

HOUSING NEED AND HOUSING FINANCE
IN JAMAICA, 1975-1985

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ABSTRACT

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The improvement of the quality of life of peoples in underdeveloped areas is one of the central themes of this century. In the quest for improvement, few issues are as central as the issue of improved housing conditions. Few issues have proved as intractable to deal with. In this study, we try to identify the parameters that frame discussion of the housing question in Jamaica.

Debating issues without being in command of facts is, of course, a well known and widely practiced art. Since there are many issues involved in housing policy formulation, it has become a particularly fertile ground for the furtherance of this art. We have tried not to further swell the ranks of such debaters. One of our paramount tasks was thus to lay bare the structure of the housing stock and the factors regarding the distribution of household income. Upon this base, we try to develop policy guidelines for the future, bearing in mind the existing social and economic framework of Jamaica, and its institutions. We have sought, furthermore, to look at housing development as an integral part of the process of social and economic development.

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1.0 Introduction

1.1 Purpose of Thesis

This thesis deals with the formulation of housing policy in Jamaica. The policy problems that we deal with here are, however, to a lesser or greater degree, common to most developing countries. This thesis has, therefore, relevance outside the narrow confines of the Jamaican social context.

Of the many factors that influence Jamaican housing policy, few can be more critical than the availability of the financial resources to undertake a housing program. There are two aspects to this problem. The first is resources available for housing investment given competing socio-economic needs in the nation. The second concerns the ability of individual households to command the resources necessary for house acquisition, given household income and competing household commitments. These two aspects are not, of course, independent of each other. Low household incomes in a society are often (questions of distributional equity aside) reflective of low productivity, which at a national level surface as low GNP per capita and a low degree of capital formation. (The

causality tends to work in the reverse as well.)

The choice of thesis subject is motivated by a desire to assist in improving the living conditions of the Jamaican people. To this end it was deemed important to obtain a detailed understanding of Jamaican housing conditions and of some of the road blocks that hinder the achievement of the objective of improved living conditions.

1.2 Scope of Thesis

Housing and finance are both multifaceted subjects to which no single thesis is capable of doing justice. This is even more pointedly so in the case of a master thesis, which is constrained by time, information and the competence of the author. Few apologies are thus deemed necessary for the focus of this thesis. As already stated, housing policy is the primary concern and, more specifically, the following questions inform and direct the inquiry:

- a) What are Jamaica's housing needs for the period 1975-1985?
- b) What financial resources are likely to be available to meet housing needs over the period 1975-1985?
- c) Can further investment in the housing sector be justified on overall social and economic grounds?

- d) What are the social, political and economic environmental constraints on policy?

Taking housing need first, those familiar with this problem know only too well that the "need" concept is a very slippery one indeed to come to grips with. Who can say what people need in terms of housing? What is a house? Is it a structure? Is it a set of services? Does it come packaged along with a set of values, neighbours, schools, trees, smells, etc.? Needless to say, the above value issues must be set aside in this thesis.

Need focuses on the housing requirement generated by new household formation, the replacement of obsolescent stock, the expansion needed to overcome deficiencies due to overcrowding and to the lack of water and sanitary facilities. The determination of replacement need is rather arbitrary--depending largely on rules of thumb based on U.N. studies. (The limitations of this method of assessing need are dealt with in Section 1.3.)

For the purpose of estimating financial requirements, a limited number of housing options are proposed. These options are those deemed most relevant and appropriate to government policy formulation. Although there probably are many other options worthy of study,

limitations had to be placed on the number explored in order to keep computations to a manageable size. Also there was the desire not to overburden the study with computations to the point where policy analysis was obscured. Housing demand, an economic concept to be differentiated from the sociological concept of need, is treated as a subset of housing need. Demand is dealt with insofar as it influences the ability of households to pay for the different housing or housing service and the question of housing subsidies. No attempt is made to separate, for instance, the demand for rental housing from the demand for owner-occupancy or the demand for different structural types.

In dealing with the second theme, "financial resources", recognition is made of the fact that housing, an extremely heavy user of finance, must compete with other users, many of which necessarily take precedence. Thus, there will always be conflicts with the needs of the industrial sector, the growth of which is a prerequisite for rapid gross domestic product (GDP) growth. Education, health and agriculture are also no less critical as competitors for the available financial resources and no less important in the quest to increase the productivity and standard of living of the country.

Housing is at a severe disadvantage in the competition for financial resources because of the huge volume of funds required for housing finance and also because of the long-term nature of these financial requirements. This problem is compounded by the fact that the magnitude of its contribution to economic productivity--the traditional yardstick of measurement--remains obscure.

This thesis assumes that the availability of financial resources for housing is a function of the gross domestic product--to the extent that capital formation and GDP move together. Historical relationships are examined going back to 1960, and some of the implications for housing finance for the period 1975-1985 are explored.

In the process of developing the finance theme, the role, growth and structure of the financial institutions serving the housing sector are briefly examined. Essentially, the financial need is compared with the probable availability of finance over the 1975-1985 period. Policy conclusions are then drawn concerning the "finance gap".

We complete our study by examining the arguments regarding resource allocation decisions for the housing

sector and try to identify the social, institutional, political and economic parameters that shape policy decisions.

1.3 Methodology

In this section we lay out, in broad terms, the methodology of this study. The details are spelled out in each section and in the accompanying appendices. Housing need, availability of housing capital, criteria for resource allocation to the housing sector, and the social, political and institutional environment are our main concerns as we seek to develop guidelines for the formulation of housing policy for the period 1975 to 1985.

At a very early stage of the development of this study, we took the position that an evaluation of the structure of the housing stock was an essential objective. A characteristic feature of housing policy formulation in many developing countries is an ignorance of actual housing conditions. We saw this exercise as one of developing a firm base on which to build policy. Once this base had been established, we could then sally out to examine much broader social and economic issues. This policy of ours pays the penalty of leaving ourselves open to

criticism regarding the depth to which we have been able to examine the social and economic factors. Clearly, we were in a trade-off situation. To do both was impossible given time and data constraints. We opted for laying the base because we did not view this study as a final "end product" document, but as part of a larger, ongoing study of housing issues.

One of the main questions that arise is--"what is housing need?" We have chosen to concentrate our attention on new household formation and upgrading and to evaluate need based on our own notions of what standards are appropriate. This is the traditional approach and has recently come in for serious criticism. Turner's criticism [26] is based on the fact that the standards usually adopted are inappropriate and unachievable and that attention ought to be concentrated on reinforcing the "real" existing construction behaviour of the informal (low-income squatters) sector. Smith [24], following Grigsby [9], bases his criticism on the fact that the housing market is, in fact, differentiated into a series of sub-markets. Each sub-market behaves somewhat differently and caters to different "populations". It is thus an error to aggregate all these sub-markets

without bearing in mind their special individual characteristics. We are of the opinion that the above criticisms are valid and must be taken into consideration. The problem is to achieve this within the facilities and time available for writing a master thesis. We are also very limited by available data. We feel that the objectives which we seek to achieve here are not severely compromised by our method of dealing with need and we do not commit ourselves rigidly to standards. We look upon standards as bench-marks or measuring devices. As such, we do not see how they can be abandoned. The full force of Smith's criticism is felt in the evaluation of capital availability. Capital is not, of course, equally available to all sub-markets and we do not assume that it is. We believe, however, that government policy must be directed at rectifying this problem, and "evening-out" the distribution of available capital. Our method then, is to examine the existing housing stock with a view to identifying its characteristics and areas of potential improvement. We then estimate household formation and replacement need. Based on assumptions, which are stated in the relevant sections, we estimate the capital requirements of a number of housing programs. Next we examine the available national income and product accounts with

a view to estimating residential capital formation and draw conclusions regarding likely capital shortfalls.

In the two final sections of this study, we examine criteria for resource allocation to the housing sector, the social, political and economic ramifications of housing, and we set up guidelines for housing policy. Our treatment of these issues differs considerably from the approach that we adopted in the earlier sections (1.0 through 5.0). The earlier sections concentrated on narrow detail issues. Sections 6.0 and 7.0 seek to explore the whole policy issue--look at the forest having seen some of the trees. As already stated, a trade-off had to be made. We feel that the issues raised in Sections 6.0 and 7.0 require much greater study. We could not build the essential base and simultaneously tackle detailed socio-economic issues. We set our sights, in the latter sections, on identifying the critical social and economic policy issues and laying a foundation for future study and dialogue.

The Regional Framework. Jamaica has thirteen parishes, each with its own capital and local government authority. As Sections 2.0 and 3.0 make clear, however,

Kingston/St. Catherine (with 30 percent of the island's population) dominates the social and economic life of the country. In looking at the problem of how to make sense of the available data, it quickly became clear that the normal "parish by parish" framework was cumbersome. We opted for a simple regional framework with Kingston/St. Andrew and St. Catherine as Region One--the major metropolitan region. The other parishes taken together form Region Two--the rural region. Each region was then broken down into urban and rural to reflect the fact that Region One has significant rural areas and that the towns in Region Two are experiencing considerable growth. This simplified framework makes data manipulation easier to handle than the parish by parish framework, while still capturing important urban national trends and other regional differences. The above framework is not being proposed as an ideal. It was, however, very convenient for our purposes and could be further disaggregated if desired. Figure 1.0 is a diagram indicating the parishes and regions.

1.4 Data Problems

A thesis could be written on this subject alone. The data in developing countries are usually inadequate, where they exist. The more usual situation is simply that the data necessary to policy formulation do not

exist. Severe problems were encountered in the population and dwelling data, and the income data had almost to be invented. In estimating capital formation, problems of future inflation trends bedevilled the estimates. Inadequate data are, however, an occupational hazard of planners.

