Builders in the Private Sector: a Case Study of Bangalore, India

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(ABSTRACT)

In the past two decades, studies of the third world have typically distinguished not only public from private sector housing, but also formal or legal housing from popular or informal housing. It is often assumed that formal housing differs from informal housing not only in its legal status but also in its construction methods, standards and materials. The distinction is then used as a basis for policy. However, very little research has been conducted on housing supply and residential construction in the third world to test this assertion.

This paper argues that this distinction between the private formal and the private informal sectors is arbitrary and unsuitable for the analysis of housing supply. In reality it is only the absence or presence of the building permit that classifies housing as formal and informal, and not the manner in which the construction is organized. Firms in both the sectors use the same production factors. Inputs such as labor, building materials and in some cases finance for the formal houses come from the informal sector and vice versa.

To test this hypothesis, we have conducted an empirical study of the housing supply in one Indian city, Bangalore. The study is based on interviews with personnel associated with different aspects of the construction industry, and on data obtained from official city development authorities. Interviews with building contractors, construction workers, and materials suppliers corroborated the statement that the private formal and the private informal sectors are more intricately interrelated than suggested by conventional distinction. We found that:

- Houses with a building permit are often built by informal contractors using materials and labor from informal sources.
• The laborers are employed by contractors in both the private formal and the private informal sector to perform similar tasks at similar wages.

• A given building material supplier very often caters to the formal as well as the informal markets.

• In many instances we find informal housing units which have been added on top of formal units.

Policy-making has hitherto been based on a distinction between formal and informal units. Although the informal sector plays the key role in housing supply in Bangalore, the government has not addressed the needs of this sector while formulating housing policies. For example, since “informal” units lack building permits, they are unable to get formal financing or access to subsidized building materials. Water and sewage connections are restricted to “formal units”, yet electricity is provided to all units that pay a deposit. Our findings put such arbitrary distinctions into question as a guide to policy.
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1.0 Introduction

Most new housing in India is supplied by the private sector which is made up of a complex network of individuals and firms whose products range from the most rudimentary hut to luxurious bungalows. Participants include builders, individual construction workers, and firms that provide services and materials for construction. The builders, ranging in size from one employee to several hundred, provide their own services in designing as well as building and supervising construction. Of late, much attention has been given to the private sector; the public sector provides few new dwelling units, even though it controls most of the financial resources and land resources. The exact nature of the private housing supply sector, both its "formal" and "informal" components, has not been studied or understood. Moreover, the precise mechanism by which the private sector operates and the nature of its links with the public sector are not well understood. We found no studies of the small builders who operate at the interface between "formal" and "informal" sectors in India and supply much of the private sector's output. Nor were we able to find many studies of the suppliers of private housing in other developing countries.
1.1 The Hypothesis

Most official data on housing in the third world focus on the housing supplied by the formal sector, that is, the public housing, and the private housing built in accordance with set standards or codes. In the past 20 years growing attention has been paid to the informal sector supply - which includes dwellings built without building permits, or land not zoned for housing, or not in conformity with the subdivision regulations.

Annez and Wheaton argue that construction data grossly underestimate the creation of new units in developing countries. The data available on the consumption of housing services and its costs, and is based only to those units that are formally recorded. In reality there is a large segment of informal housing, and without this information, policy makers are likely to underestimate the creation of units, or make a poor estimation on the overall consumption level of housing services (Annez, Wheaton, 1984).

The hypothesis of this paper is that these arbitrary categories are not a useful way to analyze the housing supply. In reality, it is only the presence or absence of a building permit which classifies housing as formal or informal, and not the manner in which its construction is accomplished. Contrary to conventional wisdom that the two sectors (formal and informal) are extremely separate and independent, they are continuously interacting. Firms in both the sectors use the same factors of production. Inputs such as labor and building materials for formal housing units come from the informal sector and vice versa.

The original notion that all informal homes are built through self help was among the first to be abandoned. We now believe that most “informal” houses are built by hired contractors or by households which hire laborers directly and supervise their work (Keare, Jimenez, 1983). Furthermore, it is very difficult to build a generalized picture of the informal sector because of its internal variation. It is not correct to associate the informal sector exclusively with the poor. Many middle income groups resort to informal housing. Informal housing is not always built of poor quality or recycled building materials. Most of these houses are built from better quality materials.
purchased from commercial suppliers. In fact, many elements which cannot be made locally (paint, cement, steel, etc.), are used by the informal sector.

There is no contradiction between sophisticated mass production techniques and the user builder market in the developing countries. In the informal sector one finds both high quality buildings with adequate levels of infrastructure and public services, and a large area of unplanned, unserviced, marginal settlements of low quality housing, micro commerce, and cottage industries as well. Both, however, were built by the same workers who are employed by the construction companies (public and private) to build projects designed and administered by them.

This paper reports on an empirical study of housing supply in one Indian city, Bangalore. Interviews were carried out with contractors, building material suppliers, and housing officials in the city. These interviews were designed to help us understand the behavior and the structure of the construction industry as a supplier of housing in both the formal and the informal markets. This paper will elaborate on the puzzle described above, and examine the existing structure of the construction industry in India and its role as a housing supplier. It will identify the various agencies involved, their mode of action, and discuss the different networks in operation. It will deal with all the operators in detail and describe the housing supply process under the following categories:

Land

Physical infrastructure

Building materials

Labor

Construction

Finance

Policies

Marketing

1.0 Introduction
1.2 The Study Area

The city of Bangalore has a population of 2.9 million (1981 census). Of late, there has been a rapid increase in population (a growth from 1.2 million in 1961 to 2.9 million in 1981). The consequent influx of population into the city has resulted in proliferation of slums and unauthorized construction within and immediately outside the built up areas. At present, Bangalore is the most rapidly growing city in India.

In spite of substantial public investment in housing, the formal sector program in Bangalore has provided very little shelter to the people, and to the urban poor in particular. The city lacks a comprehensive land use plan and housing guidelines appropriate for the poor and the low income group. As a result, there is a great deal of uncontrolled building activity. The multiplicity of housing agencies involved and the nature of the construction industry as a housing supplier is similar to the ones experienced in all major cities in India, and to some extent the same phenomenon is experienced in many cities of the third world. Hence, although the paper concentrates on the building industry in Bangalore, our findings may be equally relevant for other cities in India and in other third world countries.

The outline of the paper is as follows. The next chapter reviews existing literature on housing supply in the developing countries. As mentioned earlier, we found little written on the subject of the suppliers of formal and informal housing in the third world. Chapter 3 summarizes the interviews we conducted with the contractors, building material suppliers, and building officials in Bangalore. These interviews confirm the paper's hypothesis by explaining at length how the actors operate in providing housing for the various income groups. Chapter 4 describes the structure and behavior of the private sector, particularly its formal and informal components. Based on the empirical study, this chapter describes at length how the private sector meets the housing demand by drawing inputs from both the formal as well as the informal sectors. Although the informal sector plays the key role in providing housing in Bangalore, the government has not addressed the needs of this sector in formulating its housing policies. In Chapter 5, we examine the appropriateness of
the government's current distinction between the "formal" and "informal" in formulating housing policies.
2.0 Literature Review

2.1 The Informal Sector

Despite the very widespread use of the term “informal sector”, the concept is relatively recent and has been widely accepted only since the mid 1970s. The idea of formal-informal dualism was taken up in the late 1960s by researchers who could see that modernization or a similar path of development strategies was not benefiting a large number of urban poor.¹ Most writers emphasized the self-contained nature of the informal sector, the way in which it used small scale, even recycled materials to produce often illegally small items, and then sold cheaply to the urban poor themselves. Not only did the informal sector encompass manufacturing, but also all other aspects of life for the poor, including services such as preparing and selling cooked food, education, traditional health care, and perhaps the most obvious, the construction of squatter housing. The formal/informal dualism was reified in the ILO’s World Employment Program in Kenya, and has been the central organizing concept in many subsequent publications (Bromley 1978, Sanyal 1988, Drakakis-Smith

¹ Hart’s (1973) influential paper on urban employment in Ghana, introduced the two sector terminology dividing the economy into formal and informal sectors and emphasized the significance of self-employment and small enterprises, and the degree of statistical under-recording in the informal sector.
In the crudest form, the distinction between the formal and the informal sector as presented in the Kenya Report and subsequently used by several authors are indicated in Table 1.

<table>
<thead>
<tr>
<th>Informal Sector</th>
<th>Formal sector</th>
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<tr>
<td>- Ease of entry</td>
<td>- Difficult entry</td>
</tr>
<tr>
<td>- Indigenous inputs predominate</td>
<td>- Overseas input</td>
</tr>
<tr>
<td>- Family property predominates</td>
<td>- Corporate property</td>
</tr>
<tr>
<td>- Small scale activities</td>
<td>- Large scale activities</td>
</tr>
<tr>
<td>- Labor intensive</td>
<td>- Capital Intensive</td>
</tr>
<tr>
<td>- Skills from outside the school</td>
<td>- Impacted technology and</td>
</tr>
<tr>
<td>system</td>
<td>formally acquired skills</td>
</tr>
<tr>
<td>- Unregulated/competitive market</td>
<td>- Protected markets</td>
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Researchers subsequently began to argue that the informal market was not self-contained after all, but was linked with the rest of the economy in a highly exploitative way (Drakkakis-Smith, 1987).\(^2\) In the late 70s and early 80s, many studies of the informal sector concentrated on revealing its utility not only to the poor, which was already well known, but also to individuals and enterprises in the formal sector. The classification made in Table 1 is rather clumsy and has no value as an analytical tool when one is examining the nature and behavior of the construction industry.

### 2.2 The Construction Industry Dichotomy

The construction industry in most third world countries covers many activities, from sophisticated architectural designs and engineering surveys to the most rudimentary hut. In technology

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\(^2\) According to Drakkakis-Smith (1987), "the formal and informal sectors are rather crude buckets which had drawn valuable attention to the positive values and contribution of the urban poor but which has failed to place them within the perspective of exploitation by groups in the rest of the economy."
it exhibits all kinds, from the medieval to the most modern (Ganesan, 1984). It includes production, supply and transportation of all kinds of building materials. It includes construction activity undertaken by individuals themselves, to those executed on contract by organized sectors, and undertaken by government owned agencies and firms (Stretton, 1979). It is mobile, seasonal and more labor intensive than other industries.

Bertrand Renaud has proposed that the residential sector in most developing countries has a three-tier market structure (Renaud, 1984):

- A high to middle income legal "private sector."
- A heavily subsidized mostly middle income public sector.
- A large rapidly growing low-income informal private sector. It is far from disorganized, and forms residential zones that are developed at high density without any infrastructure or community facilities (Turner, 1977).

This paper questions the distinction between the legal "private" and the "informal private sector."

The most rigorous attempt to compare the formal and informal sectors is Sethuraman’s study of the informal sector in Ghana (Sethuraman, 1985). He argues that informal housing economizes on the consumption of building materials, by using materials which are freely available (use of less manufactured materials). Consequently, it costs a sixth of what is necessary for public formal

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3 Ganesan (1984) mentions that the building material sector also shares the industrial dichotomy which is a unique feature in all developing countries. Modern building material factories, which are large scale, capital intensive, and technically sophisticated, coexist with numerous small units producing traditional materials.

4 Stretton (1979) argues that the construction industry in LDCs with the building industry covers a wide range from large firms to small independent foremen. The large firm benefits from close contacts with the government. The size and structure of the firms and equipment intensive techniques of construction are similar to other parts of the formal sector. The independent foreman, on the other hand, is a part of a small enterprise operating in a strongly competitive market, without any government assistance and using controversial techniques of construction which require little or no equipment.

5 Turner (1977) argues that when the construction of shelter is left to the household, the poor households will increase their consumption to shelter services themselves, through their own savings and complementary investment. All this would apparently meet the needs of the low income groups, and operate outside the control of the authorities.
housing for the same floor space. Additionally, the informal housing requires less labor. Sethuraman has attempted to simplify the evidence drawn from cases in different countries, and comes up with a crude estimate of the employment that is likely to result from investment in low-income housing. Furthermore, Sethuraman argues that roughly one third of the construction expenditure can be attributed to the labor directly utilized on the site of construction if the output is formal housing, and perhaps a fifth of the total construction expenditure may accrue to labor directly engaged on the site, if the output is informal housing.

The size and output of the informal sector in most developing countries is substantial (Moavenzadeh, 1987). It provides not only shelter for the poor, but also commercial structures and retail outlets. The sector has strong backward linkages to both the formal and informal economies, creating a demand for carriers of raw input. The production of building materials is well suited to small-scale techniques and local resources, and is therefore able to bring jobs and commodities to rural and urban areas as well.

Moavenzadeh provides an overview of the current context of development as it affects domestic construction, and identifies the structure of the construction industry as the supplier of shelter and infrastructure in LDCs. He argues, “If the definition of the informal construction industry is murky, the outlines of its sub-sector, the informal building materials industry are even fuzzier for it is rarely treated apart from its parent sector.” He categorizes the small scale building materials industry as having small number of employees, small volume of output, low capital investment, and a greater reliance on locally available raw materials. Ganesan examines the construction industry in Sri Lanka and asserts that the dominant role of small firms in the building materials production sector is not an accident, but is dictated by the specific features of both the construction process, and the construction market, which are (Ganesan, 1983):

- The demand for construction is dispersed.

