

Housing Development in Nigeria

by Lata Chatterjee

BEST AVAILABLE COPY

**Occasional
Paper Series**

Winter 1981

**AGENCY
FOR
INTERNATIONAL
DEVELOPMENT**



OFFICE OF HOUSING

HOUSING DEVELOPMENT IN NIGERIA

by

Lata Chatterjee

**Department of Geography
Boston University**

Occasional Paper Series 1981

Abstract

This research investigates the role of housing in the national economy of Nigeria. The multiple roles of housing in the economy are first investigated from a theoretical perspective and then from actual case studies of the construction and housing sectors. A review of Nigerian housing expenditures, labor input to housing and capital formation trends show that housing policy can be made more effective in national development and reach more low-income families than it currently does.

This research concludes that there are two major policy components that can address the housing affordability problem in Nigeria. One group of policies affects the organizational framework. Housing prices can be reduced by the appropriate choice of standards, better urban land management, improved efficiency in the building sector, and assistance to informal sector housing. A second group of policies can increase affordability through housing finance.

BEST AVAILABLE COPY

Acknowledgements

This study had its origins in a larger research project on urban housing policy in Nigeria in which I participated as a team member. This project was conducted for the Central Planning Office, Federal Ministry of Economic Affairs, Government of Nigeria as input into their Fourth Development Plan. My own role in this overall study was specifically to analyze the role of housing in the Nigerian national economy, develop an analytical model for identifying the volume and types of housing affordable by different income classes in the urban areas, and to assess the impact of finance on the acquisition of a long-term asset such as housing.

I would like to take this opportunity to express my gratitude to the other participants in the study, particularly to Professor T.R. Lakshmanan of Boston University and Dr. Andrew Lemer of Planning Research Corporation (PRC), Washington, D.C. Both were very helpful in a variety of ways, particularly through their skeptical probings throughout the study. In addition, I thank other colleagues, Steve Lockwood, Jerry Baiman, and Walt Hansen of PRC for their insightful comments and Probir Roy and R. Ravichandran for their computational assistance. Responsibility for the errors that remain is, however, entirely my own.

Research into the strategy for meeting urban housing needs of Nigeria would not have been possible without the cooperation of numerous officials of the Nigerian government - federal and state - who generously gave of their time and experience. This monograph is an expression of my appreciation to all these individuals.

BEST AVAILABLE COPY

TABLE OF CONTENTS

Introduction 1
Role of Housing in the National Economy: A Review 2
 The Theoretical Debate in Perspective 2
 Multiple Roles of Housing In The Economy 6
 Housing as a Consumption Good 6
 Housing and Employment and Income Generation 8
 Housing and Capital Formation 10
 The Macroeconomic Role of Housing 13
Construction and Housing in Nigeria: Patterns and Policy Issues . 14
 Recent Patterns and Growth Trends in Construction 14
 Housing Patterns and the Affordability Problems 19
 The Policy Framework 26
Bibliography 31

BEST AVAILABLE COPY

Housing is a complex product that is crucial for national development in terms of both economy and welfare. In macroeconomics housing is an important source of national capital formation, of employment generation, and income production. Residential investment ranges from between 15% and 25% of gross fixed capital formation (GFCF) in most countries. Investment in housing at such significant levels stimulates the demand for labor in the construction and building materials industries and thus affects income production in the economy. In microeconomic terms, housing is a significant component of household consumption and savings. In developing countries expenditure on housing, on the average, accounts for between one-seventh and one-fifth of all consumer expenditures. In addition, for the majority of households, this investment is one of the primary objectives for savings.

For low-income families these welfare and economic connotations are particularly significant. Housing provides a combination of services, the first and most basic of which is the shelter offered by the dwelling space. Second, in conjunction with the services of land and utilities, the dwelling provides a variety of environmental services: water supply, sewage and solid waste disposal, energy use, and so on. Third, there is a range of locational advantages, including access to jobs, health and education facilities, and recreation areas.

These shelter, environmental, and locational services not only improve the current physical welfare of the household, they affect the group's acquisition of human capital and intergenerational social and economic mobility. Housing also permits an increase in productivity for many of the urban self-employed. In most developing countries, the home is also the workplace for a significant section of the population. For others, convenient access to employment can promote the income earning options of the different earners in the household.

Consequently, a sound approach to the formulation and implementation of housing policies will greatly promote the development of economic and social welfare of the populace, particularly of the poor, in Nigeria. A precondition to the design of such policies is understanding of the multiple roles of housing in economic development, the patterns of demand and supply, and the factors affecting the access of the poor to these services.

This monograph begins with a survey of the role of housing in the national economy. Since this has been a matter of considerable debate, the broad elements are initially reviewed. This section highlights the changes in development philosophy, particularly in its approach to the role of housing in national development planning. This is followed by an identification of the multiple roles of housing in developing countries, specifically Nigeria.

The focus of the third section is on major patterns in the scale and nature of the construction industry, especially those elements that bear not only on housing supply, but on related economic development goals such as employment generation. In the fourth part, a review of aspects of housing conditions and consumption patterns in Nigeria are provided. In this discussion the glaring gaps between income distribution (and relevant housing expenditures) and the cost of currently supplied housing is emphasized. The affordability problem is then described. In the final section, some of the key components of a housing policy framework that are necessary for addressing affordability in national development planning are explored.

BEST AVAILABLE COPY

ROLE OF HOUSING IN THE NATIONAL ECONOMY: A REVIEW

THE THEORETICAL DEBATE IN PERSPECTIVE

The role of housing in economic development has been a source of considerable debate, much of which has focused on the issue of optimal allocation of national resources to housing. Three positions in the debate can be identified. An early position advocated by economists and still influential in many countries views housing as a consumption good and therefore unworthy of much attention in development planning in view of its unfavorable capital-output ratio. A second view, favored by housing specialists, attributed a productive role - both direct and indirect - to such investment and hence called for a high priority for housing in the development agenda. While both concepts use notions of economic efficiency to justify their respective inferences, the third perspective broadens the argument beyond efficiency notions to considering housing a basic need. We review each of these perspectives in turn.

Traditionally, economists have viewed housing as a consumption capital good. Adam Smith referred to "dwellings - like clothing and household furniture - as consumption goods producing nothing." John Keynes saw housing as a pure consumption good or capital (as opposed to production capital). This attitude has continued until very recently. Investments in housing have been considered to be in direct competition with those in industry and agriculture for scarce capital resources. Industry and agriculture are productive activities that have lower capital-output ratios than housing, thus creating more national income for the same level of investment. Conventional housing is expensive, invariably costing several times

the worker's annual income, and has a high capital-output ratio. It has been estimated that housing needed \$8.20 of investment per dollar of output (Tinbergen 1967). It is not surprising therefore that among development economists concerned with the difficulties of capital formation in low-income economies, housing emerged as a relatively suboptimal form of investment. The prevalent view was that some level of investment could be justified on grounds of health and safety, but in general, increases in housing investment and quality should follow growth in per capita real income derived from productivity increases in agriculture and industry.

A second view, held by advocates of housing, or "the housers", may be articulated by a contrasting position (Burnham 1955; Abrams 1964; Burns & Grebler 1976). The "housers" advocated a much higher level of housing investment than the economists, justifying it on both social and economic grounds. The negative characteristics attributed to poor housing included detrimental effects on child socialization practices, poor attitudes toward education, low achievement motivation, and social deviance and criminal behavior. Consequently, improved housing could generate beneficial impact in fields of health, education, and social pathology. Such investment has an additional economic dimension. Residential construction has a high labor-capital ratio, thereby increasing employment with small amounts of capital. This issue of labor utilization is important in countries with rapid rural to urban migration and high unemployment rates in growing urban areas.