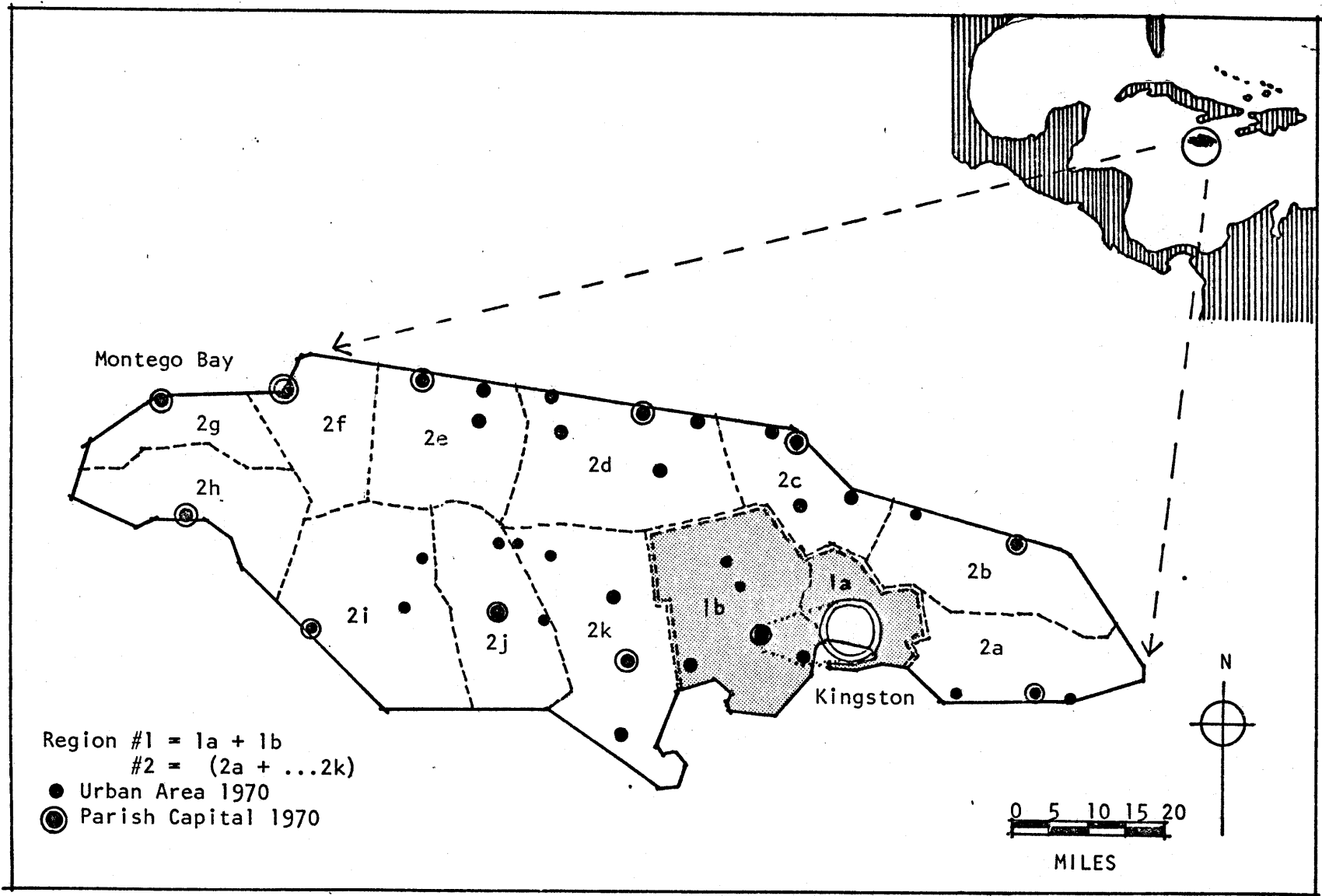


Figure 1.0 Jamaica - Regions, Parishes, Parish Capitals, Other Urban Areas 1970

2.0 Population Growth and Household Formation, 1943-1985

This section deals with trends in population growth and household formation over the period 1943 to 1985. The objective here is to develop a basis on which to evaluate housing need arising from new household formation over the period 1970-1985. Although analysis is made of the patterns of population growth and household formation that occurred from 1943-1970, only 1960-1970 is analyzed in detail.

It is not, of course, possible, within the confines of this thesis, to explore in depth the underlying social and economic forces that determine population changes. Some of these factors are, however, introduced into the analysis where they are deemed vital to the formulation of housing policy.

2.1 Population Growth, 1943-1960--An Overview

A brief overview of the main currents of population growth and change is presented in this section. Tables 2.01 and 2.02 present a framework for a more detailed analysis which follows in subsequent sections. The latter is based on a two-region, urban and rural, model described in the methodological section (1.3) of this thesis.

TABLE 2.01 Population and Average Annual Rates of Population Growth by Parish, 1943, 1960, 1970.

NO. PARISH	Population			Average Annual Rate* of Growth %	
	1943	1960	1970	1943-1960	1960-1970
1a Kgn./St. Andrew	238,229	419,416	547,800	3.4	2.7
b St. Catherine	121,032	153,535	182,900	1.4	1.7
c (1a + 1b)	359,261	572,951	730,700	2.8	2.5
2a St. Thomas	60,693	68,725	70,700	0.7	0.2
b Portland	60,712	64,510	67,900	0.3	0.5
c St. Mary	90,902	94,233	99,500	0.1	0.6
d St. Ann	96,193	114,360	120,500	1.0	0.6
e Trelawny	47,535	56,080	61,200	0.9	0.9
f St. James	63,542	83,003	102,300	1.6	2.1
g Hanover	51,684	53,902	58,600	0.2	0.8
h Westmorland	90,109	109,606	113,200	1.2	0.3
i St. Elizabeth	100,182	116,706	125,900	0.9	0.8
j Manchester	92,745	111,788	123,000	1.1	0.9
k Clarendon	123,505	163,450	175,000	1.6	0.7
1 Σ (2a, 2b...2k)	877,802	1,036,863	1,117,800	1.0	0.8
3 Jamaica	1,237,063	1,609,814	1,848,500	1.6	1.4

Source: Population Trends and Housing Needs, Department of Statistics, Jamaica, 1974.

Note: Kingston and St. Andrew have been grouped because together they form the island's major urban area and are one for administrative purposes as well.

* Rates of growth are compound rates.

TABLE 2.02

Distribution of Population by Parish as Percentage of Total Population, 1943, 1960, 1970.

NO. PARISH	Percentage Distribution of Population (Rounded)		
	1943	1960	1970
1a Kgn./St. Andrew	19	26	30
b St. Catherine	10	10	10
c (1a + 1b)	29	36	40
2a St. Thomas	5	4	4
b Portland	5	4	4
c St. Mary	7	6	5
d St. Ann	8	7	7
e Trelawny	4	3	3
f St. James	5	5	6
g Hanover	4	3	3
h Westmorland	7	7	6
i St. Elizabeth	8	7	7
j Manchester	7	7	7
k Clarendon	10	10	9
l $\Sigma(2a, 2b \dots 2k)$	71*	64	60
3 Jamaica	100	100	100

Computed from Table 2.01.

* Does not add to sub total because of rounding.

2.1.1 Relative Population Size of Different Parishes

As shown in Table 2.02, Kingston/St. Andrew, the capital city and major metropolitan area, increased its share of the island's total population from 19 percent in 1943 to 30 percent in 1970. In 1943 the population of the major metropolitan area was twice as large as that of the next largest parish. By 1960 the ratio had increased to two and a half and by 1970 it stood at three times. Kingston/St. Andrew's growth reflects the growing strength and concentration of industrial and commercial activity in that area. St. James was the only other parish to increase its share of total population between 1943 and 1970. This seems due to a considerable expansion of the tourist trade in the area.

Of the remaining parishes, only St. Catherine and Manchester maintained their share of the island's total population over the period. All other parishes showed relative declines. For St. Catherine, the main factor is that it seems to have become an "overspill" for the Kingston/St. Andrew metropolitan area. There is little doubt that for development purposes St. Catherine must be considered part of a metropolitan region along with Kingston/St. Andrew. This is because Kingston/St. Andrew has almost run out of large tracts of developable

land. Recent housing and transportation developments, particularly along the South St. Catherine area (in Portmore and the Hellshire Hills area), are a confirmation of what seems to be an inevitable trend.

In the case of Manchester, this parish has been the centre of the bauxite industry since the late 1950's. Relative declines in the population in other parishes have been of the order of one percent. This decline seems due to weaknesses in the agricultural sector.

2.1.2 Relative Average Annual Rates of Population Growth

As shown in Table 2.01, Kingston/St. Andrew grew twice as fast (3.4 percent) as the next fastest growing parish and the island as a whole between 1943 and 1960. This pattern continued during the period 1960 to 1970 (St. James was an exception during this latter period). The overall rates of growth did, however, slow down. St. James and St. Catherine showed significant increases in their rates of growth. St. James moved from 1.6 percent to 2.1 percent per annum for the periods 1943-1960 and 1960-1970, respectively. The relevant change for St. Catherine was from 1.4 percent to 1.7 percent per annum. All other parishes (with the exception of St. Mary which showed a small

positive change) experienced declining rates of population growth.

Taken overall, the island's rate of population growth declined somewhat (from 1.6 to 1.4 percent) over the period 1943-1960 and 1960-1970. This decline seems due mainly to external migration. The death rate has been declining significantly, and the birth rate, though falling, has not declined to the point where it can account for the decline in the average annual rate of growth. (These factors will be taken up in Section 2.3.)

2.2 Urban and Rural Population Growth, 1960-1970, by Region

Tables 2.03 to 2.07 present population breakdowns by region (urban and rural), analyses of changes in rural-urban distribution of population, and average annual rates of population growth, 1960-1970. To simplify the presentation, the island has been divided into two regions. Region 1 comprises Kingston/St. Andrew (1a) and St. Catherine (1b). Region 2 is a composite of all the other parishes. These tables tell an interesting tale, but first it must be noted that the figures for urban/rural distributions in 1970 exclude a number of persons (see footnotes to tables)

for whom there were incomplete data. (Furthermore the above-mentioned tables include persons in non-private households who do not properly fall within the purview of this thesis.) The following are some of the salient features of population growth brought out by the tables.