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6 Studies done in Ghana by Sethuraman (1985) revealed that informal housing construction took 2.9 man months, as compared to 17 man months in the formal sector.
• The market is regionalized on account of the bulky low value to weight ratio associated with high transport cost.

• There is flexibility in the scale of production.

• Flexibility in demand also arises from technological alternatives.

• Climatic factors promote the use of certain local materials in certain locations.

• Lack of standardization of common materials in use in developing countries.

Informal producers are however in a weaker bargaining position than the large construction firms, because these firms are less visible to the government and they receive no subsidies (Moavenzadeh, 1987). The problems small building manufacturers often face are:

• Lack of finance.

• Low labor productivity and lack of skilled labor.\(^7\)

• Demand arising from fluctuations in the national construction output.

• Capacity under-utilization.

• Inadequate technical assistance.\(^8\)

The labor intensive technique employed by these small units cannot be regarded as inefficient, particularly if a premium is attached to a foreign exchange value. The quality of a number of materials from middle and small scale sectors is not inferior to those of the larger sectors, since the production is simple and both sectors use the same raw materials. The small scale and traditional sectors use much less machinery and tools per worker, but in many instances, the capital productivity is higher in small scale sectors. Low capital output ratio obtained for some of the products

\(^7\) Stretton (1979), argues that employment in the building industry is highly unstable, because of the annual fluctuation in the level of output. The seasonal nature of building activities is due to the climatic factors and the variations in the size of the workforce. Unlike many groups included in the informal sector, building industry laborers rely on the urban formal sector for their employment. In a survey conducted on the stability of employment in the informal sector, Stretton pointed out that a slightly higher proportion of skilled laborers and those employed in construction firms had a more stable employment, compared to the unskilled laborers.

\(^8\) According to Sethuraman (1985), the informal sector, which is engaged in the construction industry, lacks formal sources of training and credit. Although it shows an acumen for technical adaptation, and hence the potential for competing with the formal sector successfully, it is often wanting in technical know-how.
from smaller enterprises is often due to the fact that raw materials are locally produced, and the products are marketed cheaply.

The public sector, however, has proved to be inefficient in providing housing to the poor, because of its monopolistic behavior, combined with the concomitant waste of resources, high prices, and other market distortions. Although the need for housing in cities of the developing world are tremendous, the only hope for meeting that need is through the efforts of many small scale firms, some in the formal sector, and others in the informal sector (Moavenzadeh 1987).

2.3 Housing in India

Most housing in India is built by the private sector, which includes individual, group and other informal building activity. The shelter related sectors continue to rate a lower priority for development investment by the government. The growth in urban housing during the past decades has fallen immensely short of the growth in the urban population. Official government statistics estimate a rapid increase in the housing shortage, from 14.5 million units in 1971 to 21.3 million in 1983 (Robben, Stuijvenberg, 1986). This housing shortage data is compiled based on the following criteria:

- The assumption that each unit would be occupied by an individual household.
- Permanence of structure based on the type of roofing and walling material.

The percentage of total investment in housing in the economy has fallen from 34% in the first five year plan, to about 10% in the seventh five year plan. Income from housing as a percentage of the gross domestic product has decreased from 3.72 in 1970-71 to 3.22 in 1984-85.9

9 "Housing statistics at a glance", National Building Organization, UN Regional Housing Center, ESCAP, New Delhi, 1987.
In 1983, a Task Force on housing and urban development was set up by the Planning Commission of India to analyze the current housing stock situation in India. The Task Force reviewed the history of the social housing schemes introduced from the first five year plan onwards, the investments made, the pattern of housing envisaged, and the impact of these schemes on the urban poor, and came up with the following conclusions. Organized private "formal" housing construction is a small proportion of new construction, since the large part of the housing is being provided by the private households themselves. The conclusion reached by the Task Force was that although the housing schemes have played an important role as catalysts in the housing sector initially, they have mostly benefited the middle and higher income groups and, in terms of the total requirement have made only a marginal contribution. The bulk of housing for all income groups, particularly the poor, is supplied by private initiative in a variety of ways. This is so even in cities where the public agencies have near monopolistic control over land and a formidable setup for construction. Hence budgetary allocations would go a much longer way if utilized almost exclusively for infrastructure and land development with heavy emphasis on delivering cheap sites and services to the poor.

A survey on the construction industry in Asia conducted by the Asian Productivity Organization, found that all developing countries had far more small contractors than large well established firms.\(^{10}\) The proportion of well organized firms range from 3 - 10% of the total number of contractors. The survey revealed that small domestic construction companies are mostly owned by less educated people, who gain the construction experience in practical construction work, normally stepping up from trades as those of masons, or those of a carpenter, to become small scale contractors. Most countries including India, lack a licensing system to regulate entry to construction industry, and therefore it is difficult to identify the small contractors. Similarly, the registration of contractors does not entail any minimum training or qualifications, but is based only on the their financial status.

Gupta argues that the major supply constraints faced by the private sector are (Gupta, 1985):

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\(^{10}\) In collaboration with the Korea Productivity Centre, at Seoul, 1982. This survey was conducted to assess the status of the construction industry in south-east Asia.
The supply of urban land. The poor do not have access to the land since it is not easy to devise equitable procedures for the allocation of land such that the poor have improved access.

The availability of building materials. Since supply of most of the building materials is relatively inelastic in the short run, any excess demand tends to push up the prices. Building materials and components contribute between 45% to 60% of the total cost of the output.

Many builders find the by-laws too expensive, and therefore it is not surprising that they indulge in large scale violation. It is not only the various specifications that must be followed under the existing by-laws but also the lengthy procedures that are involved, as well as the restrictive nature of the by-laws. These have resulted in widespread building code violation and in unauthorized construction.\(^1\) Most households are thus able to construct houses at much lower cost than any system of public sector construction would provide. These dwellings are not designed to meet the standards prescribed in the local building by-laws. The unauthorized or illegal construction can thus cost one-fourth or one-fifth of comparable construction in the public sector.

From the literature review it seems evident that the bulk of housing in most developing countries is undertaken by the small scale industries both in the formal as well as informal sectors. While there has been much information and data available on the housing supply by the Indian public sector, there is very little information available on the private sector in India, especially on the small scale builders who operate at the interface between the formal and the informal sectors and meet the demands of the former, by drawing most of the labor and some of the resources from the latter. Moreover, the government's attempt to formulate a single policy to be applied to the informal sector has not been feasible because of the complexity of the informal sector. However, at a more specific level, there has been very little information or research on the mechanics of the production agents themselves, to determine the ways in which they operate and what constraints

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\(^1\) Moavenzadeh (1987), argues that as the standards become more reasonable, small scale firms will be in a better position to satisfy them so as to compete in the housing market. The informal sector by definition would not be directly affected by this change in government regulations. But if the standards were made more flexible, the informal firm might find it easier to meet the requirements, so as to enter the formal market.
they face. This paper investigates the construction of housing by the small scale builders and contractors.
3.0 Interviews

For this study, ten interviews were conducted with personnel involved in the supply of housing and infrastructure, or involved in research or policy-making with regard to such topics. The interviews were geographically dispersed and not concentrated to one particular area in Bangalore. The questionnaire used as a guide for the interviews is furnished in Appendix I. This questionnaire was based on the one used by Abt Associates, Dames and Moore, and the Arab Republic of Egypt, General Organization for Housing Planning and Building Research in their study of informal housing in Egypt (Abt Associates, 1982). These interviews were designed to collect information on the supply process for formal as well as informal housing and infrastructure, and covering the following areas:

- legal and illegal subdivision of land
- physical infrastructure
- building materials
- labor
- construction
- social and other services
- finance
- marketing
• policy issues

All of the contractors who were interviewed were contacted through people who worked for them. One of the building material suppliers was contacted through one of his customers. The objective of these interviews was to develop an understanding of the mechanics of housing production and to find out how they operate in the formal as well as the informal sector. The building officials interviewed contributed valuable information on the causes of informal housing, its evolution over the years, and the action taken by the Government. This chapter summarizes six of the ten interviews conducted for the study. Three interviews with building officials, and one interview with a contractor are not included in this chapter since those interviews were similar to the ones given by their colleagues.

3.1 Interview # 1

Mr. Albert, Building Contractor

He started his business five years back on a very small scale. His initial investment of Rs. 40 thousand was from his personal savings. Last year he had a turnover of almost Rs. 100 thousand. Mr. Albert felt that there are no specific skills required to become a contractor. Any one, he says, can start the practice if one has the money to set up the business. He has been living in Murugeshipalya for the past five years. He operates his business from his residence. He has registered himself with the PWD only because he undertakes some government work. Based on his experience, he claims that around 75% of the contractors are not registered.

His area of operation is within a 3-5 kms. radius from his place of residence. Currently, most of his projects are government projects, but around 40% of his work is still private residential work. He deals with all aspects of construction, and most of his customers are through friends and acquaintances. Most of the houses he constructs are on 30’x40’ sites or 60’x40’ sites. The construction of the house varies from Rs. 150 thousand to 400 thousand depending on the size of the house and the type of finishing used. The major problem he faced between 1981 to 1985 was the short supply of cement and steel. With the recent increase in the production of steel and cement,
obtaining materials is no more a problem. He does not undertake any informal construction and he expects to stay in the business for another 5-6 years.

The houses he constructs are generally two bedroom houses (one bedroom can be as small as 8’x8’). Once the design is approved by the owner, it is submitted to the BDA for a building permit. According to him, height and by-laws are mostly violated (around 90% of the time in small sized plots). Most of the designing work is done by him, and is drafted by anyone who has the drafting abilities (one sometimes find people with these skills sitting on the side-walk with all the equipment they need to draft the plan as per BDA regulations). In some cases, the designing work is a joint venture by the owner and the contractor. Architects are never hired for small houses because they charge a lot for their services. Moreover, Mr. Albert feels that the architect’s recommendations are often expensive.

He estimates the cost of construction based on the total area (square feet). The current rates would be Rs 18,000 to Rs. 20,000 per 100 sft., which includes the utilities but does not include the cost of land. Costs have gone up by 30% in the last decade. A small house would cost around Rs. 150 thousand these days. The choice of building material is left entirely to the owner, and sometimes he informs them of all the choices or types of materials they can use. He estimates a timeframe of 5-7 months to build a house. The current trend is for the owners to opt for labor contracts since it is not too hard to obtain materials in the market. He felt that most houses are poorly maintained because of the owner’s financial constraints. Sometimes the owner has to occupy the house before the entire finishing of the house has been completed due to lack of finances. The owners feel the financial constraint when the house has been constructed for self occupancy, since the house does not generate any income (as compared to the income generated when the house is being rented out). Another reason for the owners financial problems is that the local taxes in Karnataka State are very high.

He obtains stone, brick and tiles from his neighborhood, whereas, steel and cement are obtained from the city market. A rough estimate of what he pays for some of the materials is given below:
1) 1 ton of steel  Rs. 9,800
2) 1 stone block  Rs. 1.25
3) 1 brick  Re. 1.00
4) 1 bag of cement  Rs. 75.00
5) 1 Cft. of teakwood  Rs. 500.00

He estimates a 10% to 15% of profit per year. Most of his profits are in brickwork and plastering. He does not stock any material, and is not guarded against escalation for small residential projects. He does not deal with only one supplier because he feels that the same supplier tends to delay the job since he gets the notion that he is indispensable.

He does not have any permanent labor. During a “peak construction period” he employs approximately 16 laborers in his payroll, and four of them are skilled masons. All of them live close by. He tries to use the same people in all his projects. But this depends on the degree and nature of construction. The labor rates are based on daily wages. He pays skilled laborers approximately Rs. 60-65 per day, and the unskilled laborers are paid Rs. 20-25 per day.

He has two supervisors to supervise the work. It is the responsibility of the owner to supply water for construction, and so the permit has to be obtained by the owner. Mr. Albert does not buy building materials on credit. For bigger jobs he gets loans from local money lenders (they charge an interest of 2% to 5% per month). He has never availed the services of any financial lending institutions or banks. He owns three houses which he has constructed himself. He lives in one of them (area 1000 sq.ft.), and has rented the other two (area approx 1300 sq.ft.). He does not extend credit to his customers and starts the construction only after obtaining an advance from the customers. He feels that the by-laws are too stringent for small sized houses. The contractor, he said, is not responsible for the house built without a permit, it is the owner’s responsibility. The main issue that he seems to be concerned about is the sales tax imposed on the building materials.

Age- 44 years, Married, Two children aged 10 and 6.
3.2 Interview # 2

Mr. Govind Raju, Dy. Director, Town planning, Bangalore City.

He said that the city of Bangalore has grown enormously in the past 25 years. It has grown from an area of 500 sq. kms in 1951 to 1279 sq. Kms in 1984. This area includes a corporation limit of 151 sq. kms. A master plan for the Bangalore city was prepared on December '84. This plan comprised of a developed area of 449 sq kms., and 883 sq kms for the green belt. The population of Bangalore is expected to reach 7 million in 2001 (1981 census: 2.9 million).

