the beneficiaries prior to the installation of smokeless chullah. Thus smokeless chullah apparently a simple technology require the selection of an efficient model of smokeless chullah. The installation of the same in the rural households enable the homemakers to conserve her resource time, money, energy and fuel.

Therefore it is felt that an improved, well design, fuel efficient, low cost smokeless chullah will prove to be an indirect but effective method to overcome the fuel energy crises and to reduce the drudgery of rural women.

Rajgopal, L.S., Geetha, T. and Manoramani, R. (1992) in their study 74 percent household used the smokeless chullah.

Kalra, R.K., Singh, R. and Anjana (1993) in an attempt to understand attitude of rural women towards smokeless chullah reported that more than 50 percent of the respondents (58.67 percent) felt that smokeless chullah are easy to use easy to maintain and time
saving. A sizeable proportion of the respondents (21 percent, 34 percent and 29.67 percent) were undecided where as rest of the 20.33 percent, disagreed that this chullah was easy to use, easy to maintain and time saving respectively.

Regarding fuel saving quality of the chullah, a majority of the respondents (45 percent) were disagreed indicating that smokeless chullah did not save fuel. About one third of the respondents (33.67 percent) were undecided about the consumption of the fuel and only (21.33 percent) of the respondents agreed that Dhauladhar chulha, saved fuel.

A large majority of the respondents (93.67 percent) had favourable attitude that Dhauladhar chullah being smokeless was good for health. It might be due to the fact that smokeless chulha protected the ladies from the eye and lung diseases, caused by smokes.

Education, social participation, extension contact and exposure to mass media were found to be positively and significantly correlated with attitude which meant that literate respondents with exposure to mass media and greater extension contacts possess highly favourable attitude. Family size was found to be negatively and significantly related with attitude.

It is suggested that educational programmes need to be intensified and stress should be given on more intensive skill oriented training for rural women of the areas in the housing construction, use, management and maintenance of this chulha. There is a great need to identify the problems of this chulha in the construction, use and maintenance and an intensive training should be imparted to the rural women accordingly.
2.5 Housing in India – problems and perspectives

This section provides information relating to housing in India as a whole besides problems and perspectives for the use of reader.

According to Ramaiah, N. C. (1984) “Housings in India – problems and perspectives” his article in Modern trends in Housing in Developing Countries by Primlani Published by Oxford and I B H Co. New Delhi. He has stated that after a careful analysis of the problem, the Sectional Policy Paper of the World Bank suggest that the cost of construction can be pruned only by lowering the existing standard for low income housing accepting lower quality finishes and by making use of locally available materials in an imaginative and scientific manner.

Wiesinger Rita (1984) in her observations so far as they relates to housing the rural poor observed that, in 1950 more than 55 percent of the world’s population lived in third world villages, it is likely that 46 percent will still be doing so in the year 2000. A survey conducted by the Institute of Development Studies, Mysore, India revealed that in many Indian villages nearly the half existing houses are in need of urgent repairs. The bulk of the rural population comprising of such people as peasants, labours and craftsmen, live under very appalling conditions. About 750 millions of them, one fifth of humanity, live under leaky, make – shift, wormy roofs, huddled on small lots at the mercy of village chiefs and landlord. They suffer from non-availability of elementary services such as latrines, safe water supply, roads and transport. As many as seven out of ten houses in the rural areas of developing countries are currently so unsuitable for human habitation.
as to require replacement or major alterations. Still government tends to neglect rural housing mainly because of an urban policy bias.

Hirway, I. (1987) in her article "Housing for the Rural poor" has very systematically and comprehensively depicted the picture of housing for the rural poor on the basis of critical observations and analysis of the various government housing programmes for the rural housing problems of the rural poor and on the basis of evaluation studies of Government programme has proposed the certain recommendations which have been briefly discussed below.

1) The first and foremost need at present is to conduct an all India Housing Survey
   a) Assess the present housing condition in rural areas (i.e. the technology used, materials used, the investment made by the various sections including poor etc.) and the rate and pattern of ongoing housing activity in the private sector and
   b) Study the nature and extent of the housing needs of rural people, especially of the weaker section. Such a survey could be supplemented by a few in depth local studies which would throw more light on various related issues such as perception of the poor regarding housing, their willingness and capacity to pay for housing, the settlement pattern of the poor and the need for minimum infrastructure etc.

2) if housing programme have to be valid to local surrounding, it is necessary to adopt a decentralized approach in designing and implementing the programme. To start with, it is necessary to strengthen the technological components of the programmes at the regional level by preparing an inventory of local technologies available resources.
3) We have seen that one of the weak points of present housing policy is that it treats housing as an independent programme. It seems to us that it is necessarily linked it up with other rural development programme meaningfully to enable the poor to participate in it.