2.2.1 Changes in the Urban and Rural Distribution of Population by Region

As shown in Tables 2.03 to 2.07, Region 1 and Region 2 show an increasing change of population from rural to urban locations, with St. Catherine showing the most dramatic change (from 18.8 percent urban in 1960 to 34.8 percent urban in 1970). In fact, the urban population in St. Catherine increased by 117.3 percent over the period (see Table 2.05). The change of the other parishes was quite significant -- some 57.4 percent increase in the urban population accompanied by a 0.7 percent decline in the rural population. With the exception of Kingston/St. Andrew, there was a decline in the rural population in absolute and percentage terms. This was in keeping with the trend, indicating a population shift from Region 2 to Region 1 and from rural to urban within each region.

Region 1 and Region 2 were almost mirror images of each

other as far as their urban/rural distribution of population in 1970 was concerned, with Region 1 being 76 percent urban and 24 percent rural while Region 2 was 80 percent rural and 20 percent urban. Within Region 1 Kingston/St. Andrew was 90 percent urban, while Kingston alone was 100 percent urban. Furthermore, in 1970 Kingston/St. Andrew's urban population was twice as great as the combined urban population for the rest of the island and was in fact eleven times greater than that of the next largest urban area.

2.2.2 Changes in Distribution of Population by Region (Urban and Rural) as a Percentage of Total Population, 1960-1970

Table 2.06 clearly indicates that not only was the population changing from rural to urban but that Region 2 increased its share of the total urban population from 25 percent in 1960 to 28.3 percent in 1970. Clearly, therefore, the growth of the urban population in rural areas has been significant. This was indicated by Table 2.07. The distribution among regions of the rural population was virtually unchanged.

2.2.3 Relative Rates of Population Growth by Region (Urban and Rural), 1960-1970

The urban population has been growing more than twice as fast as the island's overall rate of population growth -- 3.3 percent to 1.4 percent per annum (see Tables 2.05 and 2.07). St. Catherine showed the most spectacular average annual rate of urban growth, some 8.1 percent over the period. The urban population in Region 2 grew at an average annual rate of some 4.6 percent, which is eight times as fast as the rate of growth for the parishes as a whole and greater also than the rate of growth of the urban population of the island.

With the exception of Kingston/St. Andrew, the rural population has been exhibiting negative rates of growth. This rate of decline has been relatively small -- on the order of 0.1 percent per annum for Region 2 and 0.6 percent and .01 percent per annum for St. Catherine and Region 1, respectively.

2.2.4 Summary

We have, so far, examined the main changes that have taken place in the population over the period 1960-1970. In the next section (2.3) we look briefly at the main

demographic factors which underly these changes in population. Following Section 2.3 we examine household formation.

TABLE 2.03 Distribution of Population by Region
 (Urban and Rural), 1960
 (Includes all Households)

NO.	REGION	Population Distribution 1960			Percentages* 1960		
		Total	Urban	Rural	Total	Urban	Rural
1a	Kgn./St. Andrew	419,416	376,520	42,896	100.0	89.7	10.3
b	St. Catherine	153,535	28,896	124,639	100.0	18.8	81.2
c	(1a + 1b)	572,951	405,416	167,535	100.0	70.8	29.2
2	Rural Parishes	1,036,863	135,087	901,776	100.0	13.0	87.0
3	Jamaica (1c + 2)	1,609,814	540,503	1,069,311	100.0	33.6	66.4

Source: Computed from Population Census 1970, Bulletin 1, Table VI
 Department of Statistics, Jamaica, 1973.

* May not add to totals because of rounding.

TABLE 2.04 Distribution of Population by Region
(Urban and Rural), 1970

NO. REGION	Population Distribution 1970			Percentages* 1970		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	525,208	475,548	49,660	100.0	90.5	9.5
b St. Catherine	180,404	62,776	117,628	100.0	34.8	65.2
c (1a + 1b)	705,612	538,324	167,288	100.0	76.3	23.7
2 Rural Parishes	1,107,982	212,627	895,355	100.0	19.2	80.8
3 Jamaica (1c + 2)	1,813,594	750,951	1,062,643	100.0	41.4	58.6

Source: Computed from Population Census 1970, Bulletin 1, Table VI,
Department of Statistics, Jamaica, 1973.

Note: 34,800 persons excluded (data incomplete -- urban/rural) and
106 persons also excluded (data incomplete -- age).

21,594 persons in non-private households included.

* May not add to totals because of rounding.

TABLE 2.05

Numerical and Percentage Changes in the
Distribution of Population by Region
(Urban and Rural), 1960-1970

NO. REGION	Population Change 1960-1970			Percentage Change 1960-1970		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	+105,792	+ 99,028	+ 6,764	+25.2	+ 26.3	+15.8
b St. Catherine	+ 26,869	+ 33,880	- 7,011	+17.5	+117.3	- 5.6
c (1a + 1b)	+132,661	+132,908	- 247	+23.2	+ 32.8	- 0.1
2 Rural Parishes	+ 71,119	+ 77,540	- 6,421	+ 6.9	+ 57.4	- 0.7
3 Jamaica (1c + 2)	+203,780	+210,448	- 6,668	+12.7	+ 38.9	- 0.6

Note: Computed from Tables 2.03 and 2.04.

1970 figures exclude persons for whom there was incomplete data
(34,906 persons) as noted on Table 2.04.

TABLE 2.06

Distribution of Population by Region (Urban and Rural) as Percentage of Total Population, 1960 and 1970

NO. REGION	Population Distribution* Percentages 1960			Population Distribution* Percentages 1970		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	26.1	69.7	4.0	29.0	63.3	4.6
b St. Catherine	9.5	5.3	11.7	9.9	8.4	11.1
c (1a + 1b)	35.6	75.0	15.7	38.9	71.7	15.7
2 Rural Parishes	64.4	25.0	84.3	61.1	28.3	84.3
3 Jamaica (1c + 2)	100.0	100.0	100.0	100.0	100.0	100.0

Note: Computed from Tables 2.03 and 2.04.

1970 figures are less than indicated by Table 2.04.
The major discrepancy is thought to be for Kingston Urban,
as noted on Table 2.04.

* May not add to totals because of rounding.

TABLE 2.07

Average Annual Rates of Population Growth by
Region (Urban and Rural), 1960-1970***

NO.	REGION	Total*	Total	Urban	Rural
1a	Kgn./St. Andrew	+2.7	+2.3	+2.4	+1.5
b	St. Catherine	+1.7	+1.6	+8.1	-0.6
c	(1a + 1b)	+2.5	+2.1	+2.9	-0.0**
2	Rural Parishes	+0.8	+0.7	+4.6	-0.1
3	Jamaica (1c + 2)	+1.4	+1.2	+3.3	-0.1

Source: Computed from Population Census 1970, Bulletin 1, Table VI,
Department of Statistics, Jamaica 1973.

Note: Computations exclude 34,906 persons (incomplete data), as
noted on Table 2.04.

* Total derives from Table 2.01.

** -0.01

*** Rates are compound rates.

2.3 Main Demographic Factors Underlying Population Change, 1960-1970.

We deal briefly in this section with three of the underlying demographic factors that are important in explaining the population changes over the period. For a more detailed treatment of the factors, readers are referred to the work of Roberts et al [22]. Of major importance is the powerful effect of internal migration and emigration in shaping the patterns of growth of the population. Emigration has long been a critical factor in reducing the net population increase. As shown in Table 2.08, internal migration has had the effect of hastening the growth of both the urban towns (Region 2) and of the urban areas of Kingston/St. Andrew and St. Catherine (Regions 1a and 1b). Furthermore, some of the anomalies that appear in the housing stock clearly result, in part, from population changes. One such anomaly is the surprising increase in the population and density of occupancy (in terms of persons per dwelling) in rural Kingston/St. Andrew (Region 1a).

We examine briefly below, the following factors:

- Emigration
- Internal Migration
- Natural Increase.

Emigration, 1960-1970. The importance of emigration comes into focus when it is realized that the number of persons leaving the island over the period (292,100) was more than one-half the natural increase. Furthermore, in Kingston/St. Andrew emigration represented 78 percent of the natural increase in population. Clearly Jamaica is a major exporter of population. There has, however, been a tendency for the emigration rate to slow down over the period as foreign governments move to tighten their immigration policies. (See Roberts et al [22, p. 174].) Of the total number of persons migrating abroad, some 50 percent came from Kingston/St. Andrew, while 8 percent came from St. Catherine and the rest from the rural parishes. No urban/rural breakdown is available, but it is believed that a significant proportion of the emigration was from the rural areas of both regions.

Internal Migration, 1960-1970. Kingston/St. Andrew benefited most from internal migration, gaining some 71,400 persons (net) over the period. This represented 95 percent of the net movers from Region 2 to Region 1. St. Catherine had a net gain of 3,600, while Region 2 had a net loss of 75,000 persons.

(Within Region 2 one parish, St. James, the centre of the tourist industry, was the only rural parish to

experience a net gain -- some 1,200 persons. Within Region 1, Kingston was a net loser -- some 28,000 persons -- to St. Andrew.)

Natural Increase, 1960-1970. Kingston/St. Andrew accounted for 34 percent of the total natural increase and 47 percent of the net intercensal increase. The rates of growth per thousand population, are as follows:

Birth	39.1
Death	8.2
Natural Increase	30.9

The fertility rate was relatively high, while the mortality rate decreased to a point approaching that of some European populations. (See Roberts et al, [22, p. 176].)

TABLE 2.08

Population Changes by Parish, 1960-1970, Natural Increase, Internal Migration and Emigration

NO. REGION	Net Intercensal Increase	Natural Increase	Net Internal Migration	Emigration
1a Kgn/St. Andrew	+112,000	+182,400	+71,400	-141,800
b St. Catherine	+30,700	+49,600	+3,600	-22,500
c (1a + 1b)	+142,700	+232,000	+75,000	-164,300
2 Rural Parishes	+96,000	+298,800	-75,000	-127,800
3 Jamaica (1c + 2)	+238,700	+530,800	-	-292,100
Percentages				
1a Kgn/St. Andrew	100	+163	+64	-127
b St. Catherine	100	+162	+12	-73
c (1a + 1b)	100	+163	+53	-115
2 Rural Parishes	100	+311	-78	-133
3 Jamaica (1c + 2)	100	+222	-	-122

Source: Recent Population Movements in Jamaica, C.I.C.R.E.D. Series, 1974, World Population Year, Table 3.3, page 27.