Bangalore was developed by Kempegowda in 1851. He did not envisage the city to extend beyond the four towers he had designed and set up in the four cardinal directions. Today, however, the city has grown beyond the four towers (in 1983, the city occupied a developed area of 220 sqkm). The current plan includes a total land-use of:

<table>
<thead>
<tr>
<th>Land-use</th>
<th>Hectares</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>5,777.65</td>
<td>25.48</td>
</tr>
<tr>
<td>Commercial</td>
<td>634.07</td>
<td>3.13</td>
</tr>
<tr>
<td>Industrial</td>
<td>1,956.61</td>
<td>9.65</td>
</tr>
<tr>
<td>Public &amp; Semi-Public</td>
<td>2,533.64</td>
<td>12.45</td>
</tr>
<tr>
<td>Parks &amp; Play-grounds</td>
<td>2,050.16</td>
<td>10.41</td>
</tr>
<tr>
<td>Transport</td>
<td>52,168.81</td>
<td>25.72</td>
</tr>
<tr>
<td>Unclassified</td>
<td>2,114.24</td>
<td>10.42</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20,281.18</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The city of Bangalore is divided into three zones:

- Intensively developed area
- Moderately developed area
- Sparsely developed area

3.0 Interviews
The current master plan proposes increasing the FAR at the periphery, and reducing the FAR at the center to avoid congestion. The BDA has started permitting the construction of high-rise buildings in certain industrial areas.

BDA came into existence in 1976, and was formed from the coalition of the City Improvement Trust Board (formed in 1945) and the Town Planning Office. The other agencies that deal with housing are:

- Karnataka Housing Board (KHB), which mainly caters to the two satellite towns of Yellehanka, and Kengeri.
- The Slum Clearance Board undertakes the rehabilitation and upgrading of slums.

BDA mainly deals with the land acquisition. All land procured for the development of sites is done through the Land Acquisition Act of 1984. The steps undertaken in the development of sites through the BDA include, notifying the public, designing a proposal, conducting a public hearing, finalizing the developed scheme and finally obtaining the sanction. The approved proposal is then turned to the Engineering department for the design and development of subdivisions.

The BDA lots are only allotted to people residing in Bangalore for more than ten years, on a lease-basis. The ownership remains with the BDA and after ten years it is handed over to the owner. The allottee is not permitted to sell the land for ten years and most construction has to be started within two years of the allotment. Private developers are supposed to approach the BDA and apply for a clearance and building permits. On completion, they are issued a certificate of completion. The current price of land is now Rs. 75-100 per sqyd if it is obtained through the BDA, and Rs 150-300 from the open market. The sites provided by the BDA are generally in this proportion:

- 50-60% for EWS and the LIG groups (subsidized).
- 20-25% for the MIG group.
- 5-10% allotted for the HIG.
Mr. Govind Raju however, felt that there were approximately two hundred to three hundred thousand units of unauthorized residential construction in and around Bangalore. They are not confined to a particular area, but are found in dispersed pockets in and around the city. The process by which unauthorized construction takes place are:

- When BDA contemplates acquiring agricultural land in a particular area, owners of large parcels of land around that area sub-divide the land and form smaller plots.
- Most small plot holders hire contractors who specialize in building the house within two to three days. The building materials used are generally mud, bricks, and asbestos cement or corrugated iron roofs. These contractors are often not visible, and generally operate on holidays and weekends, when no vigilant squad is working. The houses are very small, and consist of a room, a kitchen and a bathroom.
- No infrastructure is provided by the contractors. Wells are dug for water, and these houses have no toilet facilities or in some cases, the owners install pit-privies. Some houses have electricity supply, since the KEB operates independently, and provides electricity to anyone who pays the deposit. The roads constructed in these sub-divisions are narrow and in a bad condition. in some cases, it is the contractor who builds the houses, and in other cases, the owner builds the house himself.

The government has not yet formed any guidelines or procedural steps to regularize or keep a check on these kinds of building activities. Due to political pressure from the opposition parties, unauthorized constructions are never demolished. Generally, if the neighboring "formal" area is being developed, then the government undertakes a "cosmetic surgery" of that place and provides the infrastructure to the residents of the unauthorized areas. The owners have to pay for the development charges. This charge is based on the actual estimate and is done on a non-profit basis. The lay-out is then approved with minor changes to the existing development.

3.0 Interviews
3.3 Interview # 3

Anjanappa, Building materials supplier.

He started his business ten years back. He financed his business through his personal savings (approximately Rs. two thousand). He is the only person in his family in this business, and he did not possess any particular skills before starting this venture. He worked as a construction laborer before he started the business. He lives in Kodihalli and the geographic scope of his operation is confined to the same area. He is not registered with any association, nor is he a member of any cooperative society. In fact, he does not even have an office or a building to operate his business. He has setup the materials on an open site.

The materials he supplies are brick, sand and stone aggregate. Some of his customers belong to the economically weaker sections and live in slums close by. He also caters to the high income or the affluent groups. Around 50% of his customers are people who live in informal housing. He does not face any major problem in the business, although sometimes he finds it difficult to obtain building materials. During the monsoon season he incurs a loss, since he stores building materials on the site. He plans to be in the business as long as he lives. Some of the houses he supplies materials to are small one-room houses. He buys all his materials directly from the manufacturers (He obtains bricks from the kilns, and stone from quarries situated at the out-skirts of Bangalore). He makes a profit of 15% to 20% on the materials (he buys brick for Rs 350, Rs. 500, and Rs. 600 depending on the quality of the brick, and sells it for Rs. 500, Rs. 600, and Rs. 700-800 respectively).

The maximum building material he stores is worth Rs 2000 - 3000, since his business is carried out on an open field. The owner of the land has given him permission to use the site until construction commences on the site. He transports materials by lorries or bullock carts depending on where he gets the materials from. He has two laborers working for him, and they are paid on Wednesdays and Saturdays based on the amount of work done. For example, he pays the laborers Rs 1.50 for every 1 ft. of stone converted into stone aggregate. On an average, the laborers make anything between Rs 100 - 150 per week.
The workers are local people and do not require any skills. He would like to avail himself of banking facilities, but finds the procedures and the paper work rather tedious. He does not extend any credit to his customers. He does not plan to extend his business since he does not have a "permanent office" to operate from.

He owns a house on a site of approximately 500 sft. He bought it from his uncle for Rs. 1,200. His uncle had inherited this piece of land and subdivided it and sold it to friends and relatives. His house was built without any permit or license and therefore, did not have any piped water or sewage connections. The BDA acquired the nearby land and developed it. He later obtained water and sewage connections for a nominal development fee.

Age: 48 years old, Married, 4 children (both the daughters are married), and earns around Rs. 50-60 a day.

3.4 Interview # 4

Mr Anand Shetty, Class I Contractor.

He started his business in 1971. His first project was a government project and hence he had to register with the Public Works Department. Prior to being a contractor, he worked as an accountant for Shankar Narayan Constructions. He has been residing in Wilson gardens for the past 20 years. He is not a member of any cooperative institution or any other associations.

All his projects are within the Bangalore City limits. Currently, most of his projects are government or public sector projects. Previously, he used to undertake construction of private residences and commercial complexes. He deals with all aspects of building construction except electrical work, which he sub-contracts to an electrical contractor. Most of his customers and contacts are obtained through friends. His typical customer belonged to the middle income group (monthly income of Rs. 2,000- Rs. 3,000). The major problem he faces in his business is mainly constructional (unforeseen defects).

The only informal work he has undertaken is the construction of a tile factory on a "revenue-land", which he later sold. He built the factory and obtained a "no objection certificate" from the Zilla Parishad to get electricity connection. When he sold the factory, the fac-
tory did not have piped water. He plans to stay in the same line of business but feels that a life of a contractor is tough. It is a big gamble, he says, because there are times you have a profit of one hundred to two hundred thousand, or sometimes it is only Rs. 25 thousand - there is no steady or guaranteed income. It fluctuates and is highly dependent on the market trends. The other major problem he faces is under-quoting the price of an item in the tender, and then having to undertake the job at a loss.

A typical house design according to him would be a middle-income house occupying an area of 800 -1100 sft. Most of the houses are designed by engineers, or contractors themselves. He has not built any architect designed houses, since they work out more expensive. He feels that the prices of building materials have been increasing by at least 20% every year. He estimates the rate of construction to be approximately Rs. 20 thousand to Rs. 22 thousand per 100 sft as compared to Rs. five to six thousand ten years back. Many people nowadays go for labor contract since this works out to be approximately Rs. 18 to 20 thousand per 100 sft. It takes a minimum of 6-8 months to complete the house construction. The reasons for delays are mainly due to the time involved in obtaining a building permit from the authorities. He feels that there are a lot of unauthorized constructions mushrooming on the outskirts of the city.

He obtains building materials from suppliers in and around Bangalore. Stone is obtained from the quarries situated on the outskirts of Bangalore (Bannerghatta) and stone aggregate from Nakundi. Bricks are easily available everywhere. He makes a profit of 10% to 15% on all the building materials. Cement and steel are obtained from the open market. He buys the material from his regular supplier because he does not have to bargain for a good price every time he starts a new project. He is protected from escalation on governmental projects. In private projects, most of his customers understand the fact that the prices keep rising and are very cooperative about the contractor's financial dilemma.

He does not stockpile any material since materials are easily available. He buys the materials as and when he needs them. In fact, he feels that stocking materials is not advisable since he has to bear the transportation costs from his office to the site. He only stocks scaffolding and centering
materials. Materials are transported by bullock carts or lorries depending on the distance (transportation costs amount to about 2-5% of the building materials costs).

He has two permanent laborers, and one 'mistri' (supervisor) in his payroll. He hires the rest of the laborers on a temporary basis, depending on the nature of the project. All laborers live in Bangalore and there is no shortage of unskilled laborers.

The salaries he pays are:

- Male Coolie  Rs. 25 per day
- Female Coolie Rs. 15-18 per day
- Mason       Rs. 55-60 per day
- Carpenter   Rs. 60 per day
- Plumber     Rs. 50 per day
- Tile layer  Rs. 60 per day
- Ceramic tile layer Rs. 75 per day
- Mistri      Rs. 750 per month

He buys most of the building materials on cash, although sometimes he obtains it on credit which is paid within 15 days. There are no terms of credit. However cement and steel can be bought only by paying cash.

He finances his bigger jobs by taking loans from the banks on a 15 1/2% interest. He does not generally avail of the services of private money lenders, except when he needs a loan for one-two months, since the rate of interest is too high. Around 90% of his customers generally obtain loans from banks, or through financial lending institutions like LIC, HDFC. He generally keeps Rs. 50,000 as floating cash for various projects and currently has bank overdraft of Rs. 110 thousand.

He used to build and sell houses earlier. He has built and sold two houses for which the sites were procured from BDA, and housing cooperative. He sold one house (area 1000 sft.) for Rs. 110 thousand, and the other one (area - 800 sft.) for Rs. 75,000. He does not plan to expand his busi-
ness. He implied that there are several instances of building violation in Bangalore. Most of the times, the contractor violates the building codes but these are done at the owners risk.

Age: 44 years old, Married, two children ages 16, and 18.

3.5 Interview # 5

Mr. Pasha, Chief Architect, Slum Clearance Board.

According to Mr. Pasha, the Slum Board takes action only on those slums that meet the requirements prescribed in the Karnataka Slum Clearance Act (section-3, Slum Act). The two different types of slum board activities are:

- Providing basic amenities (environmental control), and
- Slum clearance and re-housing.

Providing the basic amenities include:

- Roads,
- Drains,
- Street lights,
- Community latrines, and
- Water.

The slum board, after declaring the area as a slum, conducts a socio-economic survey to find out how many people live within that area, how many members are there in each family, the family income, etc. For this purpose, the government allots approximately Rs 250-300 per family. Very little upgrading is carried out because of a lack of funds and a shortage of space. Slum clearance and re-housing is a more popular program. To date, the Slum Clearance Board has identified around 1,270 slums in Karnataka, including 401 slums within Bangalore city limits. The slum population is around 365 thousand which constitutes 1/10th of the urban population. Under the above
schemes, approximately 100 slums have been rehabilitated. The types of housing schemes employed by the board are:

- Individual units,
- Multi-story units, and
- Row houses.

The cost of these units have increased from Rs. 12 thousand in 1984-85, to Rs. 25 thousand in 1987-88. If the houses are to be constructed on the same site, transit camps are constructed for temporary housing for the residents.

The financing for the units is by HUDCO (80%) and State Government grants (20%). To date, around 7,000 houses have been constructed, out of which about 1,000 were constructed last year. The board proposes to construct about 3,500 houses in 1989. The budget has been set at Rs. 36.5 million every year. The houses are constructed by local contractors after they are awarded the contract. The area of each unit is approximately 164 sft. The resident gets the ownership in 20 years (20 installments), when the full amount has been repaid (approximately Rs. 84 per month) at an interest rate of 7 1/2 %. The slum board has acquired 59 acres of land through the Land Acquisition Act. There is no provision for people to expand their houses.