This attribution of additional economic and social benefits to housing led to a number of investigations of the effect of housing investment on worker productivity and welfare. The relationships were formalized into the productivity theory of housing investment developed by Burns, Klassen, and Grebler (1976). This model linked improved housing quality with higher aspirations, greater efficiency, improved social relationships, improved health, and lower absenteeism among resident workers. The productivity theory, by translating social benefits into economic benefits, advanced the claims of residential construction on national resources from a perspective of economic efficiency, and questioned the validity of the simple capital-output ratio as a device for allocating investment. The theory claimed that conventional measures of output were inadequate because indirect benefits that accrued to the economy from increases in labor productivity were unaccounted for. It sought to abolish the dichotomy between social and economic objectives of development, translating social benefits into economic ones, and in the process more completely enumerating the notion of productivity of housing investment.

Empiric assessment of the productivity model was attempted by investigating changes in health, productivity, and educational improvement and satisfaction with the environment resulting from improved housing through several controlled experiments in Korea, Venezuela, Mexico, Puerto Rico, and the United States (Burns, Mittelbach 1972; Burns, Tighe, and Healy 1970). The effects (only some of which were possible on each site) in these seven areas are

presented in Table 1. While there is a strong indication of positive finds in each locality in at least one dimension of

SITE	TYPE OF EFFECT			DEVIANT BEHAVIOR
	HEALTH	PRODUCTIVITY	EDUCATION	
Hamback, Korea	+	+	N	N
Ciudad Guayana, Venezuela	-	-	N	N
Puerto Rico	-	N	-	N
Monterey, Mexico	-	-	-	N
Zacapu, Mexico	-	+	N	N
South Dos Palos, California	+	N	-	N
Pine Ridge, South Dakota	-	N	+	+
% Significant relationships	28.6	50.0	25.0	100.0

+ Significant relationship (at 95% confidence level)

- Nonsignificant finding

N No measurement done

Source: Burns and Mittelback 1972.

Table 1. The Effects of Improved Housing

BEST AVAILABLE COPY

improvement, the overall evidence is not conclusive.

Perhaps additional case studies will settle the question (Burns and Grebler 1976), but a more relevant issue is the degree to which the economic models, including that of Grebler, Burns, and Klassen incorporate the full economic effects of housing. While their model broadens the notion of housing output to include the effects of improved worker productivity, it still omits a variety of key indirect products of housing in developing countries.

Charles Frankenhoff (1967) drew attention to many of these neglected outputs. He questioned the conventional use of rent as a principal measure (in computation of capital-output ratios) in economic analysis. This convention could be accepted if a home was

a dead end in the production process. Instead, especially in developing economies, the home is often the center for commercial activities or for production in the informal sector. It can be used for warehousing, as a shop, or for cottage industries. A significant amount of informal sector work occurs at home and housing thus provides input to the production process. Therefore the use of rent (a consumption variable) as a measure of housing output is questionable. It is somewhat akin conceptually to saying that the productivity of a factory can be measured by its rent. A house provides social and economic security, and a large component of its benefit includes intangibles that are not amenable to easy measurement. It is not surprising that attempts to incorporate these in the output measures have not been very rewarding.

The third most recent view on the appropriate role of housing derives from emergent trends in development. Increasing disillusionment with the record of growth-maximizing development has led in recent years to a call for the adoption of basic needs attainment as an additional objective. A needs-oriented strategy calls for the provision of certain minimum levels of consumption of some basic items. Basic needs, in this view, consists of two categories of consumption:

- 1) items of private consumption such as food and shelter, and
- 2) items of collective consumption such as residential and environmental services, (water and sanitation), health, transportation, and education.

Conceptually this approach is simple and has a strong political appeal. For its implementation, however, there is need for much analytical work, particularly if this concept is to be translated into appropriate standards and concrete targets for housing. This is particularly true for shelter and environmental services.

Basic needs for health and nutrition (e.g., life expectancy, calories per capita, proteins per capita) can be set on the basis of earlier scientific findings, but the concept of basic standards in housing has a more ambiguous meaning. These will vary regionally, changing with climate, availability of local building materials, social and cultural practices, and so forth. Levels are likely to be more subjectively determined, incorporating value judgements as to what constitutes minimum needs of housing, and will be related both to standards of living and cultural norms of different population groups. No studies have yet provided any definitive relationships with which to determine objective standards.

Conceptual difficulties in the use of physical standards of housing can be illustrated in the case of the Bariloche Foundation study (Herrera et al. 1974). The Bariloche model is an optimized model of the future world economy, with a bold and imaginative objective function: maximizing the meeting of basic needs in terms of health, nutrition, education, and housing in the developing

world, as the economy develops. The study set physical housing targets - 7 m² per capita in Asia and Africa and 20 m² in Latin America. A weakness of this approach is the specification of a standard that is insensitive to the variety of local conditions. A given space standard yields very different flows of shelter services in different climates with different cultural practices. Also the choice of regional or national housing consumption standards does not guarantee automatically that the needs of the poor are satisfied even if the average standards were to be met. While these standards are a valuable first statement of this concept (especially in a global study), it will be necessary to analyze consumption of housing within the framework of its distributional aspects - spatially and between different income groups, within the nation, within regions, and within local urban housing markets.

MULTIPLE ROLES OF HOUSING IN THE ECONOMY

First, housing is an investment good from which flows a number of consumer services. Second, it augments productivity of the resident labor force, as indicated earlier. Third, construction is a source of labor absorption and income generation. Fourth, housing forms an important component of capital formation. Finally, housing investment is an important component of counter-cyclical economy management.

BEST AVAILABLE COPY

Housing as a Consumption Good

Quite clearly, housing is a major component of household consumption. The proportion of expenditures devoted to housing is directly related to income level, and inversely to the price of housing. Since housing is a durable good, its consumption is not related to current, but to permanent income (expected income over a decade or so).

Demand varies with the level of income, and therefore among countries and over time. The popular notion in the last century was that housing was a "necessity" and has an income elasticity of less than one - commonly known as Schwabe's law of rent. This notion was reinforced by some time series studies of housing stock per capita for the period 1890-1950 in the United States by Grebler, Blank, and Winnick (1956) that have since proved to be underestimates. Recent

research suggests that consumption of housing varies with the level of a country's development (Lakshmanan, Chatterjee, and Kroll 1978). These authors suggest that income elasticity of housing expenditures lags in early development, increases in the period of rapidly growing industrialization and urbanization, and then begins to decline at high levels of per capita income.

Several reasons for this trend can be advanced. First, contemporary low income is inelastic because of demand and supply. In the early stages of development when incomes are low, the claims of other necessities such as food tend to be stronger. Further more, a considerable portion of housing consumption may be outside monetary and statistically measured activity and is likely to be understated. Rigidity in the supply of materials and organization of construction retards housing expansion in the urban sector.

Over time, acceleration in industrialization and urban migration lead to higher income elasticity, with both direct and indirect effects on housing demand. The direct, or income, effect stems from rising incomes. The indirect, or urban, effect operates through the stimulus to urbanization generated by industrialization. With the growth of population in selected national and regional nodes and the quickening pace of rural-urban migration there is additional demand for housing.

On the supply side, rigidities become less binding with development. The skills of the labor force and physical overhead capital improve. Supply of housing keeps pace with demand because materials and technology are largely indigenous and relatively simple, and both workers and entrepreneurs have easy entry into the industry. In this stage of increasing incomes, inflationary conditions provide a motive for accumulating assets in the form of housing as a hedge against erosion of the value of savings.

As countries become more affluent their population growth declines, rural-urban migration is attenuated, most of the physical overhead capital is in place, and many new commodities enter the consumption stream. Of the last, some commodities are substitutes for housing services (recreation vehicles, boats, etc.) some may be complementary to housing (household furnishings and equipment). On the supply side, labor in the construction sector becomes highly organized, and wages increase relative to those in the production sector. Income elasticity tends to decline because of the high level of housing consumption already achieved. Figure 1 presents the hypothesis graphically.