Note: Totals rounded.

2.4 Household Formation, 1960-1970

Having examined, in the two previous sections, the changes that have been taking place in the population, we now move to consider household formation. Household as it is used in this section, refers to private households and is more accurately termed "number of persons occupying a private dwelling unit". This is due to the fact that the available 1970 data does not appear to differentiate a household and the term mentioned above. In evaluating household formation over the period, adjustments have been made to the population figures in the previous tables so as to obtain the figures, shown in Tables 2.09 to 2.15, that relate to the population in private households only. This involved essentially the exclusion of institutional households. These were assumed to be all urban. It was also necessary to distribute among the regions some 34,800 persons for whom there were incomplete data in 1970. These were distributed by assuming that they followed the urban/rural distribution indicated in Table 2.04. (Appendix A1.0 indicates how the distribution was made.) The adjustment process had two effects. The first was to lower the percentage distribution of the urban population and to raise that of the rural. The second effect was to raise the

average annual rate of population growth and to reverse the direction of growth (from negative to positive) for the rural areas. (See Table 2.15.) We examine the following factors below: urban/rural distribution of dwellings, household size, and relative rates of growth of population and dwellings.

2.4.1 Urban/Rural Distribution of Dwellings, 1960-1970

The distribution of dwellings appears to follow closely the distribution of population and reflect parallel patterns of change, as shown in Tables 2.11 and 2.12. In both 1960 and 1970, however, there was a slight urban bias in the percentage distribution of dwellings compared with that of population. The general trend is one of increasing urbanization of both population and dwellings. Region 1 dominated urban housing and Kingston/St. Andrew (1a) dominated both Region 1 and urban dwellings as a whole. In 1960, Kingston/St. Andrew comprised 94 percent of the dwellings in Region 1 and 71 percent of the total number of urban dwellings. In 1970, Kingston/St. Andrew's domination of the urban housing stock weakened as there was a considerable growth in Region 2 (the rural towns). The relevant figures for 1970 were 89 percent (Kingston/St. Andrew as a percentage of Region 1) and 64 percent (Kingston/

St. Andrew as a percentage of the total number of urban dwellings). In the rural areas all regions experienced absolute and percentage declines, with Kingston/St. Andrew leading the decline in percentage terms (46 percent) though not in absolute terms. Region 2 accounted for the latter. Overall there was a 41 percent increase in urban dwellings and a 14 percent decline in the rural areas. Comparisons of relative changes in the population and in the housing stock (see Table 2.14 and Section 2.4.2) indicate that, taken overall, population increased faster than the stock of dwellings in the urban area (47 percent to 41 percent between 1960 and 1970), while the rural areas exhibited the characteristic of a stable population and a housing stock that declined by 14 percent.

2.4.2 Relative Rates of Growth of Population and Dwellings, 1960-1970

As mentioned above, population overall grew faster than dwellings. There were, however, notable exceptions to this in urban Regions 1b (St. Catherine) and 2, as shown in Table 2.14. Here the average annual rates of growth were 8.7 percent and 9.6 percent (for population and dwellings) for Region 1b, and 5.0 percent and 5.1 percent respectively for Region 2. The effect of this

growth was to lower the occupancy (number of persons per dwelling) over the period in these two urban regions, from 4.4 to 4.0 in Region 1b and from 4.0 to 3.9 in Region 2.

2.4.3 Household Size, 1960-1970

With the exception of Urban Regions 1b and 2 mentioned above, there were increases in the level of occupancies. This was largely, as already mentioned, a consequence of population growing faster than dwellings in all but the two regions mentioned above. The change in the level of occupancy was most dramatic in the rural areas. The available data indicate a doubling of the average number of persons occupying a dwelling in Rural Kingston/St. Andrew. This change was due to a combination of a high average annual rate of decline in the stock of dwellings (-5.9 percent) and a significant positive average annual rate of population growth (+1.9 percent). Despite the increase in the number of persons per dwelling, there is evidence that the occupancy in terms of numbers of persons per room did not increase due largely to an increase in the number of rooms per dwelling. (See Section 3.6.)

2.4.4 Summary

In this section we examined changes in the urban/rural distribution of population, dwellings and household sizes. This completes our assessment of household formation over the period 1960-1970. We have not, of course, exhausted the subject. The main points relevant to this study have, however, been dealt with. We turn now (Section 2.5) to estimating the future household formation.

TABLE 2.09

Distribution of Population in Private Households
By Region (Urban and Rural), 1960

NO. REGION	Population in Private Households 1960			Distribution Percentages 1960*		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	398,986	356,090	42,896	100.0	89.2	10.8
b St. Catherine	151,645	27,006	124,639	100.0	17.8	82.2
c (1a + 1b)	550,631	383,096	167,535	100.0	69.6	30.4
2 Rural Parishes	1,029,183	127,407	901,776	100.0	12.4	87.6
3 Jamaica (1c + 2)	1,579,814	510,503	1,069,311	100.0	32.3	67.7

Notes: Total obtained from Census of Population 1970, Bulletin 2, Table 1, Department of Statistics, Jamaica, June 1973.

Urban and Rural calculated using distribution for total households in 1960 (see Table 2.03), adjusted by assuming that all non-private households were urban.

* May not add to totals because of rounding.

TABLE 2.10 Distribution of Population in Private Households
By Region (Urban and Rural), 1970

NO. REGION	Population in Private Households, 1970			Distribution Percentages*, 1970		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	535,100	483,303	51,797	100.0	90.3	9.7
b St. Catherine	181,500	62,242	119,258	100.0	34.3	65.7
c (1a + 1b)	716,600	545,545	171,055	100.0	76.1	23.9
2 Rural Parishes	1,110,200	206,927	903,273	100.0	18.6	81.4
3 Jamaica (1c + 2)	1,826,800	752,472	1,074,328	100.0	41.2	58.8

Notes: Computed from Table 2.04.

34,800 persons included for whom there were incomplete data. These are distributed proportionally according to urban/rural distribution of total population. See Appendix A1.0.

21,700 persons in non-private households, assumed urban only, excluded.

* May not add to totals because of rounding.

TABLE 2.11 Distribution of Private Dwellings by Region,
Urban and Rural, 1960

NO. REGION	Distribution of Private Dwellings 1960			Distribution Percentages* 1960		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	113,711	95,051	18,660	100.0	83.6	16.4
b St. Catherine	39,138	6,162	32,976	100.0	15.7	84.3
c (1a + 1b)	152,849	101,213	51,636	100.0	66.3	33.7
2 Rural Parishes	248,922	32,022	216,900	100.0	12.9	87.1
3 Jamaica (1c + 2)	401,771	133,235	268,536	100.0	33.2	66.8

Source: Computed from Census of Jamaica, Volume II, Part B, Department of Statistics, Jamaica.

* May not add to totals because of rounding.

TABLE 2.12

Distribution of Private Dwellings by Region
(Urban and Rural), 1970

NO. REGION	Distribution of Private Dwellings 1970			Distribution Percentages* 1970		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	130,356	120,228	10,128	100.0	92.2	7.8
b St. Catherine	41,908	15,430	26,478	100.0	36.8	63.2
c (1a + 1b)	172,264	135,658	36,606	100.0	78.8	21.2
2 Rural Parishes	247,583	52,838	194,745	100.0	21.3	78.7
3 Jamaica (1c + 2)	419,847	188,496	231,351	100.0	44.9	55.1

Source: Total 1970 Distribution of Private Dwellings from Census of Population 1970, Bulletin 2, Table I and Table III, Department of Statistics, Jamaica, 1973. (Excludes group dwelling and no-fixed abode).

* May not add to totals because of rounding.

TABLE 2.13

Numerical and Percentage Changes in the Distribution of Population in Private Households and Private Dwellings by Region (Urban and Rural), 1960 - 1970*

NO. REGION	Population Change 1960 - 1970			Dwellings Change 1960 - 1970		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	+136,114	+127,213	+8,901	+16,645	+25,277	-8,532
b St. Catherine	+29,855	+35,236	-5,381	+2,770	+9,268	-6,498
c (1a + 1b)	+165,969	+162,449	+3,520	+19,415	+34,445	-15,030
2 Rural Parishes	+81,017	+79,520	+1,497	-1,339	+20,816	-22,155
3 Jamaica (1c + 2)	+266,986	+241,969	+5,017	+18,076	+55,261	-37,185
	Percentage Change 1960 - 1970					
1a Kgn./St. Andrew	+34	+36	+21	+15	+27	-46
b St. Catherine	+20	+130	-4	+7	+150	-20
c (1a + 1b)	+30	+42	+2	+13	+34	-29
2 Rural Parishes	+8	+62	-	-1	+65	-10
3 Jamaica (1c + 2)	+16	+47	-	+4	+41	-14

* Computed from Tables 2.09 to 2.12.

TABLE 2.14

Average Annual Rate of Population Growth and Growth of Private Dwellings by Region (Urban and Rural), 1960-1970

NO. REGION	Average Annual Rate of Growth of Population in Private Households 1960-1970*			Average Annual Rate of Growth of Private Dwellings 1960-1970*		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	+3.0	+3.1	+1.9	+1.4	+2.4	-5.9
b St. Catherine	+1.8	+8.7	+0.4**	+0.7	+9.6	-2.2
c (1a + 1b)	+2.7	+3.6	+0.2**	+1.2	+3.0	-3.4
2 Rural Parishes	+0.8	+5.0	+0.0(a)**	-0.0(c)	+5.1	-0.1
3 Jamaica (1c + 2)	+1.5	+4.0	+0.1(b)**	+0.4	+3.5	-1.5

Notes: Computed from Tables 2.11 and 2.13.

* Rates of growth are compound rates.

** Indicates change from negative (-) rate of growth to positive (+) when compared to Table 2.07. This results from the adjustment process. See text.