Mr. Pasha felt that there are numerous units unauthorized constructions everywhere around Bangalore. The steps generally followed in the formation of the illegal subdivisions are:

1. BDA announces that they are going to acquire land for lay-outs.
2. The near-by residents (farmers and land-owners) subdivide the land into smaller plots, and sell off the lots. The owners of small plots build houses without obtaining a building permit from the BDA.
3. Once the area around the “unauthorized sub-division” is developed by BDA, the BDA then performs a “cosmetic surgery” on the unauthorized sub-division and provides infrastructure for the houses. These development charges are borne by the developer or the owner.
3.6 Interview # 6

Vijay Ananth - Steel fabricator.

He started his business six years ago, with an initial investment of Rs. 60,000 given to him by his father. He has no partners and is the sole proprietor of the company. He also owns a poultry farm at Whitefield. He does not possess any special skills, but has acquired few of the “tricks of trade” from his father who worked in the workshop in Hindustan Aeronautical Limited. He has been living in Whitefield, and is registered with the Karnataka Small Scale Industries so that he can get steel at subsidized rates.

His scope of operation is within a 10 - 15 km radius from his residence/office. He undertakes the fabrication of flats and columns, and grills for windows. Most of his customers belong to the middle income group and are contacted through friends or for government jobs, through tenders. The profits from his poultry farm amounts to 15-20% of his total income. He plans to continue fabricating steel flats and run the poultry farm. Most of the jobs he gets are directly from contractors, or the owners.

His cost estimate is based on the current market rates and in the case of the window grills, on the complexity of the design. The cost of the grill is worked out on a sft. basis, or on the basis of weight. He takes approximately a week to complete the job. He obtains most of the building materials from the market and stocks some of these in his factory. He buys materials from the same suppliers since he is assured of the quality of the material. He sometimes buys steel on credit (1 week) but no credit charges are added. There is no question of price escalation, since his job does not extend over a long period of time. He has a tempo (pick-up truck) and therefore has no problem transporting material to the site.

Currently, he has eight people in his labor force out of which five of them are permanent workers. They all live in nearby areas and did not possess any skills prior to their employment. They underwent a training program in the factory itself. He pays his workers:

Worker  Rs. 800-850 per month
Welder  Rs. 900 p.m.
Welder (temporary) Rs. 50 per day.

His factory is on an agricultural land, and was purchased 30 years ago. It has been registered with the Zilla Parishad. He did not require any special permit to obtain the machinery. He extends credit to only close friends, and that too, for about 10-15 days. He plans on expanding his business.

Age 34, married, two children ages 1 and 4.
4.0 Private Sector: The Formal and Informal Components

In Bangalore, private sector housing ranges from an informally constructed hut to a formally constructed luxury bungalow. Within this range, every household is somehow or the other housed. The private sector, formal and informal, contributed over 85% of new housing units in Bangalore between 1971 and 1981 (Suresh, 1987). This chapter describes the nature and behavior of the construction industry, and explains how the actors operate in providing housing for the various income groups. The information gathered for this chapter is based on the interviews described in the earlier chapter, and data provided by the building officials of Bangalore.

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12 V. Suresh (1987), Regional Chief Housing and Urban Development Corporation, claimed that nearly six out of seven houses in the city are built by individual/private sector. Only one out of seven are contributed through the efforts of the public/formal housing.
4.1 Land

4.1.1 Urban Land Policy

The government set up the Bangalore Development Authority in 1976\textsuperscript{13} with a mandate to acquire, develop, and sell large areas of land and to facilitate access of the lower income groups to the land market. The BDA acquires land by the Land Acquisition Act of 1984, and prepares the subdivisions as prescribed in the Bangalore Development Act of 1976. The allotment of sites is prescribed in the BDA (allotment of sites) rules, 1982 (the procedure is explained in Appendix-II). The land supplied by the BDA has not been able to keep up with the demand, and the land prices have soared beyond the reach of low income groups. Apart from the BDA, individuals can obtain land through the following agencies:

- Housing Societies, and Developers (the sub-division has to be submitted to the BDA for approval).
- Unauthorized subdivisions.

The process of illegal land subdivision and ownership is explained below. The supply of land by formal agencies (BDA and Housing Societies) is discussed in Appendix II.

4.1.2 Illegal Land Sub-division

The rising prices and the shortage of formal sites (both from BDA and from the housing societies) has led to the speculative sub-division of land and formation of unauthorized layouts. Due

\textsuperscript{13} BDA came was formed from the coalition of the City Improvement Trust Board (CITB) formed in 1945, and the Town Planning Office which was formed in 1961.
to the delay caused in acquiring land for subdivisions by the BDA (it takes approximately five to six years between the preliminary notification for acquisition, and the final awards, or taking possession of land), the land proposed to be brought under development schemes as well as housing schemes of BDA are generally disposed off by the owners by forming illegal subdivisions (revenue sites). This phenomenon occurs not only in the land proposed to be included in the BDA Land Acquisition scheme (notified area), but also in the surrounding areas. The situation is often exploited by developers who buy land from the farmers and subdivide the land, and sell it as individual plots without following the norms specified by the planning authorities.

The illegal purchasers construct their houses by obtaining building licences from neighboring village panchayats which are totally ill-equipped to grant such building licences. Many individuals construct their houses without obtaining any permit at all. One of the contractors interviewed had built a tile factory on a revenue site and obtained a no objection certificate from the village panchayat after the construction was completed. This certificate helped him get the electricity hook-up for the factory (Anand Shetty, 1989).

Most of these revenue sites have been formed without provision of the necessary public services. According to Govind Raju, Town Planner Bangalore City:

"The land is not developed. The sites do not have any support services or infrastructure. Water is obtained through wells, and most of the time there is no sewage disposal. In some cases site owners build pit privies. The roads within the sub-division are narrow, and do not comply with the sub-division regulations. Each such lay-out is an entity by itself, disregarding the linkage and the overall development of that area."

It has also been found that land owners not only sell off lands which are proposed to be included in the BDA Land Acquisition scheme, but also sell the land after the actual issuance of the "preliminary notification", although the publication of preliminary notification bars the land owners from disposing off their holdings. By the time the land is taken into possession, this prime land would have changed its color with unauthorized buildings and sheds by vested interests and illegal site holders. Mr. Pasha, Architect, Karnataka Slum Clearance Board, said in an interview,

"Most of these land owners hire small contractors to build a house within two days. The construction is done during weekends (the second and fourth weekend of the month, since those weeks are 5 day weeks) or during public holidays, so that they are not stopped by the enforcement or vigilant squad appointed by the BDA. The building material used is generally bricks, mortar and the roof is constructed with asbestos cement sheets. The houses constructed are generally small, and consist of a room, a kitchen and a bathroom. Ultimately, the BDA has to perform a 'cosmetic
surgery' on the illegal lay-out and provide the residents with piped water, and sewage connections, and access through paved roads at a nominal fee from the residents."

Most land owners feel that the Government gives them a lower compensation for acquiring their lands than they would normally get if they sell the same land in the open market.\textsuperscript{14} Besides, in the open market, the owner can take a part of the value of land in cash (undeclared for tax purposes). This option is not open to whose land is acquired by government agencies like the BDA. Even where land is taken by the government, the land owners or the revenue site owners will resort to litigation or political intervention and continue with unauthorized constructions in the meanwhile. Court stay orders have become a boon to such unauthorized builders, since they can quickly put up sheds during the stay.

There are approximately 150 thousand unauthorized structures in the Bangalore Metropolitan Area. These structures accommodate nearly one fifth of the population of Bangalore (Govind Raju, Pasha, 1989). They are not confined to a particular area, but are found in dispersed pockets in and around the city.

The authorities have not succeeded in preventing unauthorized construction. Their reason for this has been the lack of proper enforcement squads, and inadequate police protection to deal with overnight speedy construction resorted to by vested interests to grab lands with cheaper investments. Political opposition has impeded the BDA attempts to demolish existing informal houses. These illegal subdivisions sustain their claim to urbanize the land, and they subsequently get access to the infrastructure facilities near-by without having to pay for them. This has deprived the BDA of its revenue, both in terms of development costs, and maintenance taxes.

\textsuperscript{14} According to the BDA authorities, the maximum compensation given (based on the Land Acquisition Act), is Rs. 150 thousand, for an acre of land. This amount is way below what the developers are willing to pay.
4.2 Housing Construction

The private sector includes the building materials industry and the construction industry. The most striking aspect of the private sector is that in spite of the large employment in modern building material industries such as cement and steel, most of the other operations, including a large part of contractor or artisan built housing are partially or fully informal. This sector is not even designated as an industry by the government because:

- The government does not facilitate its development into an industrial activity.
- Construction is seen as a labor intensive activity and therefore the level of mechanization is low.
- Contractors, artisans and designers tend to encourage traditional techniques like head carrying and manual handling on the site.

Nevertheless, private house building efforts provide housing at a cost which may be between 20 to 50% of cost of the government units. It is clear from the average number of houses constructed each year and the housing institutional expenditures of the public or formal agencies that the cost of formal housing is high in comparison to the construction by the private sector. There are a number of reasons why the cost of the private house building is substantially less than that of formal government units:

- Use of local material skills and resources,
- Level of specification is appropriate with the level of investment the people,
- Little or no overheads,
- Minimal interaction with the formal financial system.

Household expenditure on construction of dwellings depends on family income. One therefore finds the acute inequalities of income distribution in a developing country reflected in the size,
quality, and cost of dwellings put up by different households (Ganesan, 1979). Differences in resources used in house-building by the different income groups arise on account of the choice of building materials, services and finishes. Such differences can also result from the ease or difficulty with which certain materials lend themselves to assembly at building site. The population census has classified the dwellings according to the kind of building materials used in the construction of walls and roofs. The national sample survey classifies dwelling structures under three distinct categories: pucca,\textsuperscript{15} kacha,\textsuperscript{16} and semi-pucca.\textsuperscript{17} From the census data,\textsuperscript{18} the number of pucca houses in Bangalore is 86.2\% of the total housing stock in 1971, while the semi-pucca and kacha houses amount to 2.7\% and 11.1\% respectively.\textsuperscript{19} Permanent buildings are put up by the more affluent groups. However, within the permanent types themselves, modern luxury houses are put up by the more affluent groups, and the conventional types by the poorer households. This distinction is not evident in the statistics provided by the census. In fact, all permanent houses are defined as pucca houses. There are a number of basic materials such as cement, bricks, timber, asbestos, and rubble which are common to houses of all categories within the permanent type. Nevertheless, there are characteristics that distinguish a luxury house from others, and some of these are:

- larger in area.

\textsuperscript{15} Pucca house: classified as a unit with predominant material of wall and roof, as follows:
  - Walls: made up of burnt bricks, galvanized iron sheets, or other metal sheets, stone, cement blocks, concrete, etc.
  - Roof: made up of tiles, slate, corrugated or zinc or metal sheets asbestos cement sheets, reinforced cement sheets, brick, lime and stone.

\textsuperscript{16} Kacha house: can be divided into two categories:
  - Serviceable kacha: A unit with mud walls and thatched roof.
  - Unserviceable kacha: A unit with thatched walls and thatched roof.

\textsuperscript{17} Semi-pucca: Units which do not fall in any of the above categories. Generally a semi-pucca structure comprises of walls made up of pucca materials, namely, stones, oven-burnt bricks, etc., and roofs made of kacha materials, namely mud grass etc. In some cases, it may consist of walls of kacha materials like un-burnt bricks, bamboo, etc. and roofs of pucca materials like timber, jack board etc.


\textsuperscript{19} Total number of pucca houses for all urban areas in India have increased from 46\% in 1961, to 64\% in 1971.

4.0 Private Sector: The Formal and Informal Components
• well serviced, or in some cases excessively serviced (e.g. ceiling fans, water supply, sewerage, etc), and/or
• expensively finished using materials like emulsion paints, mosaic floor tiles, teak wood doors, etc.

4.2.1 Dwelling Development Mode

Generally, individuals construct their houses in the following development modes;

• **Progressive Development**: The development mode where the construction of the dwelling and the development of the local infrastructure to modern standards by stages, often starting with provisional structures and under-developed land. This essentially is a traditional procedure generally practiced by squatters with de-facto security of tenure, and an adequate building site. This concept of building mode is not restricted to the squatter settlements. Many middle income families often occupy their house before the entire finishing is completed (wardrobes, painting, tile polishing etc.). One often sees steel bars exposed in middle income houses. The owner expands on his house (builds another floor for self-occupancy or for renting it out) at a later date, subject to the availability of finances. One of the contractors interviewed felt that occupying the house before completing the construction resulted in the poor condition of the houses (Albert, 1989). In Bangalore, many middle income house owners occupy the house before completion, due to lack of finances. There are several case where informal units are built on top of formal units. Since the units already has infrastructure connections such as water supply, sewage and electricity, it is easy to build another unit on top of the existing one without obtaining a building permit. This practice is especially common where the owner builds the unit for self-occupancy.

• **Instant Development**: The formal development procedure in which all structures and services are completed before occupation. This type of development mode is most common in high income, and some middle income private sector housing.
4.2.2 Construction Process

A dwelling unit is considered unauthorized when it is constructed without a permit and when the building code is violated. Irrespective of whether the building is formal or informal, generally there are four groups of building types:

- Self built.
- Artisan built.
- Small contractor built.
- Large contractor built.