The somewhat analogous notion that the output of the construction sector and investment in housing vary with stages of development has been empirically investigated. Denison (1964) in his study of growth rates of the United States and eight western European countries in the period 1950-1962, found that while all countries entered the 1950s with a backlog of demand for housing, the United States demonstrated the highest consumption and investment. In the second half of the period (1955-1962), housing investment in the

European countries increased relative to that of the United States. Strassmann (1970) interpreting Kuznet's and his own empiric analysis, suggests that the construction sector follows a pattern reflecting the country's level of development.

Lakshmanan, Chatterjee, and Kroll (1978) found empiric evidence for this hypothesis in an analysis of 31 developing and developed countries (Figures 2-4).

In Nigeria, data for consumption expenditures for housing are not available as part of the national accounts description, however, housing consumption expenditures at the household level are available as part of household budget surveys (Table 2). It should be noted that housing expenditures as a proportion of total expenditures are high for low-income groups, decline, for middle-income groups, and increase again for the high-income groups. In most countries, households use a greater proportion of total expenditures for housing than in Nigeria. The possible reasons for these patterns are presented later.

BEST AVAILABLE COPY

Housing and Employment and Income Generation

Investments in housing generate demand for labor directly in the construction industry and indirectly in related industries. Direct effects stem from work opportunities in construction, and provision of infrastructure such as water supply, sewerage, roads, and power. Indirect effects derive from the impact of other industries - lumber, cement, steel - supplying the construction industry (interindustry demand). There are general multiplier effects on the rest of the economy arising from spending out of wages and profits in all these industries. Indeed, the full range of economic effects of a robust construction program could be significant. Lauchlin Currie's notion of explicit stimulation of urban house building as a device to encourage economic development and increase employment in Colombia in 1972-1974 is a case in point (Currie 1971).

The second major category of effect of investments in housing stems from the positive effect exerted by provision of shelter space on residents ability to get to work. Access to jobs is crucial, particularly for the second and third earner (in a low-income household) whose income raises the household out of poverty.

While the aggregate benefits of housing investments are salutary as described above, the incidence of benefits varies with the way investments are made. For example, it makes a difference to improved employment prospects for the poor whether investments are directed to or financed for housing them or high-income households. The more public policy favors conventionally built apartments,

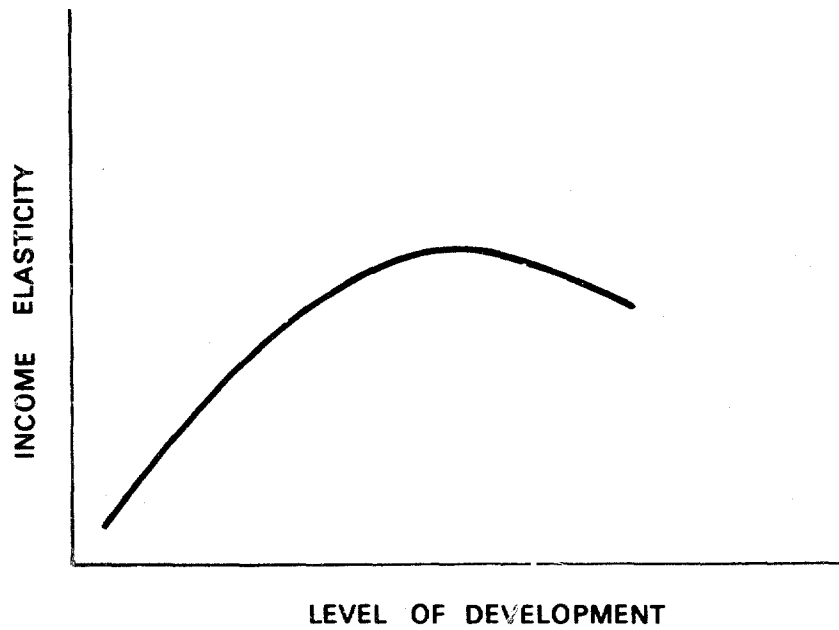


Figure 1. Changes in Household Consumption and Level of Development

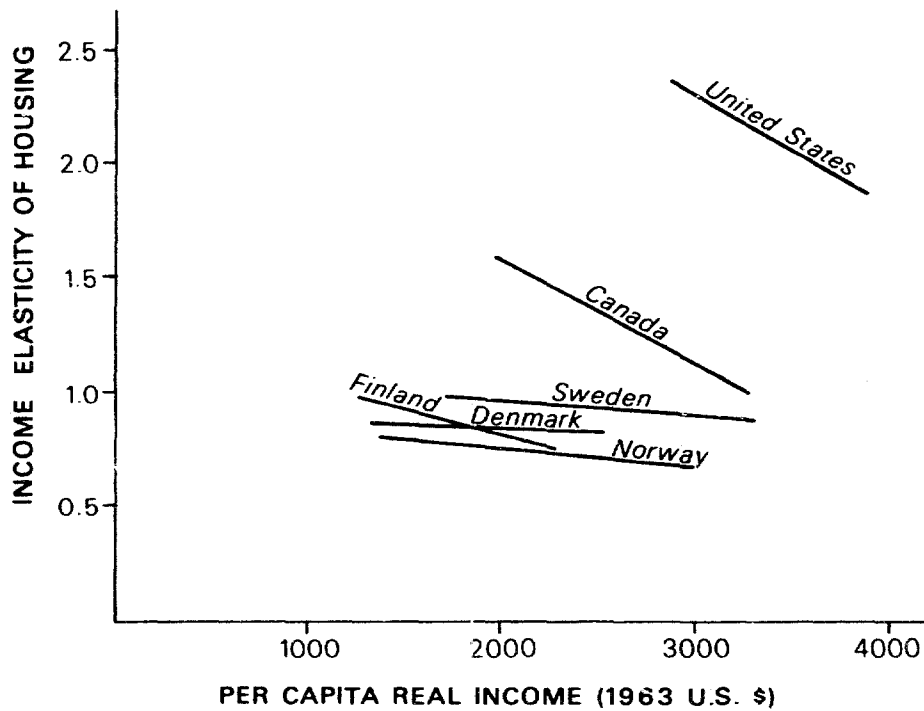


Figure 2. Most Affluent Countries and Declining Elasticities

homes, and estates - the greater will be the use of skilled and supervisory labor - the more capital (and import) intensive methods and that materials will be used in the formal building sector. By the same token, shift to self-help or low-income housing will help the informal sector with its greater labor-intensity use of indigenous techniques and small firms and operators. Strassmann's study in Mexico (1970) suggests that the cheaper the conventional housing, the greater the proportion of total construction cost that goes to labor. A more elaborate study of low-income housing in Kenya also suggests that less expensive forms of housing generate more employment (Hughes 1976). Some types of structures, roads, and sewers demand unskilled labor and complementary input of skilled labor. If such programs are undertaken rapidly, shortages of skilled labor (as in Kenya and Nigeria) will frustrate housing goals. The importance of skilled and service-skilled labor in all types of housing and related infrastructure construction is a major factor in designing employment-related housing. Training and skill acquisition of building workers will relate the elasticity of their supply to increased demand for their services, thus keeping construction prices from rising rapidly.

Employment opportunities also vary with the type of public subsidy to housing. Strassmann's studies in Colombia, Mexico, and Venezuela suggest that mortgage subsidies to lower income groups (for example, with family income less than \$2000 annually in 1970) were more conducive to employment than subsidies for upper-income groups (over \$7,000) (Strassmann 1976).

It is clear that the design of housing policies in Nigeria can be an ought to be guided, among other criteria, by their potential for employment generation - an important development objective.