4) The rural poor do not consider housing as priority item because they cannot afford to spend on housing at this stage. An important implication of this is that special efforts will have to be made to enable the poor to afford a house. This calls for a multi pronged approach. First of all, the cost of housing will have to be made low, and using suitable technology with local materials and skills as we have seen above, can do this. Secondly, housing programme will have to be linked up with income generation programme to enable the poor to repay housing loans. Though, huge subsidies may help the poor in the bearing the burden of a house, it is not a healthy development in the long run. Instead, a cheap loan with easy installments will be far better.

5) Considering the frequency of floods and cyclones and destruction of houses due to these calamities in certain areas it is necessary to design special houses for flood / cyclones – prone areas.

According to Hiraskar, G. K. (1993) the housing problem revolves around three important factors such as poverty, transportation and low investment. All these must be accounted for, in a successful urban strategy. The government has to purchase lands and provide cheap building materials and financial assistance to the builders. Recently many building organizations experimented with the manufacture of the building materials using local materials and modern technology. The National Building Organization (NBO) established in 1954 has helped in manufacturing cheap materials using
new technique for building low cost housing. Similarly Central Building Research Institute (CBRI), Roorkee and Structural Engineering Research Centre (SERC), Chennai. Have developed building materials manufacturing techniques and standardization of production for mass housing project. A few state have undertaken large Housing Schemes using local skills and local materials. Laurie Baker, an England born architect who lived in India for the major period of its professional career has evolved techniques and designs, which are not only economical but also extremely felicitous and pleasant, live in. But these efforts are found to be insufficient economics solutions for mass housing. The Government resources are found to be inadequate and the shortage of housing is still mounting.

Florentino, E. (2001) according to our government statistics, our country’s need for new housing units from 1993 to 1998 was estimated to have being 3.72 millions. Now instead of improving, our housing problem has worsened, so that for this year alone our shortages of decent shelter stand at more than 3.0 million units. This backlog in housing is accompanied by a high rate of population growth, low average family income, inadequate financing and lack of facilities for research and operation. On the positive side, however the country is far from natural resources, manpower and economic outlook is optimistic.

2.6 Studies conducted

The knowledge of research work that has already been done in the field provides further orientation to the problems selected for the study and at the same time eliminates the possibility unnecessary duplication of efforts. In addition, valuable information
on research techniques may be gained from reports of research (Komidar, 1952). It is obvious that review of all the relevant researches can not be presented and hence a few relevant representative research studies are given here.

Dubey (1960) found that the villages on the whole were in sanitary with absence of proper drains and soakage pits from which water invariably ran in to the village lanes making them muddy and dirty.

Ghosh (1960) reported that houses were built quite below the road level and bathing and washing activities took place near ponds. The houses were built without any consideration of the orientation of kitchen, cattle sheds or grains stores were crowded and there were no latrines.

Potnis and Kelkar (1960) reported that the investigation of national Sample Survey in Madhya Pradesh showed that in rural areas about 86 percent houses had mud plinths, 83 percent had mud wall and 85 percent had earthen floor with two rooms or less. Only 7 5 of houses had plinths and walls in bricks, lime stones, cement and roof of cast iron sheets and tiles.

Tarachandrika (1965) conducted the survey of 100 houses in poor villages of Coimbatore district. The investigator then constructed a house for rural family using low cost materials. Sanitation condition and other conveniences like water facilities, light, ventilation, etc. were found satisfactory.

Vashenya and Mathur (1968) listed the major defects in existing village houses. The houses were dark, damp, ill ventilated and in sanitary. Windows were conspicuous by their absence. The floor level
sometimes were found below the adjoining ground level. The waste water from the kitchen was allowed to accumulate near the house.

Shrivatava and Prasad (1969) studied the village in Lucknow, 248 houses (93.6 percent) the disposal of waste water was through a kutch drain to cesspool or a ditch just closed to the walls of the houses.

The existing pattern of housing in village Madangarhi was examined by Mishra (1970). It revealed that major component of village houses were an enclosure at the entrance, a court yard, a varendrah or a well ventilated room and dark dingy room. About 63.55 percent houses had no specific cooking areas. Latrines and drainage were conspicuous by their absence.

Dhar, et al (1976) Ina detailed survey of the environmental and structural conditions reported that the houses had no kitchen, had an unsatisfactory water supply such as open well, no latrines, refuse and animal wastes dumped in hips and waste water collected in to cesspools.