**Self built:** A dwelling unit is built directly by the user or occupant. These type of buildings are generally temporary in nature and are built for immediate occupation. This type of housing is more prevalent in the informal sector.

**Artisan built:** A dwelling unit is totally or partially built by skilled craftsmen hired by the user or occupant. Payments are monetary or in some cases, in the form of exchange of services. These kinds of houses are a common practice in the informal sector. The materials used for construction are either permanent or semi-permanent. Many middle income households now resort to labor-contract, since materials are easily obtainable. In this type of contract, the contractor is only responsible to provide the labor, and supervise their work. Many houses under this class of construction are also built under the supervision of a foreman or mistri. The supervisor or the foreman in charge hires the work force and supervises their activities. They also advise the owner on when to buy the materials. The owner buys the materials and pays the workers, and many times, supervises the work.

**Small contractor built:** The dwelling unit is totally built by a small organization hired by the user occupant or the developer. The small contractor is defined by the scale of operation, finances, and machinery; the scale being limited to construction of single dwelling units or single complexes. The contractor takes up construction of buildings ranging from small informal houses to luxury
bungalows. The construction techniques used are more capital intensive than the artisan built houses, since it involves equipment like concrete mixers, hoists, concrete vibrators etc.

**Large contractor built:** Dwelling unit is totally built by large contractors. Large contractors are defined by the scale of operations, both financially and materially. This scale reflects both larger and more comprehensive operations encompassing the building of large quantities of similar units, or a large complex. The constructions undertaken are large formal projects. These firms build mainly high rise buildings, non-residential structures, and large apartment complexes. This sector uses more manufactured inputs than the other sectors.

In Bangalore, no specific skills are required to become a contractor. Some of the contractors interviewed had no prior building experience (Anand Shetty, 1989).\(^{20}\) The contractors within the building industry cover a wide spectrum ranging from large firms to small independent foremen. Most contractors, even in the formal sector, are not registered with the Public Works Department (PWD). The same contractors work in both the formal as well as the informal sectors (Anand Shetty, 1989).\(^{21}\) The contractors only register with the PWD when they are executing government projects (Albert, Anand Shetty, 1989). Majority of the house-building artisans and builders form a part of the informal sector. They are self-employed and not institutionalized. They function without the benefits of cooperatives or extension services (Anjanappa, 1989). Most construction projects are located in the vicinity of the contractor's residence (most contractors operate from their houses).

For a small house, clients almost always seek a small scale contractor. They benefit from easy access, and availability of personal advice, lower cost and, in general, from small contractor's flexibility. Most contractors are hired based on recommendations from friends and relatives, or through personal acquaintances. Even in public housing programs, many factors favor the small contractors. They require very little planning, and comparatively very little knowledge of advanced technology. The prevalence of sub-contracting system can be looked as a rational division of labor

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\(^{20}\) Mr. Anand Shetty, one of the contractors interviewed, was an accountant in a construction company prior to becoming a Class-I Contractor.

\(^{21}\) Mr. Anand Shetty, a registered Class I contractor, had also constructed a factory without obtaining a building permit.
especially in construction, which is associated with numerous specialized activities. Housing locations are dispersed and houses are often designed in groups of single units or low rise buildings. The potential contribution of small building firms in these situations is considerable. An army of small contractors, or sub-contractors, with its flexibility, and limited costs, provides the necessary capacity at a lower cost than a large builder. Apart from constructing houses for people, many contractors engage in building houses on their own account, and selling them for a profit (Anand Shetty, Albert, 1989).^{22}

There are numerous ways in which the private sector caters to the need of various income groups. A few general cases are illustrated below:

**Informal Low to Middle Income Housing**

An informal structure may be designed or constructed by an individual owner and laborers hired by him, by laborers under the supervision of the site manager (mistri) contracted by the owner, or by a contractor who takes responsibility for the entire construction process. Even in this sector, there are limited cases of self-help, except when laborers or owners connected with the construction field build their own houses. In such cases, the owner contributes towards the labor in constructing the house (Anjanappa, 1989). Most often, informal housing construction is undertaken by a few of laborers under the supervision of the owner. The owners provide building materials and often supervise the construction work. Materials for construction are obtained from small suppliers and the regular markets at competitive prices. Most small scale building material suppliers are located in the vicinity of the building site.

This type of house is then gradually upgraded. The construction and the upgrading of the dwelling is dependent on the dwelling owners availability of funds (Anjanappa, 1989). Most of the owners finance their housing through personal savings, loans from friends and relatives, chit-funds, or in some cases, loans from private money lenders who charge a high rate of interest. One of the building supplier who built his house remarked (Anjanappa, 1989),

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^{22} Mr. Anand Shetty and Mr. Albert, contractors, mentioned that they had built two houses each. Mr Shetty sold them for a profit, whereas Mr. Albert rented them out.

4.0 Private Sector: The Formal and Informal Components
"We cannot obtain loans from banks because our site is not approved by the BDA. Moreover, even to obtain a small loan, the paper-work is too cumbersome, and beyond our understanding."

The lay-out of the house generally consists of two multi-purpose rooms (total area occupied by the house is approx 150-300 sq. ft., sometimes even smaller). The houses are built of brick and mortar walls, and roofed with asbestos cement or corrugated iron sheets. The “mori,” is located at one end of the house, and is used for washing and bathing purposes.

According to an executive engineer of the BDA, many contractors take up the construction of informal houses. In such cases, the owner pays the contractor a lump sum of Rs 15-20 thousand rupees. In such cases, it is the contractor’s responsibility to provide materials and labor for construction. These types of structures are completed in a couple of days.

**Formal Middle income housing**

It is a common practice among middle income house owners to hire a contractor to build on his property. Most contractors are hired based on recommendations from friends or relatives. The contractor is responsible for providing materials and labor for construction. The contractor has the necessary capital goods at his disposal, and knows how much building material and labor is needed. Most contractors hire a mistri to supervise the work. The contractor visits the site on a regular basis to supervise the construction. The contractor builds a temporary shed on the site to house the mistri. A part of this shed is used to store centering and scaffolding materials, and sometimes building materials. Nowadays, since materials are easily available, it is a common practice for the owner to buy the materials, but only infrequently can provide the labor for the construction (Anand Shetty, 1989). The construction work is then done by a gang of workmen under the supervision of a labor contractor, or a “mistri.” It is the supervisor’s or the contractor’s responsibility to provide the labor in such cases. The owner sometimes supervises the construction

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23 An outlet or drain to run-out water.

24 Surinder Nayak, Executive Engineer, BDA, talked about the role of contractors in the informal sector in an interview.

25 Mr. Anand Shetty claimed that the owner saves approximately 10-15% of total construction cost if he employs a labor contract (approximately Rs. 1,800 to 2,000 per 100 sq ft.). However some people do not go for a labor contract because the owner has to be on the site the whole day, to ensure that the workers mix the right proportion of building materials. This often proves to be a great headache for the owner.
work, to make sure that the labor contractor/supervisor do their work honestly and diligently. In case of labor contract, if a mistri is looking after the job, he can only work on one site at a time, unlike a contractor, who simultaneously works on 3-4 projects during the same period since he hires supervisors to take care of the construction.

The services of an architect, or an engineer, are required only to obtain a building permit in the formal sector. Owners employ architects only in the case of apartment complexes townhouses, or bungalows. This is because the owner has to pay the architect 6 to 8% of the total building cost (Albert, Anand Shetty, 1989). Most of the time, the houses are designed by the contractors, and in some cases, it is a joint venture by both parties. The building plans are then drafted according to the specifications of the BDA by a craftsmen employed by the contractor, or by someone who is hired to the job. One of the contractors interviewed said that he sometimes used the services of craftsmen who set up their “office” on the sidewalk. These people, he said, carry the necessary equipment needed to draft the plan according to BDA specifications (Albert, 1989). This plan is then signed by a qualified engineer. The choice of building material is left entirely to the owner. However, in some cases, the contractor informs the owner on the range of building material available in the market.

Most contractors estimate the cost of the house on a square feet basis. The current rates for a middle income house ranges from Rs. 180 - Rs. 200 per sq. ft (Albert, Anand Shetty, 1989). A typical middle class house for a household with a monthly income of Rupees 2000-3000 per month, would cover an area of 750-900 sft. The contractors interviewed, estimated the cost of a middle income house to be approximately Rs. 150,000 - Rs. 200,000 (Anand Shetty, 1989). This cost does not include the price of land. The construction of such a house is generally financed through a

26 According to the National Building Code of India, “essential requirement for every building work for which permission is sought, has to be designed by a licensed architect/ engineer/ structural engineer/ supervisor/ or town planner. The qualifications which an architect or engineer or supervisor or town planner shall have before he is registered by the local body and permitted to practice within the local body’s jurisdiction”

27 Both, Mr Albert and Mr. Anand Shetty, had not built any architect designed houses. They felt that middle income families did not often hire architects because it works out to be extremely expensive.

28 These rates were quoted by Mr. Anand Shetty and Mr. Albert, contractors, in separate interviews.
combination of personal savings loans from banks and financial lending institutions (Anand Shetty, 1989). Sometimes owners take a loan from their provident fund. The owners have to obtain a "certificate of completion" from BDA before occupying the house.

The houses are generally built on 30' x 40' and in some cases on 60' x 40' sites. The housing design generally consists of two bedrooms, a living dining, a kitchen and a bath. According to some of the contractors, one of the bedrooms is sometimes as small as 8' x 8' (Albert, 1989). The materials used for construction are plastered brick wall, and reinforced concrete roof. The interior finishes depend on the finances of the owner.

**High Income Formal Housing**

These houses are generally designed by an architect or an engineer. The construction is undertaken by contractors under the supervision of the architect/engineer. If the house is designed by the architect, the contractor is often hired on recommendation of the owner, or in some cases, the architect hires a contractor who has worked for him before. If an architect is hired, the architect is responsible for the following:

- Building plan and estimate,
- Building license from the authority,
- Supervision for construction, and
- Certifying bills forwarded by the contractor.

In an architect designed house, the selection of materials is done by the architect with approval from the owner. The time taken to complete a house ranges from 8 months to a year. The houses are larger in size (15 hundred sq.ft. and above), and requires more engineering or manufactured inputs. These class of houses are built on sites measuring 60'x 90'or in some cases 80' x 120'. The contractor uses the same kind of labor he uses in informal housing or middle income housing. However, these types of construction require more skilled labor. These units have a significant cost

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20 Mr. Anand Shetty claimed that approximately 90% of his customers obtained loans from banks or other financial agencies such as HDFC and LIC.
devoted to the quality of finishing of the house (higher quality floor tiles, indoor painting, more wood work, etc.).

Most contractors do not extend credit to owners; they commence the construction work only after obtaining an advance from the owner (Albert, Anand Shetty, 1989). If an architect is hired, the form of remuneration in principle is prescribed in the "Conditions of engagement and scale of professional fees and charges by the Indian Institution of Architects." However, this percentage of remuneration is not always followed.

For larger projects such as apartment complexes, town houses, and public housing projects, the job is given to the contractor based on the lowest bid. The large contracting firms generally undertake government jobs, which are obtained through a tendering process. In the case of a formal contract, the contractor has an "item-rate contract", where the contractor is paid for the actual quantity of work done as measured at site at rates quoted by the contractor in the tender. In a formal contract, "all materials and workmanship has to be as per the relevant code of Indian Standards Institute (I.S.I.) specifications of approved type." However, in many of the formal housing programs the materials are often sub-standard in quality, and cases of mixing more sand to cement and under-reinforcing etc are very prevalent. One of the reasons for the poor quality construction is that contractors often under-quote the prices in the tenders in order to obtain the project, and then are left with no alternative but to complete the construction using inferior and cheaper materials. Sometimes poor construction is because of the unscrupulous practices of some of the contractors.

Most of the contractors interviewed felt that the building codes and by-laws are often violated. This is a common practice in middle income housing where the allowable building area after taking care of the prescribed set-backs, is very small. The most common violations include percentage ground coverage, and depth of overhangs. The violation is entirely done at the owner's risk, and often the owner if caught, is let off by the building authorities after he pays them a nominal fine (Anand Shetty, 1989).

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30. The contractors interviewed claimed that they obtain approximately 10-15% of the total construction cost.
Flat promotion by developers

Of late, Bangalore has been witnessing the growth of a number of high rise and apartment complexes. The number of owner occupied flats has roughly tripled in the past five years. Gopinath Rao in his book, "House Site in Urban Areas", says that flat promotion ensures a profit of at least 30% in two years depending on the locality. He feel that the opportunities the developer has to make quick money is immense, and he cites the following example.

"A flat promoter buys, say a plot of 7,200 sq. area for Rs. 300,000. He can construct as many as 14 flats of a total area of about 10,800 sq. within this plot. Against the actual construction of about 120-150 per sq. ft., he charges say Rs. 220 per sq. ft. Now his actual expenditure works out to only about Rs. 1,600,000 which includes the land cost. He gets around Rs 2,400,000 - a profit of 800,000 in no time.

There is a great deal more to the 'modus operandi' of the flat promoter. His initial investment sometimes does not even fully cover the land cost. He pays an advance of about 20% to the seller, and immediately begins advertising for prospective buyers. An advance of no less than 25% of the ultimate cost of the flat charged by the flat promoter from each of the future owner to begin his construction activity."