Housing and Capital Formation

Housing is a capital good, that yields income in the form of rents, and often yields positive changes in asset values. As mentioned earlier, there has been concern because investments in housing represent shifts away from expanding nonhousing sectors (export earning) and cause balance of payments problems, and because the import content of housing in many African countries is substantial. Housing is not a heavy user of foreign imports, however most of the commonly used materials - cement blocks, clay blocks, and sheet roofing are produced locally. In African countries the ratio of net imports to domestic production has been falling as more and more materials such as cement are produced domestically. Only for high-income housing are imports substantial. From a long-term perspective, therefore, the production of housing - especially low-income units - does not present a problem for balance of payments.

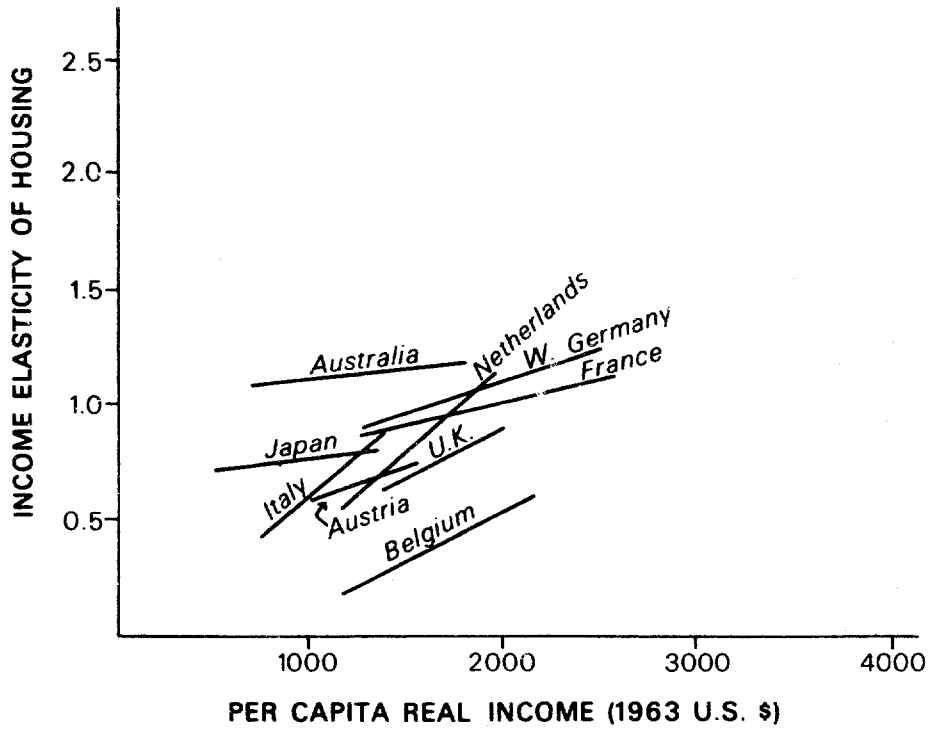


Figure 3. High Income Countries and Increasing Elasticities

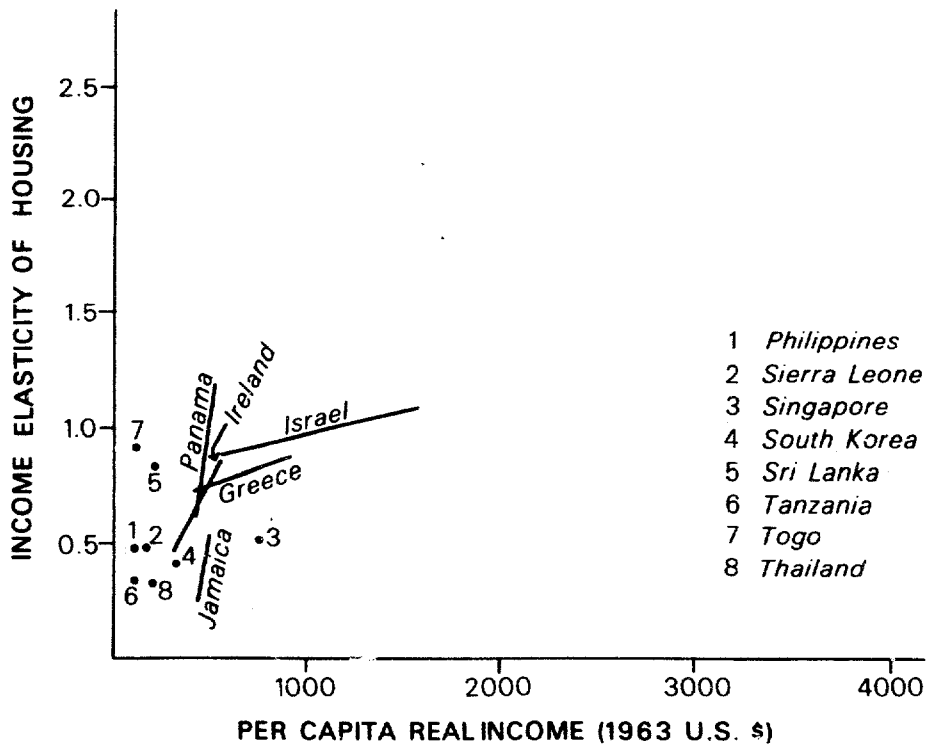


Figure 4. Middle Income Countries and Rapidly Increasing Elasticities

INCOME GROUP	WAGE EARNER			SELF EMPLOYED		
	LOW INCOME	MEDIUM INCOME	UPPER INCOME	LOW INCOME	MEDIUM INCOME	UPPER INCOME
1. Accomodation	8.0	17.6	31.5	5.5	15.3	44.7
2. Imputed Rent	2.7	3.9	7.6	4.9	8.8	15.9
3. Total Housing	10.7	21.5	39.1	10.5	24.1	60.6
4. Non-Housing	111.1	209.5	468.7	65.3	220.8	480.1
5. Total Average Expenditures	121.8	231.0	507.8	75.8	244.9	580.7

Source: Household Budget Surveys, 1975. Ministry of Finance and Economic Development.

Table 2. Housing Consumption Expenditures
In Nigeria (in Naira) 1975

Capital for investment for high income and upper middle income housing becomes available from residential financial instruments and government investments; low-income households are unable to take advantage of this formal residential finance system, and their personal savings are the source of housing investments. Contrary to the traditional Keynesian view that the poor have little or no propensity to save, experience in Nigeria suggests that they save a high proportion of their income, if such savings can be directed to hoarding investments (Chatterjee 1979).

Furthermore in developing countries with high inflation (e.g., Nigeria), investment in housing is a good hedge against diminishing value of capital assets. This provides an additional stimulant to capital formation in housing.

LABOR CATEGORY	UNSKILLED FORMAL		UNSKILLED INFORMAL		SKILLED	
	000	YEARS	000	YEARS	000	YEARS
Footpaths with lighting	226	1673			277	395
Main/secondary roads	388	2874			264	376
Tertiary roads	362	2680			282	402
Sewers	423	3133			250	356
Water supply to plots	219	1619			257	366
Communal water supply	295	2187			227	325
Plot services units	232	1718			329	470
Mud and wattle houses	50	317	297	2970	89	127
Swahili mud houses	32	240	144	1440	249	355
Timber rooms	98	727	97	971	186	265
Concrete block rooms	102	748	19	190	314	449
Murram cement rooms	107	792	21	210	340	485
Core houses	198	1466			318	454
Nairobi CC houses	209	1547			291	416
Private houses	205	1515			285	407

Source: Hughes 1976.

BEST AVAILABLE COPY

Table 3. Demand for Labor Indicated by 1 Million Spending in 1972 for Selected Items

The Macroeconomic Role of Housing

In advanced economics, investments in housing have a role in counter-cyclical economy management. In a downward trend in the business cycle, as opportunities for capital utilization in business and industry dry up, capital flows into housing, generating the

powerful stimulus to demand in the industries supplying construction. The housing investments are made to smooth out business cycles. Such a role is not important in developing countries such as Nigeria, which are less constrained by demand.