(a) +0.02

(b) +0.05

(c) -0.05

TABLE 2.15 Household Size by Region (Urban and Rural),
1960 - 1970

NO. REGION	Number of Persons Per Dwelling 1960			Number of Persons Per Dwelling 1970		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	3.3	3.7	2.3	4.1	4.0	5.1
b St. Catherine	3.9	4.4	3.8	4.3	4.0	4.5
c (1a + 1b)	3.6	3.8	3.2	4.2	4.0	4.7
2 Rural Parishes	4.1	4.0	4.2	4.5	3.9	4.7
3 Jamaica (1c + 2)	3.9	3.8	4.0	4.4	4.0	4.6

Note: Computed from Tables 2.10 and 2.12.

2.5 Estimate of Population Growth and Household Formation, 1970-1985

In this section we move from the evaluation of past population trends and attempt to estimate future population change and the formation of new households. Projecting future changes in the size and distribution of the population is, of course, a hazardous business. This is especially the case for Jamaica because of the prominence of emigration as a factor in net population increase. As has already been shown (Table 2.08), emigration between 1960 and 1970 represented more than 50 percent of the natural increase. Furthermore, the rate of external migration, in addition to being sensitive to socio-economic factors within the island, is subject also to the immigration policies of the countries (mainly the U.S.A., Canada, and the U.K.) that receive Jamaicans.

For the purpose of this thesis, it will be assumed that the rates of growth that occurred during the period 1960-1970 will be sustained up to 1985. Generally it can be expected that the birth rate will slow down and the death rate will level off. The slowdown in birth rate will probably be offset by a decrease in the rate of external migration. This slowdown in the rate of external migration is expected because of the decreased

migration opportunities open to unskilled and semi-skilled persons. (There has been an increasing shift in the occupational structure of emigrants from semi-skilled to skilled and professional, and the U.S. and the U.K. have considerably tightened their immigration policies.) For purposes of comparison, projections made by Roberts et al [22] are included (Appendix A3.0). These projections assume three different growth patterns, the details of which are included in the Appendix. The different assumptions can lead to spectacularly different population estimates.

2.5.1 The Model Used for Population Projection

Table 2.16 sets out the rates of population growth assumed for the 1970-1985 period. It is derived from Table 2.14 with the exception that the rates of growth of the rural population for Regions 1 and 2 have been altered. This is due to the assumption that it is quite unlikely that the rural population, with rural Kingston/St. Andrew being an exception, will increase significantly. Table 2.10, the Distribution of Population by Private Households by Region (Urban and Rural), 1970, is used as base-year population. The model used for the projection is a compound growth model and is as follows:

$$P_{t+n} = P_t \left[1 + \frac{r}{100} \right]^n$$

Where

P_{t+n} = Population in horizon year $t + n$

P_t = Population in base year

r = Annual rate of increase

n = Number of years from the base to the horizon.

This model was used because it was easy to manipulate with the available data and seemed to give, within limits to be discussed, results that were adequate for the purpose to which they would be put. Furthermore, the usual models based on headship rates could not be conveniently used in the two-region, urban and rural, framework.

As had already been alluded to, emigration is probably the major imponderable in attempting to predict future population. Figures 2.1 and 2.2 and Tables 2.18 and 2.20 show projections using the model outlined above. Figure 2.1 plots population growth based on four different assumptions (see Appendix A3.0). Table 2.17 indicates the range of variation in the projection population under the different assumptions. As can be seen, the range of variation increases with time. The projections used in this study for Jamaica (total) are

subject to the following range of error when compared with Roberts' projections 1 and 3:

Year	1975	1980	1985
Percentage Range of Error	+7 0	+14 -6	+20 -16

The "Roberts #2" projection seems to the author to be the most likely future direction of population growth. The projections for the growth of population in private households used in this study track the "Roberts #2" projection of the total population fairly well (within 2 to 6 percent below). By 1985, however, the "Compound" projection begins to appear unreasonable when compared with the "Roberts #2" projection.

2.5.2 Projected Population, 1970-1985

Section 2.5.1 has stated the assumptions that underly these projections. It seems likely, if these assumptions are valid, that by 1980 the Jamaican population will be about equally distributed between the urban and rural areas and that by 1985 and certainly by 1990 some 60 percent of the island's population will be living in urban areas. The relative percentage change in the Kingston/St. Andrew area will not be great since that area is already over 90 percent urban. St. Catherine will, however,

be two-thirds urban by 1985. By this time also, the urban areas in the rural parishes will have increased to 32 percent from some 19 percent of the total rural population.

2.5.3 Projected Population Change 1970-1985

The estimated increase in the Jamaican population over the period is 670,000 persons. Almost the entire increase is expected to occur in the urban areas. The urban population in Region 1 will increase by 80 percent, while the rural population in this region will increase by 6 percent. The projected overall increase in Region 1 is some 62 percent, while that for Region 2 is 20 percent and that for Jamaica as a whole is some 37 percent. As expected, significant urban growth is indicated, with St. Catherine increasing by some 250 percent and the rural towns increasing by over 100 percent. In terms of absolute numbers, Urban Kingston/St. Andrew is expected to increase by some 250,000 persons, while Urban St. Catherine is expected to gain 155,000 persons. The expected gain in the rural towns is some 223,000 persons.

2.5.4 The Age Structure of the Population, 1970-1985

The method of projection used here does not, of course, facilitate a breakdown of the population by age groups. This is important, however, in attempting to formulate housing policies. Appendix A4.0 indicates that the growth in the population in private households between 1960 and 1970 was almost wholly due to an increase in the number of children below 14 years of age. For the period up to 1990, however, it is expected that the percentage in the 0-14 age group will decline relative to the population in the 15-44 age group. (See Table 2.23.) (The implication of this is that the demands for space, privacy, etc., of the older age group will be greater than if we were simply dealing with children.)

2.5.5 New Household Formation, 1970-1985

New household formation follows closely the growth of the population. In calculating new household formation over the period, the average household size assumed was four persons--that prevailing in the urban areas in 1970. No differentiation was made for the size of new rural households because they form only a small percentage of the overall increase.

Although it could be argued that there is a trend towards larger rural household sizes, as indicated by the 1960-1970 data (Table 2.15), it was felt that this trend will probably slow down over the period because of decreasing fertility rates and the increasing urbanization of the population.

The projections indicate the likelihood of some 167,000 new households over the period for the island as a whole. 110,000 of this increase will occur in Region 1, with the rest (34 percent) occurring in Region 2. Almost the entire increase in new households will probably occur in the urban areas.

2.5.6 Summary

In this section we have attempted to estimate the growth of the population and household formation over the period 1970-1985. In doing this, we have been forced to make assumptions regarding rates of population growth and household size over the period. These estimates are probably subject to errors of the order of ± 6 percent. In future sections (4.0) these estimates are used to derive household need. Before we try to evaluate need, however, we attempt to analyze the character of the existing housing stock and the

changes that have taken place in the stock between 1960 and 1970. It seems not unreasonable to study what we have now before we decide what we need.

TABLE 2.16

Average Annual Rates of Growth Assumed as Basis
for Population Projections, 1970-1985 *

NO. REGION	Average Annual Rate of Growth (Percent)	
	Urban	Rural
1a Kgn./St. Andrew	3.1	1.9
b St. Catherine	8.7	-0.4
c (1a + 1b)	NA	NA
2 Rural Parishes	5.0	0.0
3 Jamaica (1c + 2)	NA	NA

* Table 2.14 figures adjusted. See text.

TABLE 2.17 Range of Variation of Alternative Population Projections, Jamaica, 1970 - 1990

PROJECTION	Population '000				
	1970	1975	1980	1985	1990
1 Roberts #1**	1,854.3	2,143.1	2,517.7	2,994.5	3,561.7
2 Roberts #2**	1,854.3	2,102.7	2,338.0	2,535.4	2,712.5
3 Roberts #3**	1,854.3	1,994.7	2,078.9	2,107.5	2,122.4
4 Author's*	1,826.8	1,998.2	2,216.7	2,496.0	NA
Percentage Differences					
5 (1-4)/4	NA	+7	+14	+20	NA
6 (2-4)/4	NA	+5	+6	+2	NA
7 (3-4)/4	NA	0	-6	-16	NA
8 (1-2)/2	0	+2	+8	+18	+31
9 (3-2)/2	0	-5	-11	-17	-22
10 (4-2)/2	0	-5	-5	-2	NA

Note:* Author's projection includes population in private households only. See Table 2.10.

Source:** See Roberts et al, Recent Population Movements in Jamaica, C.I.C.R.E.D. Series, 1974, World Population Year.

TABLE 2.18

Projected Population in Private Households by Region (Urban and Rural), 1975, 1980, and 1985

NO. REGION	Population in Private Households 1975			Percentage Distribution in Private Households 1975		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	619,900	563,000	56,900	100	91	9
b St. Catherine	211,400	94,500	116,900	100	45	55
c (1a + 1b)	831,300	657,500	173,800	100	79	21
2 Rural Parishes	1,167,400	264,100	903,300	100	23	77
3 Jamaica (1c + 2)	1,998,700	921,600	1,077,100	100	46	54
1980						
1a Kgn./St. Andrew	718,400	655,900	62,500	100	91	9
b St. Catherine	257,900	143,300	114,600	100	56	44
c (1a + 1b)	976,300	799,200	177,100	100	82	18
2 Rural Parishes	1,240,400	337,100	903,300	100	27	73
3 Jamaica (1c + 2)	2,216,700	1,136,300	1,080,400	100	51	49
1985						
1a Kgn./St. Andrew	832,700	764,000	68,700	100	92	8
b St. Catherine	329,800	217,500	112,300	100	66	34
c (1a + 1b)	1,162,500	981,500	181,000	100	84	16
2 Rural Parishes	1,333,500	430,200	903,300	100	32	68
3 Jamaica (1c + 2)	2,496,000	1,411,700	1,084,300	100	57	43

Note: For 1970 base, see Table 2.10. See text for assumptions.