These large developers have their own engineering staff and therefore engage only small scale sub-contractors or labor contractors. The promoter reaps a profit anywhere above 15%, depending on the location of the apartment complex. In some cases the entire project is given to a contractor (generally medium to large sized firms). Some developers often violate the building code and regulations, in terms of open spaces, floor area ratio, height of the building, and plot coverage.

4.3 Building Materials

4.3.1 Supply of Building Materials.

Building materials constitute an important component of the cost of construction. Almost 67% of the building cost consists of various building materials, while 33% is devoted to various categories of labor. Cement, steel, brick, and timber are among the most important components of the cost of the building materials, hence their prices are major determinants of the total cost of
construction. The prices of building materials are increasing at a rate of 10-20% every year (Albert, Anand Shetty, 1989). Cement has increased by 25%, steel by 30%, wood by 10 to 15%, sand by 40%, and labor by 10 to 15% in the past five years (Rao, 1988). According to Rao, the impact of price escalation on the overall cost of construction for a medium sized house of plinth area 700 - 900 sft, would be an increase of Rs. 8,000 to 10,000 every year.\(^{32}\)

Most contractors have no problems obtaining building materials from the open market. The formal sector contractors are able to use subsidized, government credited supplies especially for cement and steel. The informal sector contractors use materials from private distributors. This procedure is more expensive in terms of out-of-pocket expenses, but the materials are easily available. Materials like brick, tiles, and stone are available anywhere in the city, whereas cement is generally available in the commercial areas of the city.

Most contractors do not stock-pile materials, and are not generally protected against the escalation price (Albert, 1989). Contractors are only guarded against escalation in public projects. One contractor who was interviewed mentioned that even in some private housing, customers were cooperative and paid for the increase in prices (Anand Shetty, 1989). One contractor who was interviewed felt that stock-piling was more expensive since he had to pay for the transportation of the materials from his house to the building site (Anand Shetty, 1989).\(^{33}\) The only materials contractors stored were cement bags (rarely), and scaffolding and centering materials.

The building material suppliers do not extend credit to the contractors. Most contractors obtain materials after paying an advance. The contractors obtain materials from the vicinity of the areas where they live and most often deal with the same suppliers, since they are assured of good quality materials (Anand Shetty, Ananth, 1989).\(^{34}\) The building material suppliers are generally small scale suppliers, and do not need to register with any association to supply materials. The

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\(^{32}\) Anand Shetty, contractor, estimates the current cost of construction around Rs. 20,000 to Rs. 22,000 per 100 sft. The cost of construction ten years back was Rs. 5,000 to Rs. 6,000 per 100 sft.

\(^{33}\) Mr. Anand Shetty claimed that the transportation of the materials in trucks would cost him approximately 5% of the price of the material.

\(^{34}\) Mr. Albert, however, did not deal with the same supplier because he felt that the supplier would become lax and delay the job, if the contractor was a regular customer.
formal manufacturers however, are registered with the Karnataka State Small Scale Industries Council, and therefore can obtain raw materials at subsidized rates (Ananth, 1989).35

It is a very common sight to see some suppliers set up their “markets” on open fields. These suppliers generally obtain the materials from the manufacturers, and supply to small scale builders. One of the suppliers interviewed had set up his “business” on an open site, and could not store materials valued more than two to three thousand rupees because of the unpredictable weather (Anjanappa, 1989). The building materials are transported to building sites on bullock carts or lorries (trucks), depending on the distance. Most contractors make a profit of 10 to 15% on the building materials (Anand Shetty, Albert, 1989). The proportion of value of key building materials to the percentage of the overall cost of the building activity is shown in Table 2.

Elements like plastic pipes, electric wiring, sanitary fittings, nails metal products, etc., cannot be produced locally. These require major investments toward mass production in a few places capable of serving large regions. All of these construction elements are readily used in the informal sector. There is no contradiction between sophisticated mass production techniques and the user builder market.

35 Mr. Vijay Ananth, fabricator of steel products, is registered with the KSIC and therefore obtains steel at controlled rates.
Table 2

<table>
<thead>
<tr>
<th>Materials</th>
<th>% of overall cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Materials</strong></td>
<td></td>
</tr>
<tr>
<td>Cement</td>
<td>18</td>
</tr>
<tr>
<td>Steel</td>
<td>9</td>
</tr>
<tr>
<td>Brick</td>
<td>13</td>
</tr>
<tr>
<td>Timber</td>
<td>10</td>
</tr>
<tr>
<td>Sand</td>
<td>6</td>
</tr>
<tr>
<td>Aggregate for concrete</td>
<td>5</td>
</tr>
<tr>
<td>Rubble and Miscellaneous</td>
<td>6</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>67</strong></td>
</tr>
<tr>
<td><strong>B. Labor</strong></td>
<td></td>
</tr>
<tr>
<td>Mason</td>
<td>12</td>
</tr>
<tr>
<td>Carpenter</td>
<td>4</td>
</tr>
<tr>
<td>Painter</td>
<td>1</td>
</tr>
<tr>
<td>Plumber</td>
<td>5</td>
</tr>
<tr>
<td>Electrician</td>
<td>4</td>
</tr>
<tr>
<td>Unskilled labor</td>
<td>6</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>33</strong></td>
</tr>
<tr>
<td><strong>Aggregate Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.3.2 Tools and Construction Equipment

Head-loading in baskets and transporting building materials on site are largely done by women. The improvement of hand tools and simple material handling equipment ranging from wheelbarrows to small hoppers would do a great deal to increase productivity and will have direct impact on the working environment of unskilled labor, especially women.

Very little work has been done to improve tools and plants for building except, for the indigenization of imported plants. However, in the intermediate sector of small and medium plants and modern construction equipment, India is self-sufficient. Complex plants to handle large quantities of building material and tower crane equipment are few. Viable small scale production for the manufacture of walling and roofing material are also limited in number. Hence almost no alternative materials have been able to enter the market and become visible in people's housing.

Most housing construction uses domestic equipment, simple machines and local materials, except perhaps for cement, corrugated iron and asbestos cement sheets. Within the overall housing sector, the semi-permanent and temporary types that use traditional materials and construction techniques have a higher employment potential than the permanent one.

The difference in labor in terms of quality (skilled and unskilled), and quantity are assumed on account of the following:

- Choice of materials,
- Whether the materials are locally made, or imported, and
- Choice of techniques used in construction.
4.4 Labor

Labor for simpler construction is readily available. The continuous programs of large-scale building projects has created a need for a large reservoir of building laborers. Few contractors maintain a large permanent labor force, the smaller ones have very few permanent laborers or none at all (Anand Shetty, Albert, 1989). A typical small contractor has a core team that he uses on a temporary basis. There is no shortage of laborers. They are hired on a piece-work basis. Recruitment of labor varies with the size of the contracting firm. Persons engaged in building activity have no stability in their job or in their income. There is no binding contract between the contractor and the laborers. Even in the formal housing program, formal labor contracts and social insurance or security do not exist. The workers are dismissed from one site on completion of the job and are not necessarily hired at the new sites. The number of construction workers who obtain really long-term employment is very small. Because the seasonal and various cyclical factors further complicate the process of housing production, many construction firms prefer to keep a small number of mistris and workers, so they can expand and contract the unskilled work-force in response to the demand. Small firms can compete successfully with large firms if they retain this flexibility.

Most large firms have a number of skilled workers who have been working for the firm over a long period of time. These laborers do not get a permanent status, but a great effort is made to retain them during low activities. The non-skilled laborers generally move from site-to-site to get jobs. Some skilled laborers are self-employed and operate independently (these workers often take up maintenance and repair jobs, or finishing jobs, after the owner has occupied the house).

The same contractors and laborers work in both the formal and informal sectors (Anand Shetty, 1989). Most laborers are paid on a daily basis, except for the supervisor who is paid a

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36 Mr. Albert did not keep a permanent staff. However, during his “construction season”, he has approximately sixteen people on his payroll, which consists of four skilled workers and two supervisors. He generally maintains the same team whenever he gets a contract. Mr Shetty, however, had two workers and one mistri as the permanent staff. Both the contractors felt that there was no problem finding labor.
monthly salary. The rates are more or less the same in both the sectors, because even in the formal sector, the contractor hires the laborers himself. However, when the laborers are working for friends or relatives (very often the case in the informal sector), they charge the owner less than what they usually make. The contractor provides the supervisor or “mistrī” temporary accommodation till the construction is completed. The house is generally built in two days, and is built of bricks and mortar walls, with asbestos cement, or corrugated iron roof. The area of this dwelling is around 100-200 sft, and part of this structure is used to store building materials (cement bags, tools, etc.). Very often, the mistri acts as a middle man to coordinate the needs of the building contractor with those of safeguarding the basic interests of the laborers. The mistri is sometimes responsible to the contractor for the supply of temporary labor. The mistri often obtains a bulk of the man power from the regular work force, and additional labor is hired from individuals who approach the site, or by the mistri informing the men in the surrounding area about the work being available.

Construction labor is not homogenous. Workers are often classified according to their skills or functions. Single men or young nuclear families are preferred, since the women can carry bricks and mortar around the site using a small padded cushion on their head. And the men are used to do the more skilled work like bar bending, plastering, etc. Skills are learned through on-site informal training. Experience has shown that the unskilled labor can easily be trained into an efficient work force by teaching them basic skills such as familiarity with basic tools, how to make concrete, how to assemble simple components like bolts, etc. For example, in the case of a carpenter, the workers are usually trained by master carpenters on site, and they begin as helpers to the skilled carpenter. Table 3 reflects the relative wages paid to the laborers. These wages are based on the type of skills the laborer possess. Many workers consider the construction industry as a transition into the manufacturing industry. One of the building supplier interviewed used to work as a laborer on a construction site before entering the building material supply business (Anjanappa, 1989). Workers learn skills and then move into permanent employment in other industries.
### Table 3
Basic labor rates for Bangalore - (1988-89).

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Rate in Rs.</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Man Mazdoor(^{37})</td>
<td>25.00</td>
<td>per day</td>
</tr>
<tr>
<td>2.</td>
<td>Woman Mazdoor</td>
<td>16.00</td>
<td>per day</td>
</tr>
<tr>
<td>3.</td>
<td>Mason</td>
<td>45.00</td>
<td>per day</td>
</tr>
<tr>
<td>4.</td>
<td>Carpenter</td>
<td>50.00</td>
<td>per day</td>
</tr>
<tr>
<td>5.</td>
<td>Helper to Carpenter</td>
<td>25.00</td>
<td>per day</td>
</tr>
<tr>
<td>5.</td>
<td>Plumber</td>
<td>50.00</td>
<td>per day</td>
</tr>
<tr>
<td>6.</td>
<td>Electrician</td>
<td>50.00</td>
<td>per day</td>
</tr>
<tr>
<td>7.</td>
<td>Painter</td>
<td>45.00</td>
<td>per day</td>
</tr>
<tr>
<td>8.</td>
<td>Mixer operator</td>
<td>25.00</td>
<td>per day</td>
</tr>
<tr>
<td>9.</td>
<td>Tile layer</td>
<td>50.00</td>
<td>per day</td>
</tr>
<tr>
<td>10.</td>
<td>Ceramic tile layer</td>
<td>70.00</td>
<td>per day</td>
</tr>
<tr>
<td>11.</td>
<td>Mistri (^{38})</td>
<td>800.00</td>
<td>per month</td>
</tr>
</tbody>
</table>

Source: Schedule of rates, Bangalore City, 1988-89.

Exchange rate: 1 U.S. Dollar = 16 Rupees

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\(^{37}\) Unskilled labor.

\(^{38}\) Supervisor or foreman.
4.5 Finances

4.5.1 Sources of Financing by Contractors

Like owners, contractors of construction projects and suppliers of building materials must obtain investment and working capital to finance their operations. This difficulty that owners have in obtaining reasonable financing exacerbate the difficulties of contractors and manufacturers of building materials. Contractors do not proceed with construction unless they get an advance payment from the owner. The difficulties that owners have in obtaining reasonable financing exacerbate the difficulties of contractors and manufacturers of building materials. Contractors are almost universally paid in installments on the basis of work completed, a figure which is often deliberately underestimated by the client. Moreover, a portion of the payment due to the contractor is always withheld by the owner, as a guarantee against poor workmanship and hidden defects.

Banks and financial institutions do not generally finance contractors as they consider construction a risky business. Since construction in India is merely considered a trading business, and not an industry, banks do not advance loans or overdraft to contractors on the same easy terms and conditions as they do to other industries. Initially, to start the business, most contractors use their private resources, or loans from relatives (Albert, 1989). Sometimes in the business, the contractors have to depend on private lending. The interest charges are heavy, and many contractors pay 2 to 5% interest per month (Albert, 1989). To quote one of the contractors (Anand Shetty, 1989), "The job of a contractor is a big gamble, there are times when one makes a profit of Rs. 100-200 thousand, and sometimes your profit is only Rs. 25,000. There is no steady or guaranteed income."

39 Mr. Anand Shetty was the only contractor who dealt with the formal banking institutions. Currently he has a bank overdraft of Rs. 110 thousand. The other contractors and suppliers did not deal with the bank because of the large amount of paperwork.