CONSTRUCTION AND HOUSING IN NIGERIA: PATTERNS AND POLICY ISSUES

The construction industry that produces housing and work places as well as elements of the infrastructure (e.g., roads, dams, schools, hospitals) is a major influence in the economics of most countries. In the affluent nations this industry is well developed, with the full range of requisite skilled manpower, capital, and organization readily available, and it provides a large stock of housing, work places, and infrastructure, often termed the built environment. In the developing countries, however, the stock of such capital in the built environment is limited. Further, the relevant manpower and capital are often in such short supply as to restrain the pace of construction and consequently, the rate of economic development. As such the industry is crucial not only in the housing sector but also of national economic development.

We attempt in this section to describe the scale, structure, and output of the construction industry in general and the housing sector in particular, and their roles in economic and social development of Nigeria as an example of a developing country.

We proceed to an analysis of the housing situation in Nigeria in light of the attributes of the industry and prevailing demands in terms of levels and distribution of household income. We identify housing affordability problems for a significant segment of the populace, and implicit policy issues.

Finally, from this discussion major areas of analytical inquiry essential to the formulation of a housing sector plan for Nigeria are presented. In this manner, this paper attempts to delineate the broad elements and principles governing the planning of the housing services consistent with economic and social development and the needs of the poor.

BEST AVAILABLE COPY

RECENT PATTERNS AND GROWTH TRENDS IN CONSTRUCTION

By most measures, the construction industry is a major economic factor in developing countries. Construction contributes an appreciable share of the gross domestic product (GDP), and a

dominant share to gross fixed capital formation (GFCF) (Table 4). Further, the industry is a significant source of employment, particularly for unskilled urban migrants (Table 5).

In general, the higher the level of income of a country, the greater the value added to and capital formation in construction, both in absolute per capita terms and in relative terms. While the contribution of construction to GDP varies from 1.2% to 6.6%, there is an overall increase in this percentage as GNP per capita increases (Figure 5).

Furthermore the developing countries with relatively higher income invest a greater proportion of their gross fixed capital formations and employ a larger portion of their labor force in construction than those with lower-income. Between 50% and 60% of GFCF is in the construction sector, both in developing and developed countries. The absolute levels of capital investments are naturally lower in the poorer countries, and greater proportions of it is new construction. In affluent economies, more of the capital formation goes to renewing older capital.

Similar patterns are evident in housing. Although residential investment rises with GDP at low to moderate income levels, it appears to taper off at high income levels. It is not the most affluent economies but the least affluent that seem most to invest in housing (Lakshmanan, Chatterjee, and Roy 1976). International comparisons suggest that housing does benefit from increases in income over time, but not in proportion to other goods and services at the highest income levels (Grebler 1973).

The level of employment in construction in relation to the total labor force ranges from less than 1% to 7%, generally rising with income levels. The labor intensity of construction investment is often higher in the developing countries so that it is a source of employment, particularly for semiskilled and unskilled workers. International Labor Organization studies suggest that the occupational group comprised of craftsmen, production workers, and laborers that normally accounts for only 30% to 40% of the total labor force, accounts for only 57% to 80% of the construction labor force (Edmonds 1979).

What is noteworthy, however, is that in spite of the fact the developing economies have a labor surplus, wages, equipment depreciation, operation costs, and so on as proportions of total value added in construction do not differ very appreciably between developed and developing countries. In other words, the technologies used in both classes of countries are not dissimilar in spite of the difference in the labor force.

In Nigeria, the construction industry contributes to gross national product more than the typical developing countries at its per capita income level (Table 6). Over a 16 year period, building and construction have never contributed less than 4.29%, and have contributed as much as 7.6% to GDP. Indeed, in the 1970s this

GNP PER CAPITA \$	NO. OF COUNTRIES	VA PER CAPITA \$	VA AS % OF GDP	GFCF PER CAPITA \$	INVESTMENT PER WORKPLACE. \$	PERSONS EMPLOYED PER 1000 POPULATION
(1)	(2)	(3)	(4)	(5)	(6)	(7)
300	30	6.1	3.95	16.4	2930	4.9
300-499	17	22.0	5.64	40.6	4094	6.5
500-999	18	45.9	5.32	62.0		14.3
1000-1999	9	77.6	5.01	161.0	6980	23.3
2000+	23	263.2	6.30	552.0	18584	28.0

VA = value added in construction

GFCF^c = gross fixed capital formation in construction.

Sources: United Nations: Yearbook of Construction Statistics 1966-1975 (New York, 1977); idem: Compendium of Housing Statistics 1972-74 (New York, 1976); idem: Statistical Yearbook 1975 (New York, 1976); idem: Yearbook of National Accounts Statistics 1976 (New York 1977); and World Bank: World Bank Atlas (Washington, 1975). (After Edmonds 1979)

Table 4. A Comparison of the Construction Industry in Various Countries (approximately 1974)

BEST AVAILABLE COPY

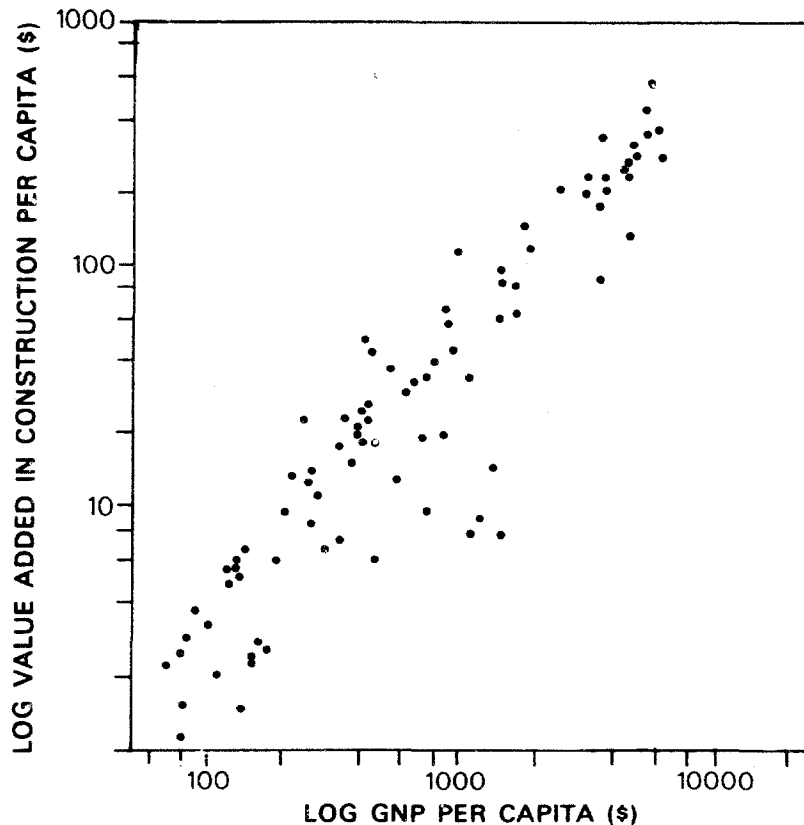


Figure 5. Value Added in Construction and GNP per Capita, 1974

sector's contribution averaged 6.5%, which is a higher proportion for the average developing country at its income level (Table 4).

The proportion of GDP formed by value added in construction has been growing over the last decade and a half. In the period 1970-1971 and 1977-1978, GDP in Nigeria grew by 284% (in current prices). In the same period, value added in construction rose by 394%. Thus the industry grew 28% faster than GDP in the 1970s.

Capital formation in the economy in Nigeria is also speeding up comparatively (Table 7). In the last half decade preceding 1977-1978, gross fixed capital formation has been in excess of 14.6% and increasing progressively to 34.6% at the end of the period. In constant Naira, the GDP increased in the period 1973-1974 to 1977-1978 by 27%, while GFCF exploded by 200%. These are very high proportions of capital investment for any country - developing or developed.