TABLE 2.19

Projected Growth of Population in Private Households by Region (Urban and Rural), 1970 - 1975, 1975 - 1980, and 1980 - 1985*

NO. REGION	Population Growth (Private Households) 1970 - 1975			Percentage Distribu- tion of Population Growth (Private House- holds) 1970 - 1975		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	+84,800	+79,700	+5,100	100	94	6
b St. Catherine	+29,900	+32,300	-2,400	100	108	8
c (1a + 1b)	+114,700	+112,000	+2,700	100	98	2
2 Rural Parishes	+57,200	+57,200	-	100	100	-
3 Jamaica (1c + 2)	+171,900	+169,200	+2,700	100	98	2
1975 - 1980						
1a Kgn./St. Andrew	+98,500	+92,900	+5,600	100	94	6
b St. Catherine	+46,500	+48,800	-2,300	100	105	-5
c (1a + 1b)	+145,000	+141,700	+3,300	100	98	2
2 Rural Parishes	+73,000	+73,000	-	100	100	-
3 Jamaica (1c + 2)	+218,000	+214,700	+3,300	100	98	2
1980 - 1985						
1a Kgn./St. Andrew	+114,300	+108,100	+6,200	100	95	5
b St. Catherine	+71,900	+74,200	-2,300	100	103	-3
c (1a + 1b)	+186,200	+182,300	+3,900	100	98	2
2 Rural Parishes	+93,100	+93,100	-	100	100	-
3 Jamaica (1c + 2)	+279,300	+275,400	+3,900	100	99	1

* Computed from Table 2.18.

TABLE 2.20 Projected Growth of Population in Private Households by Region (Urban and Rural), 1970 - 1985*

NO. REGION	Population Change 1970 - 1985			Percentage Change 1970 - 1985		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	+297,600	+280,700	+16,900	+56	+58	+33
b St. Catherine	+148,300	+155,300	-7,000	+82	+250	-6
c (1a + 1b)	+445,900	+436,000	+9,900	+62	+80	+6
2 Rural Parishes	+223,300	+223,300	-	+20	+108	-
3 Jamaica (1c + 2)	+669,200	+659,300	+9,900	+37	+88	+1

Percentage Distribution of Population Change
1970 - 1985

1a Kgn./St. Andrew	44	43	171	100	94	6
b St. Catherine	22	23	-71	100	105	-5
c (1a + 1b)	67	66	100	100	98	2
2 Rural Parishes	33	34	-	100	100	-
3 Jamaica (1c + 2)	100	100	100	100	99	1

* Computed from Table 2.18.

TABLE 2.21

Projected Housing Need Arising From Household*
Formation, 1970 - 1975, 1975 - 1980, and
1980 - 1985

NO. REGION	Projected New Households 1970 - 1975			Percentage Distribution of New Households 1970 - 1975		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	21,200	19,900	1,300	100	94	6
b St. Catherine	7,500	8,100	-600	100	108	8
c (1a + 1b)	28,700	28,000	700	100	98	2
2 Rural Parishes	14,300	14,300	-	100	100	-
3 Jamaica (1c + 2)	43,000	42,300	700	100	98	2
1975 - 1980						
1a Kgn./St. Andrew	24,600	23,200	1,400	100	94	6
b St. Catherine	11,600	12,200	-600	100	105	-5
c (1a + 1b)	36,200	35,400	800	100	98	2
2 Rural Parishes	18,300	18,300	-	100	100	-
3 Jamaica (1c + 2)	54,500	53,700	800	100	98	2
1980 - 1985						
1a Kgn./St. Andrew	28,600	27,000	1,600	100	95	5
b St. Catherine	18,000	18,500	-600	100	103	-3
c (1a + 1b)	46,500	45,500	1,000	100	98	2
2 Rural Parishes	23,300	23,300	-	100	100	-
3 Jamaica (1c + 2)	69,800	68,800	1,000	100	99	1

* Household size assumed to be four persons.

Source: Computed from Tables 2.19 and 2.20. See text for other assumptions.

TABLE 2.22

Projected Housing Need Arising From Household*
Formation 1970 - 1985

NO. REGION	Projected New Households 1970 - 1985			Percentage Distribution of New Households 1970 - 1985		
	Total	Urban	Rural	Total	Urban	Rural
1a Kgn./St. Andrew	74,400	70,100	4,300	100	94	6
b St. Catherine	37,100	38,800	-1,800	100	105	-5
c (1a + 1b)	111,400	108,900	2,500	100	98	2
2 Rural Parishes	55,900	55,900	-	100	100	-
3 Jamaica (1c + 2)	167,300	164,800	2,500	100	99	1

* Household size assumed to be four persons.

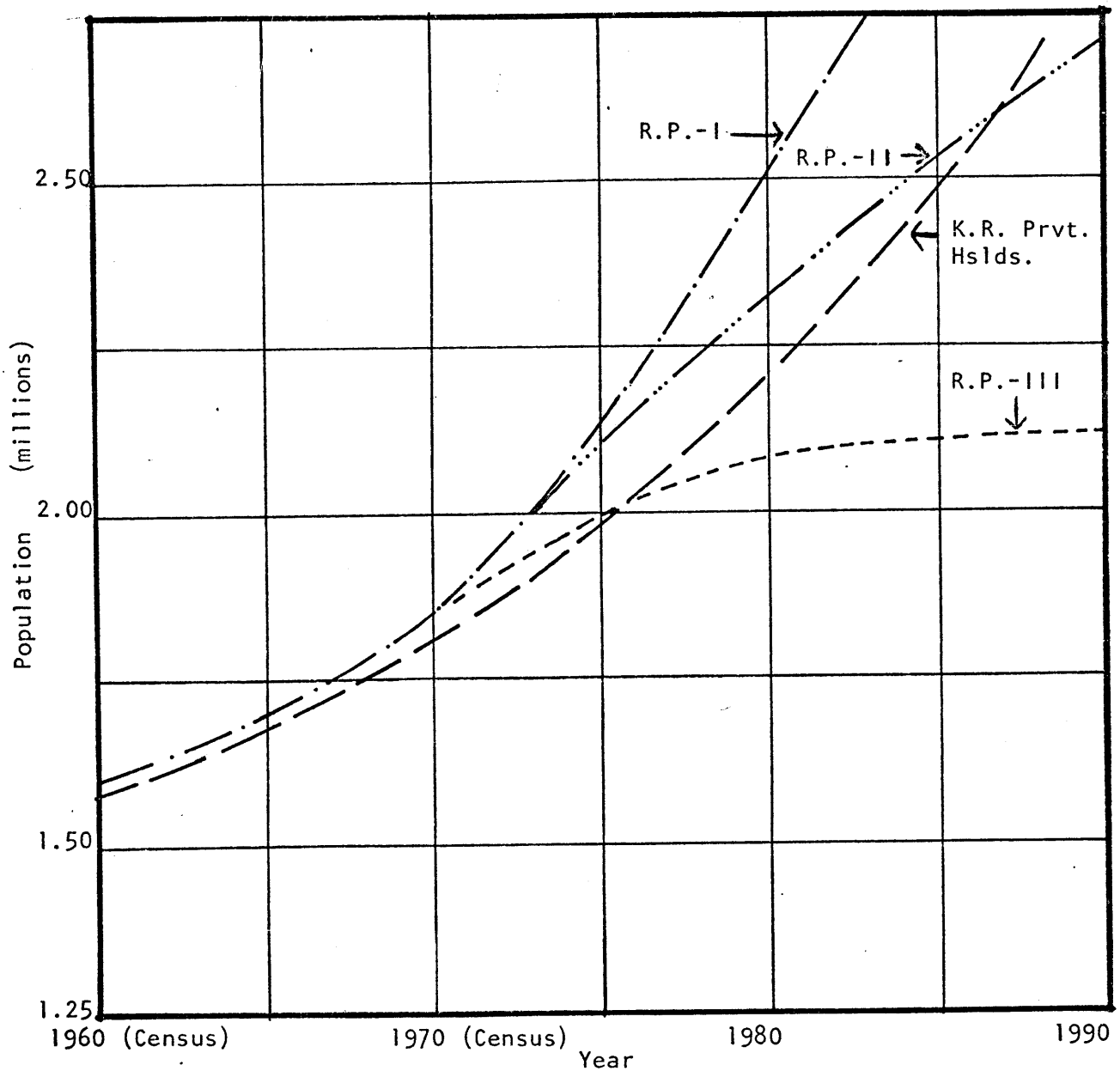
Source: Computed from Tables 2.19, 2.20, and 2.21.

TABLE 2.23 Changing Age Structure of the Population of Jamaica to 1990, According to Projection II (in '000's)

AGE INTERVALS	Percentage Distributions				
	1970 Census	Projections		1985	1990
		1975	1980		
	Male				
0 - 4	16.5	15.1	13.3	11.0	9.8
5 - 14	31.0	29.4	26.3	24.4	21.4
15 - 44	33.9	37.9	43.8	48.7	52.8
45 - 64	13.6	12.4	11.3	10.6	10.8
65+	5.0	5.2	5.3	5.3	5.2
Total	100.0	100.0	100.0	100.0	100.0
	Female				
0 - 4	15.4	14.1	12.5	10.4	9.2
5 - 14	29.2	27.9	24.8	23.1	20.3
15 - 44	35.6	39.0	44.1	48.3	52.0
45 - 64	13.8	12.9	12.4	11.8	12.0
65+	6.0	6.1	6.2	6.4	6.5
Total	100.0	100.0	100.0	100.0	100.0

Note: This Projection assumes constant mortality as of 1969-1970, fertility declines as indicated in the text and no external migration. Discrepancies in some totals are due to rounding.