40 Mr. Albert's initial investment of Rs. 40 thousand was from his personal savings.
There is no arrangement to supply building materials and construction equipment on credit. Instead, there is an insistence by the building material supplier for advance payments on the materials. This puts a great financial strain on the contractor. This is because the owners of small scale firms (unregistered) do not receive institutional aid or financing. The building material suppliers in turn often rely on personal savings and loans from relatives or private money lenders (Ananth, Anjanappa, 1989).\footnote{Mr. Vijay Ananth, Sceel Fabricator, got a loan of Rs. 60 thousand from his father before setting up his business. Whereas Mr. Anjanappa (Rs. two thousand) financed his venture from his personal savings.} If the materials are bought by the contractor, he has to buy them when they are available, and this involves a fairly large investment.

The contractor has to pay his sub-contractors regularly. The contractor is often asked to do extra work and sometimes does not get paid for it. One of the contractors interviewed said that the major financial constraint he faced was when he under-quoted the price of an item and had to undertake the job for that price. As a result, he had to pay the balance amount from his own pocket (Anand Shetty, 1989). Large contractor firms often have an adequate sum of money as floating cash. It is often difficult for small contractors to compete for big jobs because of the expenses involved in terms of earnest deposit, insurance, deposit for due performance, etc.

\section*{4.5.2 Private Sources of Financing by Owners}

India is an example of an undeveloped housing finance system, operating in a centralized environment of close government control and relying on the capital markets rather than directly on the public for its resources. At present the greatest proportion of housing financial needs are met through informal arrangements (Renaud, 1984). In 1982, in the case of households with income not exceeding Rs. 350, the social group designated as Economically Weaker Sections, the sources of down payment was found to be (Mulkh Raj, 1982):

\begin{itemize}
  \item Own savings \hspace{2cm} 43\%
  \item Loans from family and friends \hspace{1cm} 40\%
\end{itemize}
Loans from banks 6%
Withdrawal from provident fund 4%
Gifts 3%
Mortgage or sale of property 4%

Most people have to borrow money to finance their house. In case of unauthorized housing, the fact that the money will be used for building on illegal land makes it impossible to find institutionalized lenders. Lenders are also often reluctant to provide loans to people who do not have a stable economy. The lower income groups have practically no access to institutional finance. The agencies that construct houses are not always affordable by the targeted group.

The sources of financing in the private sector are:

- Most families use their personal savings to finance their house.
- Loans are taken from friends and relatives in a special kind of arrangement. Borrowing money from relatives or friends is not coupled with any specific conditions. There is no installment schedule, and payment of interest on the loan is unacceptable.
- The loans obtained from employers are contracted on a more businesslike basis. The borrowers receive the loan in advance. The employer deducts a fixed amount from the monthly income until the loan has been completely redeemed. In most cases, the loan does not bear any interest.
- The chit-fund is a rotary credit organization, popular amongst low income groups. A chit-fund scheme consists of members who are either related to each other, or are known to each other. For example, originally belonging to the same village, or living in the same neighborhood for a long time. Each member pays an equal amount of money on previously fixed dates. The members agree upon the amount and the period when starting the chit-fund. During each period, the input of all members is to be paid to one of the chit-fund members. The duration of this scheme is as long as the number of the members multiplied by the length of each period. If, for instance, there are 10 members contributing to the chit-fund each month, the duration of the chit fund is 10 months.
The output of a chit fund is equal to the number of members multiplied the amount of money agreed upon. If, for instance, 10 members contribute Rs. 10 each month, the output to one of the members is Rs. 100 per month. All chit-fund members obtain their share. Some get the output in the beginning of the committee's existence, others later on. Most of the times the lucky member is determined by drawing of lots. In some cases the one who needs the money most urgently that particular time, receives the output.

- Some of the owners sell a part of their property, or jewelry to be able to invest in housing.
- In some cases the owners go to private money lenders for financing. Their rate of interest is very high, ranging from 5-8% a month (in some cases it is even higher). The owners have to deposit some object of value with the money lender as a security deposit.

It is evident that the bulk of the housing for all income groups, particularly the poor, is supplied by private initiative in a variety of ways. Very often, individual households manage their own finances and achieve the best possible standards of living in accordance with their own needs and preferences. This is even so in cities like Bangalore, where the public agencies like the BDA, and the Bangalore City Corporation, have monopolistic control over the land, finance and the power to enforce unrealistic building standards.

The demand for housing in the private sector is met through the efforts of many small scale builders, both at the formal as well as the informal levels. There is, however, no official data available on the number, size and distribution of construction firms in Bangalore. Although the informal sector plays an important role in providing housing services to the people, the government does not address their needs while formulating housing policy. The major acceleration or improvement needed in this sector is neither in the provision of natural goods nor in the cash aid, but access to information providing the ability to restructure materials, energy, tools and organizational methods to create new options and alternatives.
5.0 Conclusions

From the empirical study, it was evident that the private-formal and the private-informal sectors are more intricately interrelated than suggested by the conventional distinction. As shown by our findings:

- Houses with building permits are most often built by "informal" builders by drawing materials and labor from informal sources. In many cases, informal builders are hired by registered architects to build formal houses that comply with the "legal" standards in every respect.

- The laborers are employed by contractors in both the private-formal as well as the private-informal sector to perform similar tasks for similar wages.

- A given building material supplier very often caters to the formal as well as the informal markets. The informal sector does not rely solely on materials from the informal sector, and the formal sector obtains materials from the informal sector.

- There are several cases where informal housing units are built on top of formal units. Since the unit already has infrastructure connections such as water supply, sewage and electricity, it is easy to build another unit on top of the existing one without obtaining a building permit.

In spite of the close relationship between the private-formal and the private-informal, official housing statistics in India classify building construction by the private sector as the "number of
building permits issued,” and the “number of completion certificates issued.” This paper questions the distinction made between the private-formal and the private-informal sectors. The demand for housing is met through the efforts of many small scale builders both at the formal as well as the informal levels. Since the two sectors share so many characteristics in common, it seems incomplete to formulate housing policies by ignoring the role of the “informal” sector.

Although the “informal” sector plays a substantial role in housing supply in India, the government has not addressed the needs of this sector while formulating housing policies. The arbitrary classification of these two sectors in policy making is seen in the following cases.

- Since “informal” units lack building permits, they have no access to formal financing. The only source of financing is through informal efforts.
- Water and sewage connections are restricted to “formal units.” Yet electricity is provided to all units that pay a deposit.
- Informal builders/owners have no access to subsidized materials or to institutional financing.

It is important for the government to recognize the potential contribution of the small scale firms both at the formal as well as the informal sectors. The government needs to provide appropriate tools and improve the existing institution delivery systems, making it more attractive and conducive for the private sector, both its formal as well as its informal components. To understand the nature and scope of the private sector, housing agencies should compile data on the private sector which includes the number of houses, their quality, the size of the houses, means of acquiring land, the modes of development, types of building materials used, types of builders employed, means of financing, etc. This type of data will help re-evaluate existing housing policies leading to:

- More appropriate Building Standards and code: Most minimum standards are set by “middle class” officials. These standards tend to be very high and beyond the reach of the low income groups. The needs of the poor are not taken in these policies. For example, plot sizes that are developed and allocated by the BDA are larger than what the poor require. In the case of subdivisions, the width of the road prescribed in the by-laws are far wider than what is required.
Moreover, the by-laws specifying that the residential houses need to be detached, with prescribed front, rear and side set-backs, are expensive and end up being constraints in the construction of low income houses.

For the building standards to become more relevant, different frame-works or levels of regulations for each classification of houses need to be formulated. Relevant performance standards would not only encourage the use of local materials, but will also reduce the design requirements to levels appropriate for each type of construction. Also needed are the following:

- **Effective financial delivery systems:** The principal barriers for entry for the owner/builder or small scale construction firms is the access to credit, and the need for liquidity to meet the wage payments. The formal agencies find it easier to give large amounts of money to well-defined recipients where the resources and operations can be easily determined, than to give small amounts of money to great many recipients whose operations are "hard to monitor." There is a need to inform small scale builders how to approach a bank, and there is a strong need to reduce the paperwork necessary to apply for a loan. At the same time the banks have to come up with schemes that are reasonable in terms of rate of interest and pay back period. Banks can also offer mortgages on machinery rather than money to buy it outright, since its capital would remain in the property of the bank during the firm start-up period.

The urban poor need small amounts of money for repairs and upgrading of their homes. There is an urgent need to develop innovative banking systems to cater to all classes of people. For example, devising community-based loans would help small subdivisions a great deal.

- **An efficient regulatory framework:** Chaotic administration situation has resulted in the ever expanding number of formal housing agencies. There is a superfluity of agencies in response to the narrowly defined housing needs. These have resulted in cumbersome procedures, absence of inter-agency cooperation, complicated and ambitious regulations and codes and the lack of enforcement mechanisms.
Tedious procedures for obtaining building permits, acquisition of land, allocation of sites, etc., need to be evaluated. Decentralizing the registration of sites (at the village panchayat level) for subdivisions at the city's periphery could be a feasible solution. The BDA needs to adapt direct negotiations with parties for speedy distribution of sites.

In conclusion, the promotion of small-scale firms to meet the local needs in an economically viable and self-reliant manner, through decentralized production, probably holds the greatest potential for the provision of shelter to a large segment of the population.
Bibliography


Bor Walter, "Planning and Development in Developing Countries", *Ekistics*, 292, pp. 28-31, Jan-Feb 1982.


Hardoy and Satterwaite, Shelter Need and Response, John Wiiey and Sons., Great Britain, 1984.


Robben, Stuijjenberg, India’s Urban Housing Crisis, Third World Planning Review, Vol. 8, # 4, 1986.


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Appendices

Appendix I - Questionnaire

This questionnaire has been adapted from the study done by Abt Associates, Dames and Moore and the Arab Republic of Egypt, General Organization for Housing, Planning and Building (Abt Associates, 1982). The contractors, suppliers, and officials were asked the following questions. The government officials in response to the informal housing, gave their views on the subject and identified relevant policy issues.

1. Decision to enter the construction field.

- When did he start the business?
- How did he start? on what scale? (description of how his business evolved) ?
- Did he have a partner? Other family members involved?
- Skills needed to enter into the business?
- How did he acquire those skills?
- Occupational history.
• Length of residence in area.
• Registered? By whom? Are most businesses of this type in this area registered? If not, why?
• Members of cooperative societies, or other association of business of this type?

2. Scope of Operation.

• Geographical scope (in relation to his place of residence).
• Types of construction he generally undertakes.
• Aspects of construction process he deals with.
• Means of recruiting customers (through relatives, friends, and supplier, previous customers).
• General profile of his typical customer.
• What are the major problems he faces in his business?
• Is construction his only business? What proportion is informal construction?
• What are his other businesses?
• Percentage of total income each generates?
• Has he thought of ever thought of getting out of the construction business?
• How long does he expect to stay in it?
• Does he know (or guess) the failure rate among contractors?


• What are the basic types used in this area?
• Describe the design process; identify differences between formal and informal sector.
• Who designs most of the houses in this area?
• What are the problems of owner-designed buildings?
• What are design problems of architect-designed buildings?
• What are houses designed in this manner?
• How much do architects charge?

- How does he estimate cost?
- Average construction cost per sq. ft?
- How have these changed over the last three years?
- Average cost of a single job? How many square feet?
- How does he decide on the building materials? Does he follow the owner-builder choice or does he suggest his choice of materials?
- How long does negotiation take place?
- Description of the initial meeting and subsequent steps?
- Length of time between initial contact and start of construction process?
- Are customers friends or neighbors?
- What proportion of houses in this area are built entirely based on self-help?
- What proportion of housing for the low-income group?
- What proportion are built partially based on self-help?
- Which parts of homes are usually constructed using self-help?
- How long does it typically take to construct a habitable unit?
- In what areas of the city is most informal building going today?
- Why are many buildings in the area not properly maintained?
- Differences in quality of construction, degree of maintenance between formal and informal sector?
- Government's action towards informal construction.

5. Supply of Building Materials.

- Where does he get the building materials?
- Prices of building materials?
- Percentage he gets in each price category?
- Which ones are profitable to him?
• Does he use the same suppliers or does he shop around for the best bargain?
• Are building materials easily available?
• Which are scarce?
• How does he protect himself against price escalation?
• Does he stockpile?
• Where does he store building materials?


• How many employees? Skilled or unskilled? Permanent or temporary?
• Sources of labor?
• Daily rate of each category?
• Does he keep permanent labor force?
• Where does he get additional labor?
• Types of contracts with workers?
• Where do most of the workers come from? Are they local?
• What happens in case of conflict with his workers?
• Methods of worker's supervision?
• Are there any shortages of certain types of workmen? Why?
• What should the government do?

7. Infrastructure (Physical and Social).

• What proportion of informal houses that you build have electricity, water, sewerage hook up? Who does the hook up?
• How is infrastructure provided to new communities?
• How are community facilities and support services provided to new community?