The composition of the gross fixed capital formation (GFCF) in Nigeria is instructive (Table 8). Building and construction dominate capital formation there and in other developing countries. In the period 1969-1970 to 1975-1976, 50% to 60% of GFCF went to building and construction. In two subsequent years this proportion has sharply fallen to 46% in 1977-1978. It should be noted that proportions of GFCF going to machinery and transport equipment has been generally growing in the period. In the 1970s (1970-1971, 1977-1978), building and construction assets increased by 338%, while machinery and transportation equipment increased by 627% and 675% respectively (in current prices).

What this implies is that an increasingly greater proportion of a very rapidly growing level of capital investment is being devoted to machinery and equipment. This suggests an increasing capital-intensive bias in capital formation in Nigeria.

The bias toward capital-intensive investment is reflected in the patterns of labor utilization in the construction industry (Table 9). In 1975, the industry in Nigeria employed 250,000 workers who represented less than 1% of employed persons. However, 210,000 of these workers (84% of total employed in the industry) were in the modern sector comprised of larger firms using more current technology and a higher proportion of skilled labor. Thus employment in construction, while only 0.9% of the total, forms 14% of modern sector employment. As a consequence, employment in construction, which is an important absorber of unskilled and semiskilled labor in many developing countries, is less important in Nigeria.

The picture emerging from this brief international comparison can be highlighted as follows. The construction industry is far more important in the Nigerian economy than in economies at corresponding per capita income levels. The level of capital formation in Nigeria has been very high, atypical of countries at its level of development. While building and construction account for largest

COUNTRY	URBAN TOTAL POPULATION (% 1970)	GDP PER CAPITA 1970 (U.S.\$, 1970)	HOUSING CONSUMP- TION PER CAPITA (U.S.\$, 1970)	RESIDENTIAL INVESTMENT AS % OF GDP (1963- 1973 AVERAGE)	RESIDENTIAL INVESTMENT AS % OF GFCF (1963- 1973 AVERAGE)	LABOR FORCE IN CON- STRUCTION (%)	CONSTRUCTION VALUE ADDED AS A % OF GDP
Brazil	55.0	420	N.A.	6.7**(1963-69)	41.8**(1963-69)	N.A.	1.2
El Salvador	38.7	300	17.1	2.6 (1968-72)	17.6 (1968-72)	4.1 (1961)	
Venezuela	78.8	980	159.6	5.5 (1968-72)	22.6 (1968-72)	6.5 (1970)	5.1
Portugal	27.9	660	30.2	3.9	20.8	6.7 (1960)	
Ghana	35.9	310	36.0	7.3 (1968-72)	63.4 (1968-72)**	3.3 (1960)	
Kenya	10.0	150	N.A.	2.5 (1964-73)	14.5 (1964-73)		5.8
Tanzania	6.0	100	10.5	N.A.	N.A.	N.A.	
India	20.3	110	6.4	2.7(1963-71)	8.72 (1963-71)	1.1(1961)	2.8
Malaysia	27.3	380	16.5	1.8	12.9		4.4
Sri Lanka	22.0	110	12.8	7.4	47.8*	2.5 (1963)	6.6
South Korea	41.5	250	16.7	12.1	0.5 (1960)		6.4
Thailand	14.8	200	8.8	3.2	13.9	0.5 (1960)	6.1
Colombia	55.0	340	N.A.	2.9	16.8		5.3
Chile	76.7	720	N.A.	2.6*	17.1		4.0

** Investment data for Ghana and Brazil include all categories of construction.

* Investment data for Sri Lanka include residential and non-residential construction.

Sources: Lakshmanan, Chatterjee, and Roy 1976; Table 1.

Table 5. Construction and Housing Indicators for Selected Developing Countries

proportions of their capital investment, there is an increasing shift to a more capital-intensive composition. The ironic result is that in a country in which the importance of construction to the national economy is so much higher than average, its contribution to employment is far less impressive than in many countries.

HOUSING PATTERNS AND THE AFFORDABILITY PROBLEMS

BEST AVAILABLE COPY

Statistical information necessary to delineate the housing component on the construction industry in Nigeria is unavailable. The national accounts data do not detail either rent or residential investment, so that generalizations about the contribution housing makes to construction are not possible.

Housing consumption data are, however, available at the household level. As indicated earlier, households in Nigeria make a smaller proportion of their total expenditures to housing than in most developing countries (Table 10). What is striking is that among wage earners the upper-income groups spend the lowest proportion (7.7%) of total expenditures to housing, while the middle-income groups devote the highest proportion (9.3%). In other words, no group spends even 10% on housing. Among the self-employed, the low-income groups spend the highest proportion (13.8%), the middle-income groups spend the lowest proportions. In most countries, 15% to 25% of total household expenditures are devoted to housing. There appears to be no plausible reason for such an atypical pattern.

It must be noted, however that the primary source of these data is the urban consumer survey of 1974-75. Unfortunately, the response rates associated with this survey in all but four states of Nigeria were too low (less than 50%) to be acceptable even for developing countries (Tobias 1979). Consequently, inferences about housing consumption from this source could be misleading.

The true importance of housing is often greater than these data suggest, since self-help construction and the imputed rent from such construction is not often reported or is greatly undervalued. Implicit rents of owner occupiers tend to be ignored or underestimated and rents paid to private property owners often go unreported. In Nigeria, there is provision of subsidized housing to some groups, and such subsidies are often recorded at less than their cost of production.

Thus indications are strong that the housing consumption reported above may be an understatement of real consumption.

What kinds of housing are consumed in Nigeria? The conditions of housing in towns are reviewed elsewhere in the Nigerian Housing Policy Study, of which this report is only a part. Our objective is

	1962/63	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70
Gross Domestic Product	2597.1	2745.8	2894.4	3110.0	3374.8	2752.6	2656.2	3549.3
		5.7	5.4	7.4	8.5	-18.4	-3.6	33.6
Building & Construction	112.3	118.4	137.0	178.2	180.4	154.8	131.4	191.5
		4.9	16.3	30.1	1.2	-14.2	-15.1	45.7
Building & Construction Share of GDP	4.32	4.29	4.73	5.73	5.35	5.62	4.95	5.39

	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78
Gross Domestic Product	5205.1	6570.7	7208.3	8482.6	13915.1	14655	17917.5	20016.4
	46.7	26.2	9.7	17.7	64.0	5.3	22.26	11.7
Building & Construction	304.5	445.8	548.4	578.9	643.5	861.5	1,171.7	1,507.0
	59.0	46.4	23.0	5.6	11.2	33.9	36.0	28.6
Building & Construction Share of GDP	5.85	6.78	7.61	6.83	4.62	5.88	6.53	7.53

Table 6. The Contribution of the Construction Industry to Gross Domestic Product in Nigeria 1962/63 - 1977/78

	1973/4	1974/75	1975/76	1976/77	1977/78
Gross fixed capital formation (GFCF)	1928.6	2416.9	3657.9	4555.5	5798.0
GDP at market prices	13159.3	14436.7	14277.1	15882.2	16743.9
GFCG/GBP (2)	14.66	16.74	25.62	28.69	34.62

Source: Federal Office of Statistics, Nigeria, World Bank

Table 7. Trends in Gross Fixed Capital Formation in Nigeria, 1978/74 - 1977/78

to report selectively and strategically from that review, some key aspects of housing supply in urban Nigeria that have relevance in a broad national development framework.

The urban areas of Nigeria offer a range of options from spacious well-serviced homes accessible to a range of jobs and community services, to inaccessible crowded slum dwellings. The available data would not permit full delineation of this diversity.