Census of India (1981) revealed that in urban areas 65.2 percent houses are pucca in nature where as 76.9 percent houses in rural areas either “Semi pucca” or “Kutch”. Regarding the housing amenities, the report further revealed that 61.62 percent villages get drinking water from well. Only 10.29 percent avail tap water. The remaining get it from tube wells, rivers or lakes. 91.67 percent households used kerosene for lighting. Only 6.55 percent houses had electric lights. 42.40 percent rural households were without any kind of latrines (NBO, 1987).

Dhar (1981) conducted a study of the existing housing condition and house plans and related to the selected households activities of

National Sample Survey (1974-1982) had produced a report on housing condition in Maharashtra state. The aspects covered for the survey were the type of dwelling size, structure and types of materials used, lighting, drinking water and sanitary facilities available etc. The findings revealed that a proportion of households living in independent houses was quite high in rural areas than in urban areas. Average area per rented dwelling in rural areas was 24.11 sq. mts. was higher than in urban areas. Majority of households in urban areas were residing in pucca houses, where as in rural areas semi pucca houses were found. Country tiles corrugated iron sheets, asbestos sheets, cement concrete roof, roof of GI sheets or tiles, roof of mud, straw, grass etc. was type of materials used for houses both in rural and urban areas. Majority of households both in urban and rural areas were living in dwellings having only one living room with NBO specifications. Tap water was the main source of water to urban areas where as well was main source of water in rural areas.

WHO Experts Committee on Environmental Sanitation, (1950), WHO Experts Committee on National Environmental Health Programme (1970) and WHO reports on Human Environment (1972) found that in many village communities, all the elements of sanitation were missing. Vast population lived in rudimentary and temporary shelters. Sehgal (1960), Pinoe and Subramanyam (1975), Who experts (1980) and Ballance and Gunn (1984) reported that in rural sector nearly two third of the population of developing countries resides, and overwhelming 78 percent had no access to reasonably safe water and
almost equal proportion (85 percent) had no adequate excreta disposal facilities.

Hirwey, I. (1987) has taken an account of some empirical studies conducted in various in India and observed that
1) The housing programme in general is badly neglected by the central as well as state government.
2) People’s participation is very poor in the programme.
3) House sites given to the poor are many times far off from the village are not connected by an approach road, the area is low lying and get flooded in the monsoon and also the minimum infrastructure is not provided with the results that the poor do not always use them.
4) Most of the rural houses constructed by the government assistance are pucca houses using urban based materials and skills and therefore they do not have a favourable impact on the rural economy and
5) New housing technology, construction materials, financial helps etc. are not always forthcoming to the poor.
6) These houses don’t give protection against wind, rains and cold.
7) They don’t have proper arrangements for light and fresh air.
8) They don’t have separate arrangements for keeping animals.
9) There are no arrangements for basic sanitation and drinking water.
10) Surroundings of the houses lack the most fundamentals requirements for hygiene.
11) The houses are infested with insect, rodents etc. that are dangerous to health.
12) The houses have high recurring costs (maintenance) which poor cannot afford and
13) The houses are incapable giving protection against natural calamities like flood, cyclones etc.
Ramchandran, A. (1992) in his article “Appraisal of Indira Awaas Yojana experiences from Kerals stated that local requirement and standard design can be seen in the North Eastern part of the state (mostly tribal areas) where the rainfall and wind velocities are very high. The houses constructed in this area suffers from the following defects.

a. Inadequate projection of overhands result in the exposure of walls to rainfall and withering.

b. High wall height is again not suitable for the local climatic conditions.

c. Open verandah in which no ceiling is provided. This is not conducive from the security and climatic point of view.

d. Though the scheme prescribes group houses wherever possible, the implementation of them is very much deplorable. Infact no planned layouts were prepared to construct housing colonies.

Chauhan, S.P. (1997) in which it is stated that, according to evaluation done by planning commission 83 percent of the respondents of households under IAY expressed satisfaction with the houses given to them.

Programme Evaluation Organization of the Planning Commission (1992-93) carried out a study of IAY. It observed that 86.4 percent of the houses constructed under the IAY were occupied and lived in. About 84 percent of the households expressed satisfaction / partial satisfaction with the houses given to them. The
main reasons for their satisfaction with the IAY houses were able to satisfy socio-cultural needs suits life style, good construction, etc.

Though much relevant literature was scanned almost all the studies carried out on the topic housing had similar nature like the studies quoted earlier. Probably, hardly there is any study which evaluated the effect of area of residence, education of family and socio-economic status on the housing conditions. There are a few studies on housing which deal mainly with the technical aspects only. In view of these facts the present study might serve as a means of bridging the research gap.