8. Finance and Investment.
• Does he supply materials on credit?
• What are the term of credit in those case?
• How do suppliers guarantee payment?
• How does he finance bigger jobs?
• If he needs additional capital? How does he obtain it?
• Does he deal with banks or other formal lending institutions? including cooperatives?
• What are the major obstacles in dealing with formal institutions?
• Does he advise his customers regarding where to obtain building loans?
• Does he own buildings? What kind? Did he build them?
• Does he own land purchased for subdivision and housing development?
• Is he planning to expand his business?
• Does he extend credit to his customers?

9. Legal issues

• Does he think average customer is aware of most of building regulations?
• Does he think the majority of the people he deals with comply with these regulations?
• Which regulations are commonly violated? Why?
• What proportion of his customers build without a permit? Why?
• Does that involve any risk for the contractor?
• Do most informal builders build on agricultural land? Do they have a title usually?
• How are land and building regulations enforces?
• Have any informal houses has been demolished by the government in this area?

10. Contractor/Supplier Characteristics

• Age
• Marital status
• Number and age of children, their occupation
• How much capital did his initial business require?
• What is his margin of profit?

Appendix II - Public Sector Agencies: Land supply, and Financing

Urban land Policy

Due to the shortage of urban land, the government set up urban development authorities with a mandate to acquire, develop and sell large areas of land and to facilitate access of the lower income groups to the land market. In Bangalore, land can be obtained through the following institutions or channels:

• Bangalore Development Authority (legal subdivision),
• Housing Societies, developers (legal subdivision),
• Informal subdivisions (illegal subdivision).

The process of illegal subdivision of land was discussed in Chapter 4. This section deals with the supply of land through BDA and through Housing societies.
Bangalore Development Authority

Metropolitan development agencies are specially constituted bodies to oversee metropolitan management, program implementation, planning, land acquisition and development. The chief functions of the BDA are:

1. Land acquisition, and developmental schemes
2. Construction of houses for special income groups, and tenements for slums.
3. Control growth and enforce the building code, and implement the comprehensive development plan.

Land Acquisition by BDA

The BDA has a separate land acquisition department, headed by a special deputy commissioner, for acquiring the land required for the implementation of the schemes. Till the end of March 1985, about 14,062 acres of land have been acquired by the Authority, and its predecessor the City Improvement Trust Board (CITB). There are 31 subdivisions under progress since 1971, sanctioned by the government at a total cost of Rs. 23.75 million.

The total amount of land acquired by the BDA and CITB are:

<table>
<thead>
<tr>
<th>Land Acquisition</th>
<th>Acres</th>
<th>No. of Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Acquired by CITB</td>
<td>8430</td>
<td>68,300</td>
</tr>
<tr>
<td>Land Acquired by BDA</td>
<td>5632</td>
<td>34,000</td>
</tr>
<tr>
<td>Total</td>
<td>14062</td>
<td>102,300</td>
</tr>
</tbody>
</table>


*42 as of January 1976, when the BDA was constituted.
43 till March 1985.*
The procedure for allotment of sites is prescribed in the Bangalore Development Authority Act of 1976. The procedure involves:

1. BDA draws up a detailed development scheme for the Bangalore Metropolitan Area. The particulars of the development scheme, which include,\(^{44}\)
   - physical limits of the area.
   - laying and re-laying out all land or any land included in the construction or reconstruction of buildings and formation of streets.
   - drainage, water supply, and electricity.

2. When the development scheme is completed, the authority draws up a notification stating the facts of the scheme, along with a map of the area, and a statement specifying the land which is proposed to be acquired.

3. During the next thirty days, following the publication of the notification, the authority issues a notice to every person on the assessment list, or in the land revenue register. This allows the persons to show cause within thirty days of the date of notice, why such acquisition should not be made. After reviewing the objections, the authority declares the land to be required for the public purpose. Subject to provisions of the Land Acquisition Act of 1984, the authorities can enter into an agreement with the owner of any land, to acquire his/her property.

4. Allotment of Sites: Whenever the authority forms an extension, it offers sites for allotment to persons eligible for the site under the rules. The sites are generally divided into:
   - 50% - 60% for Economically Weaker Section (EWS) and the Low Income Group (LIG) at 50% subsidized costs.
   - 20-25% for the Middle income Group (MIG) group.
   - 5-10% for the High Income Groups (HIG) group


\(^{44}\) As prescribed by The Bangalore Development Authority Act, 1976, along with the Bangalore Development Authority (allotment of sites) Rules, 1982.
5. The site area allotted to the different income groups are generally as follows (Govind Raju, 1989):

<table>
<thead>
<tr>
<th>Income group</th>
<th>Monthly Inc. in Rs.</th>
<th>Site Dimensions in feet</th>
<th>Site Area in sft.</th>
<th>Cost of site 45 in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWS</td>
<td>700</td>
<td>30 x 40</td>
<td>1,200</td>
<td>7,500</td>
</tr>
<tr>
<td>LIG</td>
<td>(700-1,500)</td>
<td>35 x 50</td>
<td>1,750</td>
<td>10,000</td>
</tr>
<tr>
<td>MIG</td>
<td>(1501-2500)</td>
<td>60 x 40</td>
<td>2,400</td>
<td>25,000</td>
</tr>
<tr>
<td>HIG</td>
<td>(2501 and above)</td>
<td>60 x 90</td>
<td>5,400</td>
<td>50,000</td>
</tr>
</tbody>
</table>

6. The lots are only allotted to people who are residing in Bangalore for more than ten years. The ownership of the site remains with the Bangalore Development Authority for ten years, and upon this time the lot is then handed to the owner. It is mandatory for the allottee to construct the house within two years of the date of execution of the agreement.

**Housing Societies**

Housing societies or cooperatives in Bangalore, are formed under the Karnataka Cooperative Society Act of 1959. Cooperatives can be formed by members who either live within the same jurisdiction, or by members who work for the same organization. The land proposed by them for acquisition, is situated not only within the schemes of BDA, but also in the outlying areas of the developed layouts. To date, the BDA has approved around 128 housing cooperatives since its constitution in 1976. The development works of many of these layouts have been executed by the BDA, and in some cases the societies who are equipped with qualified engineers are permitted to work under the BDA supervision.

45 as per 1989 BDA land costs.
Since the societies cater to the needs of the middle class, there are not many cooperatives for the low-income groups. These societies are served by 19 Apex organizations at the state level. In March 1988, due to some discrepancies which occurred in the allotment of land to the societies, an enquiry was conducted based on the report written by G.V.K. Rao. This report highlighted the irregularities in the land deals, conducted by the officials under the Janata Government. The main allegations referred in the report are:

- **Procedural irregularities in admission of members.** In many cases the committees of management did not consider the applications of membership and there are no proper resolutions specifying the persons who are admitted as members of the society. Neither the applications nor the share ledgers disclose the date on which the committee admitted them as members.

- **Admission of ineligible persons as members.** Most of these persons reside outside the jurisdiction of the society.

- **Admission of associate members without necessary provisions in the bylaws.** Many societies have allotted sites to associate members in spite of the specific mention that the society can only form layouts and distribute sites to their members. The societies have also collected site deposits from the associate members.

- **Acquisition of land outside the society’s jurisdiction.** There are many societies who have been acquiring lands outside their jurisdiction, with clearance from the Government.

- **Entering into agreements with landlords and agents indiscriminately.** The practice of engaging a middleman appears to be the bane of the societies. Most of the societies have entered into agreements with the agents who are not registered. The societies have advanced huge sums of money to these middlemen (to help the society to acquire land) without any bank guarantee or security (most payments were made in cash bearer checks). Some agents have landed these societies with overlapping claims on the land to be acquired.

- **Since the Karnataka Reforms Act does not permit societies to acquire agricultural land, the societies have entered into agreements with landlords, by paying the landlords full consideration (in some cases), and obtained general power of attorney (the society can still not hold**
land under power of attorney). These landlords have in turn gone back and entered into an agreement with other parties or societies.

Based on the above allegations, the BDA has not approved any layouts by societies since March 1988, pending the investigation.

Formal Financial Sources

The capital markets in India operate under a system of credit allocation, and tight regulations by the Reserve Bank of India. The housing finance system consists of two institutions at the national level. The first, HUDCO, is a public agency serving the lower income groups drawing long-term resources essentially from two nationalized insurance companies as well as benefitting from some budgetary inputs. The second, the Housing Development Finance Corporation (HDFC) serves a population of income higher than the groups served by HUDCO. It is mobilizing its resources from the regulated capital markets and is confronted with a decision whether to move into the direct collection of deposits from households (Renaud, 1984).

Contribution by HUDCO to Urban Needs

HUDCO, the national techno-financial institution has contributed significantly to increase the stock in Karnataka and has so far extended its assistance to 340 projects with HUDCO loan assistance of Rs. 420 thousand, in all 19 districts of Karnataka. The assistance is made available to the Karnataka Housing Board, the Karnataka Slum Clearance Board, the BDA, and the City Corporation of Bangalore. In addition, HUDCO’s assistance is made available to the various agencies at affordable terms depending upon the beneficiaries and the target groups.
The rates of interests are the lowest for the economically weaker sections, and increases depending upon the schemes benefitting the lower income and the middle income group and is the highest for the higher income group (ranging from 5% to 12 1/2%). The repayment period is most liberal for economically weaker section and is least for the higher income group (ranging from 22 to 15 years). The extent of financial assistance tapers from 100 to 60% depending upon the cost of the house as applicable to the economically weaker section and to the higher income group.

Since HUDCO's housing schemes are linked with the beneficiaries target groups with different income levels, the cost of houses has to be necessarily fixed at ceiling cost level so that the monthly repayment instalments are within the affordable repaying capacity of the beneficiaries. At the same time, it is ensured that the housing designs are acceptable and provides for growing house with incremental approach in space and finish.

Commercial Banks

In 1981, the Reserve Bank of India earmarked 150 million rupees for the entire banking system by way of housing finance and directed individual banks to provide up to 0.5% of their total advance to this sector under the following heads:

- Residential houses constructed by public housing agencies with priority to the economically weaker sections.
- Construction for improvement of slums.
- Physical infrastructure like education, shopping, health and other institutions necessary for the above.
- Repair and maintenance.

The rates of interest range from 4 to 15% with repayment periods less than 10 years. However, in actual practice, direct finance has never exceeded 16% of the total allocation.


HDFC

The Housing Development and Finance Corporation Limited, established under the Companies Act of 1956, has been operating a scheme for home loans for individuals.

The home loans for individuals are available mainly for new residential houses anywhere in India. They may be granted for purchase or construction of an independent house, or a self-contained flat. The borrower can be a member of a cooperative society, an apartment ownership association, or he may plan for the construction of a house individually. It also gives loans to companies for construction or purchase of new dwelling units for their employees or groups of employees under an arrangement with a company where it is prepared to guarantee the loans.

In 1985, HDFC brought out a scheme called the New Home Saving Plan. Under this, the person desirous of availing himself of a loan for purchase or construction of a house or flat has to save a minimum amount accumulated through monthly savings. After he accumulates a certain minimum amount, he would be eligible for a loan. The rate of interest paid by the HDFC on the persons savings as well as the rate of interest charged by the HDFC on the loans are much lower when compared to the prevailing rate of interest for housing loans.

The loan amount is determined by taking into account the repayment capacity of the borrower. The HDFC grants loans up to Rs. 250 thousand. The amount can cover up to 85% of the cost of the property, including the cost of land. The HDFC charges interest at rates varying from 12.5% to 14.5% per annum, depending on the amount of loan. The maximum repayment period of HDFC loans is 20 years or till the borrower reaches the age of retirement. The HDFC charges a non-refundable processing fee equal to 0.8% of the loan amount. The security for the loan consists of the first mortgage of the property to be financed. In the case of HDFC’s home loan, it is almost meaningless to stipulate lower rates of interest for loans less than Rs. 50,000. In most cases, the operative interest rate would be 14 to 14.5%. This rate is too high to encourage housing.
Life Insurance Corporation

The Life Insurance and General Insurance Corporations of India are two primary sources of funds for the housing sector. LIC has advanced about Rs. 16,000 million, and GIC around Rs. 2,700 million rupees till mid 1984, a major portion by the way of indirect finance through HUDCO, housing boards, loans to state governments, Apex Cooperative and housing finance societies. The LIC also introduced “Own your own apartment” in April, 1973 for its policy holders in Bangalore, and in 1988, “Bima Nivas Yojana” was introduced. The minimum loan admissible under this scheme is Rs. 25,000 and the maximum Rs. 200,000. The amount of loan to which a borrower will be eligible can vary from 60% to 75% of the other value of the property, and only the balance has to be invested by the borrower.

The maximum repayment period is 20 years, or up to the date of superannuation or the attainment of 60 years of age. The mode of repayment is either monthly in equated monthly instalments or through adjustment of proceeds of life insurance policies. This means that if the borrower is not in a position to repay the loan equated monthly instalments, he needs to pay monthly on the interest, and as and when his life insurance policies mature, the entire maturity value of the policies will be adjusted towards the repayment of the principal. Apart from the very high interest rate (12-15% per annum) which makes this scheme only marginally useful, the LIC has also shown a flair for stipulating non-essential conditions which may not help it in better recovery, but promises to make things extremely difficult for the potential borrower. The borrower needs to deposit with the LIC all fixed deposit receipts with banks, government securities, life insurance policies, over and above those required as security for the loan, bank guarantee for repayment, and mortgage of other immovable properties.