A simple approximation appears in Table 11, which shows the distribution of four main types of housing distinguished by construction materials. A CI house has cement blocks or brick walls, with corrugated iron or asbestos roof. The CMS house has mud walls strengthened by cement, and corrugated iron or asbestos roof. The O house has walls of unrendered mud, bamboo, or other materials. The mixed category is a combination of more than one of the other three types of construction found in the same house.

The CI, the most expensive and permanent, is predominant in Lagos and the humid southeastern cities. The CMS type, which is cheaper is prominent in Ibadan and other southwestern towns as well as in Kaduna and Benin. In marked contrast, O type - the cheapest houses - are largely located in the northern states - a reflection of their drier climates and abundance of lateritic materials. These regional differences highlight some implications for planning material standards for housing; while cement blocks may be appropriate for densely peopled Lagos, they may be inappropriate for northern towns.

TYPE OF ASSET	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
(Million at Current Prices)									
Building and construction	448	717	926	1170	1600	2631	2917	3127	3137
Machinery	241	320	322	331	580	1515	1161	2015	2326
Transportation equipment	126	164	192	185	250	561	706	1056	1271
Land improvement	30	34	39	61	70	74	22	25	27
Gross fixed capital formation	845	1235	1480	1746	2500	4780	4806	6223	6761
(Percentage Distribution)									
Building and construction	53.0	58.0	62.6	67.0	64.0	55.0	60.7	50.2	46.4
Machinery	28.5	25.9	21.8	19.0	23.2	31.7	24.1	32.4	34.4
Transport equipment	14.9	13.3	13.0	10.6	10.0	11.7	14.7	17.0	18.8
Land improvement	3.6	2.8	2.6	3.4	2.8	1.6	0.5	0.4	0.4
Gross fixed capital formation	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: 1962/63 - 1979/75 Federal Office of Statistics, Nigeria.
1975/76 - 1977/78 Ministry of Economic Development, Nigeria

Table 8. Composition of Gross Fixed Capital Formation
1968/70 - 1977/78

BRANCH OF ECONOMY	TOTAL EMPLOYMENT		MODERN SECTOR		MODERN SECTOR
	NUMBER OF EMPLOYEES (1000)	%	NUMBER OF EMPLOYEES (1000)	%	EMPLOYMENT %
Construction and building	250	0.9	210	14.0	84.0
Agriculture	17860	64.0	105	7.0	0.6
Mining and quarrying	110	0.4	90	6.0	81.8
Manufacturing	4690	16.8	324	21.6	6.9
Electricity, gas, water	30	0.1	30	2.0	100.0
Distribution	3400	12.2	99	6.6	2.9
Transport and communications	170	0.6	91	6.1	53.5
Services	1400	5.0	550	36.7	39.6
Total	27,910	100.0	1500	100.0	5.4

Source: Third National Development Plan. Baiman 1975.

Table 9. Total and Modern Sector Employment in Nigeria, 1975

BEST AVAILABLE COPY

The quality of housing for urbanites is obviously reflective of a range of attributes besides materials. Some indication of these is provided in Tables 12 and 13, which indicate the access to sewerage services and amenities such as kitchens, washrooms, and electricity in a number of northern Nigerian towns.

The water closet is available to a very small minority of households in the northern towns. Typical sewage disposal facility for an urban household is the shared pit latrine or pail. Again, with reference to washrooms and kitchens and use of electricity, rooming house renters in the large towns, typically share facilities while more exclusive use of these facilities is common among owner occupiers in smaller towns.

	LOW INCOME %	MIDDLE INCOME %	UPPER INCOME %
Wage earner	8.78	9.31	7.70
Self-employed	13.80	9.84	10.44

Source: Table 2.

Table 10. Percentage of Household Expenditures Devoted to Housing in Nigeria, 1975

For the poor, who form the largest segment of urbanites, housing and related services are appalling - crowded, unsanitary, congested, and polluted. These conditions reflect the low per capita incomes and the consequent limited ability to pay for housing, water supply, sewers, and other services. Available evidence clearly suggests that housing and access to services increases systematically with family income. Tables 14 and 15 indicate this direct relationship.

Nigerian households in the upper income brackets spend more on housing and can afford more expensive accommodations. Similarly, in the town of Kaduna, the higher the income level the greater the percentage of people having access to electricity.

Table 14 is noteworthy in another regard. What is suggested is that under some optimistic assumptions about access to long-term housing finance, the average household in the top quintile of income distribution in 1975 has the ability to pay for a house that can be constructed for about 3550 Naira. In other words, the maximum value of a dwelling that can be afforded by the top 80% (in income terms) of the households is about 1150 Naira. Not many dwellings being produced currently can be offered at that low a price. Most of the dwelling units constructed in the formal sector - contractors, state housing authorities - are being built at much higher prices.

Consequently there are wide gaps in Nigeria, as in most developing countries, between the cost of currently produced housing and the ability of low-income families to pay for it.

Over time as real income rises and improvement in distribution occurs, the situation may become less gloomy. For the current group of Nigerian households, especially in urban areas, affordability of housing being produced is a serious problem.

BEST AVAILABLE COPY

CITY	C.I.	C.M.I.	O.	MIXED
Sokoto	5.5	22.9	66.9	4.7
Gausau	3.5	2.1	91.9	2.5
Minna	15.9	24.1	60.0	-
Zaria	18.5	28.0	53.5	-
Katsina	0.8	8.6	90.6	-
Hadejia	0.6	0.3	99.1	-
Maiduguri	14.4	9.7	75.4	-
Bauchi	0.4	4.7	94.9	-
Jos	36.3	43.9	19.8	-
Makurdi	50.4	1.2	42.6	5.8
Kano	44.8	29.3	24.6	1.3
Lagos	69.2	17.4	10.8	2.6
Enugu	73.4	21.2	3.0	2.4
Aba	91.6	6.3	2.1	-
Onitsha	90.6	7.6	1.8	-
Port Harcourt	91.7	6.6	1.7	-
Asaba	63.9	18.4	17.7	-
Benin	19.8	70.5	9.7	-
Ibadan	23.2	67.4	9.5	-
Kaduna	10.7	60.3	29.0	-

Sources: Federal Office of Statistics, Housing Enquiries, 1971-72, Table 1.

Table 11. Percentage Distribution of Housing Type in Selected Nigerian Cities (1971-72)

This is crucial to poor families, because housing helps to improve their work-related income and the quality of life through access to and use of the shelter and related services. The resources available in the economy are not adequate to provide subsidies to any but a small segment of the population.

Progress toward helping the majority of households is possible only through a better match between ability to pay and production costs. Economic growth and improving income distribution over time will increase the ability to pay, but the more immediate option is to work toward reduced production costs and increased access to housing for the poor.

TOWN	WATER CLOSET		PIT LATRINE		PAIL		NONE
	EXCLUSIVE	SHARED	EXCLUSIVE	SHARED	EXCLUSIVE	SHARED	
Kaduna	1.2	9.3	4.1	60.7	0.2	23.4	1.0
Kano	0.7	1.3	0.8	40.7	0.8	51.4	4.3
Jos	1.8	3.7	9.9	42.7	1.8	38.4	1.7
Zaria	0.7	2.1	6.3	71.4	0.2	19.3	-
Katsina	-	-	83.8	15.9	-	-	0.4
Maiduguri	0.8	-	44.9	51.6	0.6	-	2.0
Sokoto	0.5	0.7	80.6	11.9	-	0.4	5.9
Hadejia	-	-	76.7	22.8	0.3	-	0.3
Bauchi	-	-	87.7	11.4	-	-	0.9

Source: Seymour 1978.

Table 12. Access to Sewerage Services in Northern Nigerian Towns

BEST AVAILABLE COPY

THE POLICY FRAMEWORK

There are two major components of a policy framework that could address the affordability problem in Nigeria.