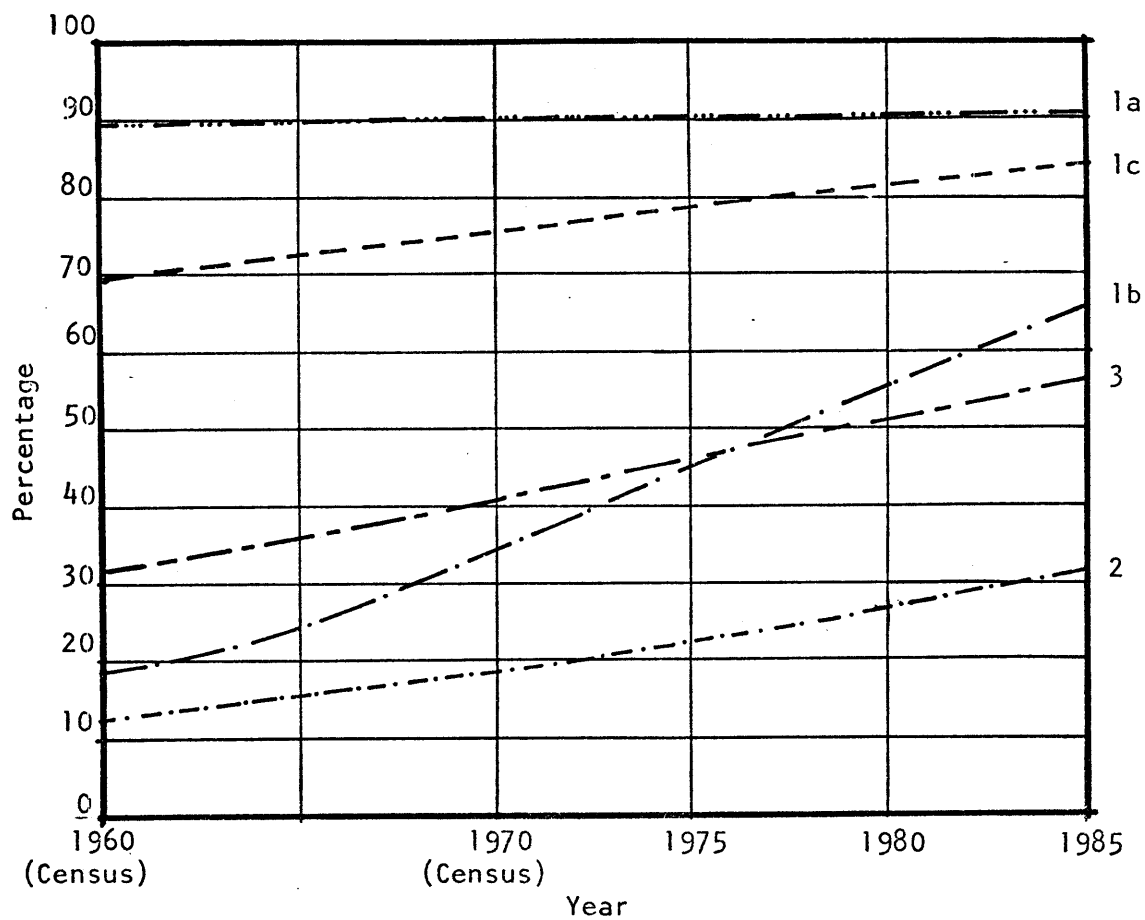
Source: Roberts, et. al., Recent Population Movements in Jamaica, C.I.C.R.E.D. Series World Population Year 1974.



Notes: K.R. Prvt. Hslds. is the projected population in private households used in this thesis.

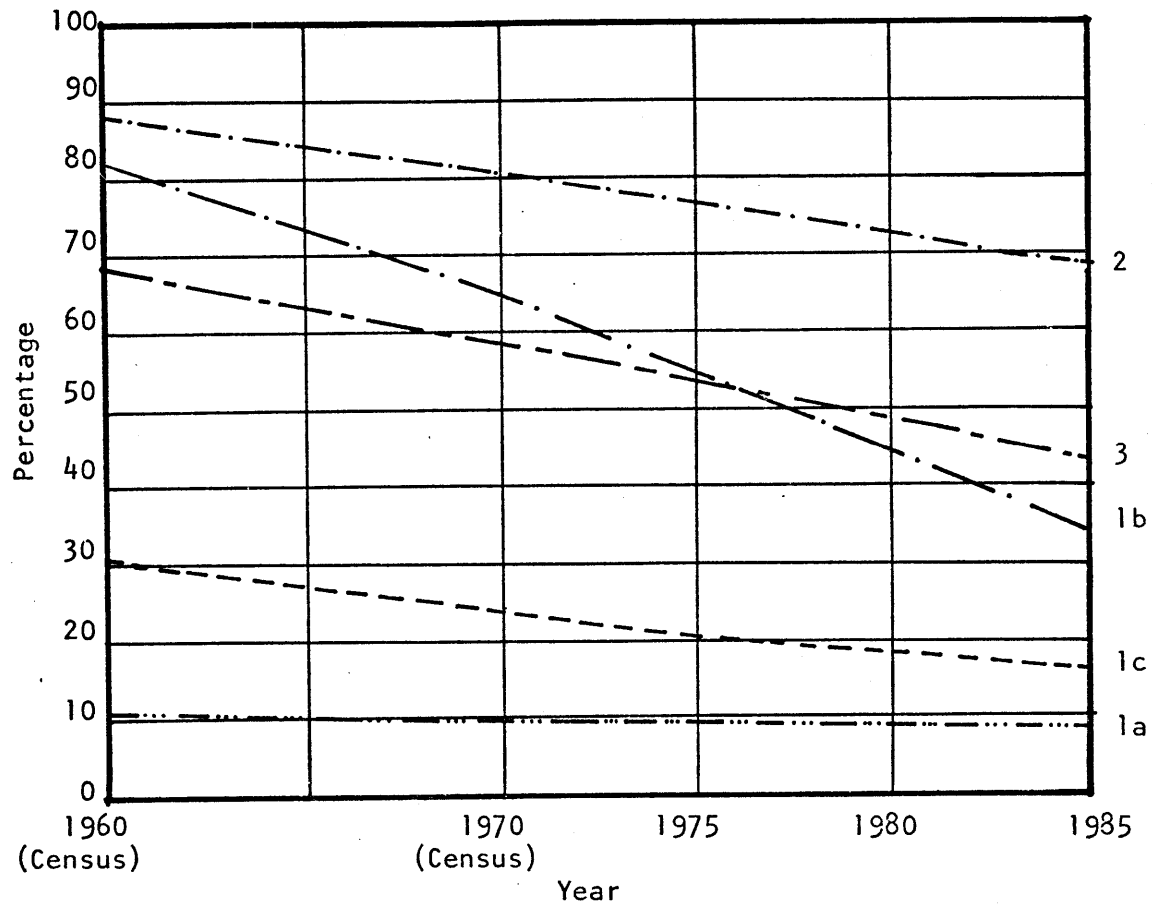
R.P.-I, II and III are projections made by Professor George Roberts, of the University of the West Indies, using alternative assumptions for birth, death and emigration rates. (See Appendix A3.0.)

Figure 2.1 Comparative Population Projections, 1970-1990



Regions: 1a Kgn/St. Andrew
 b St. Catherine
 c (1a + 1b)
 2 Rural Parishes
 3 Jamaica (1c + 2)

Figure 2.2-A Percentage of Population in Private Households, 1960-1970, and Projected 1970-1985, Urban



Régions: 1a Kgn./St. Andrew
 b St. Catherine
 c (1a + 1b)
 2 Rural Parishes
 3 Jamaica (1c + 2)

Figure 2.2-B Percentage of Population in Private Households, 1960-1970, and Projected 1970-1985, Rural

3.0 The Growth and Structure of the Housing Stock, 1960-1970

In this section we attempt an analysis of the housing stock. This examination has a threefold objective.

These may be stated as follows:

- 1) To lay bare the main characteristics;
- 2) To understand the changes that have taken place over the decade 1960-1970;
- 3) To identify potential areas for improvement of the stock.

Objectives 1 and 2 are pursued in this section.

Objective 3 is pursued in Section 4.2 when we deal with upgrading the existing stock.

Housing policy in Jamaica (and in most developing countries), in so far as it can be said that a policy exists, has been characterized by ignorance of the character of the housing stock. We seek, therefore, in this section, to lay a foundation on which to build policy. As such, this section is fundamental to this study. (It is, however, difficult to make exciting reading out of the undertaking. The material lends itself to tedium.)

We examine below the following seven characteristics of the housing stock: tenure patterns; type of dwelling; type of water supply; type and use of toilet facility; size of dwelling; occupancy; and

age of the housing stock. No attempt is made to arrive at an overall assessment of the quality of the stock, first because the notion of housing quality is ambiguous, and second because the available data does not warrant conclusions of this nature. There is no way, for instance, of using available data on the age of the housing stock to make judgements concerning quality. The available data on type of material of walls [6] is not analyzed because there seem to be few useful conclusions that could be drawn from it. Nor do we have 1970 data cross-tabulated by characteristics. Finally, even if all the data were available, weighting of each of the characteristics to arrive at some quality index is fraught with many, perhaps insuperable, problems. Tables 3.01 to 3.34 provide the data relevant to this section, and Appendix A2.0 provides definitions of categories.

3.1 Tenure Patterns, 1960-1970

Two factors were of prime importance here. They were a) ownership of dwellings and b) rentals. Together they account for 90 percent of the housing stock. The analysis encompassed the following additional categories: leased; rent-free; squatter; and other. We examine these categories below by region, urban and

rural, using Tables 3.01 to 3.06.

3.1.1 Ownership

Urban 1960-1970. Tables 3.01 to 3.06 indicate a clear pattern of decreasing levels of ownership with increasing levels of urbanization. Only 23 percent of Kingston/St. Andrew's urban stock was owner-occupied in 1970 while the relevant percentages for St. Catherine, Region 1, Region 2 and Jamaica as a whole, were 33, 24, 44, and 30 percent respectively. Despite the above, there was a significant increase in owner-occupancy in all regions between 1960 and 1970. The highest percentage increase in ownership took place in St. Catherine (+210 percent) and the rural parishes (+93 percent). The rural parishes experienced the highest absolute increase in owner-occupancy (11,109) followed by Kingston/St. Andrew (6,794) and St. Catherine (3,440). Taken as a whole, owner-occupancy in urban Jamaica grew by 62 percent over the decade and led in terms of absolute increase (21,343 dwellings). This absolute increase can be compared with that for urban rentals (19,556 dwellings). Rentals grew by approximately +21 percent, which places this category in third place in terms of percentage growth, behind "rent-free" (+185 percent) and urban

ownership. The absolute increase in urban owner-occupancy represents some 38 percent of the overall increase in the urban housing stock.

Rural, 1960-1970. Ownership in the rural areas was, by far, the predominant mode of tenure. Region 2 led in both absolute and percentage terms. The relevant figures for 1960 and 1970 were 154,863 (71 percent) and 139,295 (71 percent) respectively. As can be seen from the tables, the level of ownership in Region 1 was 64 percent.