The first is to improve the organizational framework as represented by the public provision or the public policies governing the private market provision. Whether houses are provided in the public or private sector, the costs of production can be reduced by lowering all input costs and improving the efficiency of production. Prices can be reduced by:

- 1) The choice of appropriate standards.

As in many developing countries, the widely prevalent policy of adopting standards for dwellings that are too high in

TOWN AND SOURCE OF DATA	WASHROOM			KITCHEN			ELECTRICITY	
	EXC.	SHR.	NONE	EXC.	SHR.	NONE	USE	NONE
Kaduna (F.O.S., 1962-63)							67.7	32.3
Kaduna (L.M.P. 1965)							33.0	67.0
Kaduna (F.O.S. 1971)	4.8	87.8	7.4	5.6	93.2	1.2	60.5	39.5
Zaria (F.O.S. 1971)	6.2	80.8	13.0	6.5	84.4	9.1	69.4	30.4
Zaria (Z.U.S. 1975)	8.0	55.0	37.0	6.8	89.7	3.5	75.0	25.0
Kano	2.3	92.9	4.8	2.0	85.3	12.7	57.4	42.6
Jos	11.9	85.9	2.1	12.7	85.2	2.1	54.1	45.9
Katsina	51.5	13.1	35.3	51.8	12.7	32.5	14.1	85.9
Sokoto	62.1	10.7	27.2	59.7	16.1	24.3	13.8	86.2
Maiduguri	31.3	28.9	39.8	26.2	33.3	40.5	8.6	91.4

Source: Seymour 1978.

Table 13. Availability of Washroom, Kitchen, and Electricity in Northern Nigerian Cities 1971-72

relation to household income or ability to pay denies a large proportion of urbanites access to housing. If these standards pertain to space (size of dwelling) and materials, cement vs mud, imported vs indigenous), and if services are provided in packets that range in quality from the simplest to the more complex, the choices available to different income groups widen. For instance, if one simplifies the range of housing and related amenities into four categories (Table 16), Nigeria's housing production in urban areas is largely concentrated on Types II and I. Wider production of cheaper

INCOME CLASS	AVERAGE ANNUAL HOUSEHOLD INCOME	AVERAGE ANNUAL HOUSING EXPENDITURES	COST OF AFFORDABLE HOUSING (1)
Household in the			
Top 20%	3910	391	3549
Next 20%	1360	126	1143
Next 20%	1007	116	1049
Next 20%	655	82	697
Bottom 20%	413	52	440

(1) Based on 25 year repayment, 10% interest

Table 14. Income Distribution and Affordable Housing in Nigeria, 1975

BEST AVAILABLE COPY

types illustrated by Type III will reduce overall costs and increase access to housing for the poor.

2) Better urban land management practices.

Land price is a major component of cost. Land that is well located and rich in amenities fetches a high price. Access to amenities can be influenced by public policy - road construction, water supply, sewer service, and so forth. If the resulting price increases are socially recaptured, such serviced land can be made available at more reasonable prices.

3) Improved efficiency in the building sector.

It has been noted that the Nigerian construction industry is inefficient. Skilled manpower shortages, imported or inadequate materials, rapidly increasing demand, and high profit margins account for very high production costs in the formal sector. A number of suggestions has been made in the literature to improve organizational efficiency in this industry to which attention may be drawn (Wahab 1977).

OCCUPATIONAL GROUP	% OF GROUP USING ELECTRICITY
Middle-income group	95
Lower-income group	
Clerks	84.3
Employee artisans	74.7
Traders	61.9
Self-employed artisans	50.0
Laborers	32.7
Lower-income group average	<u>67.7</u>

Source: Seymour 1978 Table 12.

Table 15. Income and Access to Use of Electricity in Kaduna, 1962-63

BEST AVAILABLE COPY

4) Assist internal sector production of housing.

Some necessary policies are discussed elsewhere in this larger study.

The second major component of an overall policy framework is increased access to financing.

Housing as a costly and durable good requires substantial savings. Financing of a short-term nature is for construction of dwelling units, and long-term for access of the family to the dwelling. Capital requirements for such finance can be large in a growing country like Nigeria. Several instruments are necessary to mobilize savings from the economy and make it available to construction and households. Such instruments must distinguish adequately between the requirements of those households that have regular and moderate income (and quality for the formal sector

AMENITY	HIGH I	MEDIUM II	LOW III	IV
Water Supply	Multiple tap connection	Single tap connection	Standpipe	No public supply
Sewer	Waterborne sewer system with treatment	Sewer connection no treatment	Household systems e.g., buckets, pit privy	Primitive or none
Housing	Conventional housing other amenities	Low to medium cost cooperative housing	Site services only; sanitary core and kitchen built	Slums: no environmental amenities
Transport	Urban expressways subways public transport	Intermediate personal transport, Jitneys, buses	Cycling, public transport	Congestion, low levels of service

Table 16. Illustrative Standards of Urban Housing and Amenity Systems

institutions), and the low-income households who need specialized mechanisms.

- Abrams, Charles Man's Struggle for Shelter in an Urbanizing World. Cambridge, MA: MIT Press, 1964.
- Burnham, Kelly (Ed) Housing and Economic Development. Cambridge, MA: MIT Press, 1955.
- Burns, Leland S., B. King Tighe, and Robert G. Healy Housing: Symbol and Shelter. University of California, 1970.
- Burns, Leland S. and F. G. Mittelbach. "A House is a House is a House." Industrial Relations. Vol. 11 October 1972.
- Chatterjee, Lata. Housing in Indonesia. Amsterdam, Free University, 1979.
- Chatterjee, Lata. "Appropriate Financial Institutions for Meeting Basic Shelter Needs." in Human Systems, Ecology and the Social Sciences, (Ed.) G. Lasker, London: Pergamon Press, 1981.
- Cullingworth, J.B. Housing Needs and Planning Policy. London: Allen and Unwin, 1966.
- Denison, E.F. Why Growth Rates Differ. Washington, D.C.: The Brookings Institution, 1967.
- Edmonds, Geoffrey A. "The Economics of Housing Policy for a Developing Economy." Puerto Rico, 1967.
- Grebler, L., D.M. Blank, and L. Winnick Capital Formation in Residential Real Estate: Trends and Prospects. Princeton: National Bureau of Economic Research, 1956.
- Grimes, Orville, F., Jr. Housing for Low Income Urban Families. Baltimore: The John Hopkins University Press, 1976.
- Hopkins, M.J.D., and H. Scolnik. "Basic Needs, Growth and Redistribution: A Quantitative Approach." I.L.O. World Employment Program Working Paper #29, 19.
- Hughes, R.B. "Interregional Income Differences: Self-Perpetuation." Southern Economic Journal. Vol. 28, 1976.
- International Labor Organization. "Employment, Growth and Basic Needs: A One-World Problem." Tripartite World Conference on Employment, Income Distribution and Social Progress and the International Division of Labor. Geneva: International Labor Organization, 1976.
- Lakshmanan, T.R., Lata Chatterjee, and Peter Kroll. "Housing

Consumption and Level of Development: A Cross National Comparison." Economic Geography. Vol. 54, No. 3, July 1978.

Lakshmanan, T.R., Lata Chatterjee, and P. Roy. "Housing Requirements and National Resources." Science Vol. 192, June 1976.

Seymour, T. Housing Conditions in Towns of Northern Nigeria: A Review of Existing Data. Zaria: Center for Social and Economic Research, No. 1, 1978.

Strassmann, W. Paul, "Construction, Productivity and Employment in Developing Countries." International Labor Review. Vol. 101, No. 5, May 1970.

Tobias, C. Urbanization Trends Review - Nigeria Washington: World Bank Draft Report, May 1979.

Edited and produced at the Graduate School of Design
Laboratory for Computer Graphics and Spatial Analysis
Harvard University

Edward Popko Co-editor