The data indicated that there was an absolute decrease in the level of ownership (-23,737, -13 percent) for Jamaica as a whole and that this decrease occurred in each region. The greatest absolute decrease (-15,567) took place in Region 2, while Kingston/St. Andrew experienced the greatest percentage decline (-41 percent). The decline in rural ownership paralleled a decline (regional and overall) for rural dwellings as a whole, while at the same time the rural population was at a virtual standstill. The decline in rural ownership was greatest in absolute terms (though not in percentage terms) exceeding that of the next largest category, urban rentals, by some 5,000 units. In terms of overall percentage decline,

squatting led with 70 percent, though this category was smallest in absolute terms (-1,430).

3.1.2 Rental

Urban, 1960-1970. Renting was an overwhelmingly urban characteristic, comprising some 60 percent of the urban housing stock in 1970. The data indicate that there has been a general decline in the extent of renting relative to other forms of tenure, particularly ownership. The extent of this decline was, however, obscured by the fact that the 1960 data did not include a category for leasing and seemed to have included leasing along with rental under the category "tenanted". It seems probable therefore that the rental category for 1960 overstated the degree of renting. The 1970 data were separated between the two categories.

Despite the problem of categorization, there was a clear pattern of substantially higher levels of renting in Region 1 than in Region 2 (65 to 46 percent in 1970). When we compared urban rentals with rural rentals, it was clear that in percentage terms three times as much renting occurred in urban areas as in rural areas. Furthermore, in 1970, despite the fact that

rural dwellings outnumbered urban dwellings, urban rentals outnumbered rural rentals by three to one (112,082 to 40,558).

In keeping with the pattern already observed, there were absolute and percentage increases in the extent of urban rental, while the reverse pattern was observed in the rural rental stock.

Rural, 1960-1970. As already mentioned, the level of rentals in the rural areas was approximately one-third that of urban. The same pattern of higher rentals in Region 1 (21 percent) than in Region 2 (17 percent) was observed in 1970 and in 1960 (29 percent vs. 21 percent). The differential was not, however, as pronounced in the rural areas as in the urban.

3.1.3 Leasehold

Urban and Rural, 1960-1970. Not much can be said about this form of tenure because of the absence of data for 1960. Overall, in 1970 leasehold tenure accounted for 4 percent of the urban housing stock and 1 percent of the rural housing stock. Clearly also, leasehold was more prevalent in Region 1 than

in Region 2. The relevant figures for 1970 were 5 percent versus 1 percent, urban, and 3 percent versus 1 percent, rural.

Leasehold therefore, like rentals, was predominantly an urban category.

3.1.4 Rent-Free

Urban and Rural, 1960-1970. This category of tenure accounted for 6 percent and 10 percent, respectively, of the urban and rural housing stock in 1970. The relevant percentages for 1960 were 3 percent and 7 percent. There was a 185 percent increase in the extent of urban rent-free holding, while there was a 10 percent increase in the rural areas. When we considered the regions separately, we observed that Region 2 dominated Region 1 Urban in 1960 (5 percent to 2 percent) and in 1970 (8 percent to 5 percent). When we examined the two regions, rural, in 1960 and 1970, the pattern reversed with Region 1 dominating slightly (8 percent to 7 percent in 1960 and 10 percent to 9 percent in 1970).

To summarize then, rent-free occupancy increased between 1960 and 1970 in the urban areas and decreased

in the rural areas. It seemed likely that the increase in the urban areas was at the expense of rentals. Although there was no overwhelming pattern of predominance, it would not be unreasonable to say that rent-free tenure was primarily a phenomenon of the rural areas and the rural towns.

3.1.5 Squatters

Urban and Rural, 1960-1970. Squatting declined generally between 1960 and 1970, but the figures seemed to grossly underestimate this category of tenure. (The figure 562 for Kingston/St. Andrew does not square with experience.) A possible explanation of this was that much of the squatting observed fell under the category of leasehold tenure where the land was in fact leased, though not necessarily by the real owner, while the dwelling was the property of the occupier. Examination of the definition used in the 1970 census (see Appendix A2.0) revealed however, that the tenure of the dwelling was the important factor and not the tenure of the land. The situation, therefore, remained unclear. Given the above problems, the data indicated levels of squatting of 2.3 percent in 1960 and 1 percent in 1970 for the urban housing stock. The level was 1

percent for the rural housing stock for both years. Increases in squatting appear to have taken place largely in St. Catherine.

3.1.6 Other Forms

Urban and Rural, 1960-1970. This is a residual "no fit" category, which was not considered in 1960 but accounted for 1 percent of the housing stock in 1970.

TABLE 3.01

Distribution of Dwellings by Type of Tenure by Region, Urban
(Numerical and Percentage) 1960

NO. REGION		Urban - Type of Tenure 1960						
		Total	Owned	Leased	Rented*	Rent Free	Squatter	Other
1a	Kgn./St. Andrew	95,051	20,659	NA	69,886	2,022	2,484	-
b	St. Catherine	6,162	1,636	NA	4,316	201	9	-
c	(1a + 1b)	101,213	22,295	NA	74,202	2,223	2,493	-
2	Rural Parishes	32,022	11,994	NA	18,324	1,562	142	-
3	Jamaica (1c + 2)	133,235	34,289	NA	92,526	3,785	2,635	-
		Percentages (%)**						
1a	Kgn./St. Andrew	100	22	NA	74	2	3	-
b	St. Catherine	100	27	NA	70	3	-	-
c	(1a + 1b)	100	22	NA	73	2	2	-
2	Rural Parishes	100	37	NA	57	5	-	-
3	Jamaica (1c + 2)	100	26	NA	69	3	2	-

SOURCE: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics, Kingston, Jamaica.

* Appears to include "leased" in 1960 data.

** May not add to totals because of rounding.

TABLE 3.02

Distribution of Dwellings by Type of Tenure by Region - Urban
(Numerical and Percentage) 1970

NO. REGION	Urban - Type of Tenure - 1970							
	Total	Owned	Leased	Rented	Rent-free	Squatter	Other	
1a Kgn./St. Andrew	120,328	27,453	5,602	79,947	5,320	562	1,436	
b St. Catherine	15,439	5,076	968	7,821	1,257	192	125	
c (1a + 1b)	135,767	32,529	6,570	87,768	6,585	754	1,561	
2 Rural Parishes	52,904	23,103	634	24,314	4,206	162	485	
3 Jamaica (1c + 2)	188,671	55,632	7,204	112,082	10,791	916	2,046	
Percentages (%) *								
1a Kgn./St. Andrew	100	23	5	66	4	-	1	
b St. Catherine	100	33	6	51	8	1	1	
c (1a + 1b)	100	24	5	65	5	1	1	
2 Rural Parishes	100	44	1	46	8	-	1	
3 Jamaica (1c + 2)	100	30	4	60	6	-	1	

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.03

Distribution of Dwellings by Type of Tenure by Region, Rural
(Numerical and Percentage), 1960

NO. REGION		Rural - Type of Tenure 1960						
		Total	Owned	Leased	Rented**	Rent-Free	Squatter	Other
1a	Kgn./St. Andrew	18,660	11,764	NA	5,532	927	437	-
b	St. Catherine	32,976	20,436	NA	9,293	3,170	77	-
c	(1a + 1b)	51,636	32,200	NA	14,825	4,097	514	-
2	Rural Parishes	216,900	154,862	NA	44,489	16,010	1,539	-
3	Jamaica (1c + 2)	268,536	187,062	NA	59,314	20,107	2,053	-
		Percentages (%)*						
1a	Kgn./St. Andrew	100	63	NA	30	5	2	-
b	St. Catherine	100	62	NA	28	10	-	-
c	(1a + 1b)	100	62	NA	29	8	1	-
2	Rural Parishes	100	71	NA	21	7	1	-
3	Jamaica (1c + 2)	100	70	NA	22	7	1	-

* May not add to totals because of rounding.

** Appears to include "leased" in 1960 data.

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics, Kingston, Jamaica.

TABLE 3.04

Distribution of Dwellings by Type of Tenure by Region - Rural
(Numerical and Percentage) 1970

NO. REGION	Rural - Type of Tenure - 1970							
	Total	Owned	Leased	Rented	Rent-free	Squatter	Other	
1a Kgn./St. Andrew	10,133	6,991	321	1,966	748	33	74	
b St. Catherine	26,492	17,039	640	5,585	2,955	130	143	
c (1a + 1b)	36,625	24,030	961	7,551	3,703	163	217	
2 Rural Parishes	194,863	139,295	2,336	33,007	18,396	460	1,369	
3 Jamaica (1c + 2)	231,488	163,325	3,297	40,558	22,099	623	1,586	
Percentages (%)*								
1a Kgn./St. Andrew	100	69	3	19	7	-	1	
b St. Catherine	100	64	2	21	11	-	1	
c (1a + 1b)	100	66	3	21	10	-	1	
2 Rural Parishes	100	71	1	17	9	-	1	
3 Jamaica (1c + 2)	100	71	1	18	10	-	1	

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.05

Changes in the Distribution of Population, Dwellings and Type of Tenure
by Region, Urban (Numerical and Percentage) 1960 - 1970*

NO. REGION	Urban Popula- tion Total	Urban Dwellings Total	1960 - 1970 Changes by Type of Tenure					
			Owned	Leased*	Rented*	Rent Free	Squatter	Other**
1a Kgn./St. Andrew	+127,213	+25,277	+6,794	+5,602	+10,061	+3,306	-1,922	+1,436
b St. Catherine	+35,236	+9,277	+3,440	+968	+3,505	+1,056	+183	+125
c (1a + 1b)	+162,449	+34,554	+10,234	+6,570	+13,566	+4,362	-1,739	+1,561
2 Rural Parishes	+79,520	+20,882	+11,109	+634	+5,990	+2,644	+20	+485
3 Jamaica (1c + 2)	+241,969	+55,436	+21,343	+7,204	+19,556	+7,006	-1,719	+2,046
Percentage Changes 1960 - 1970								
1a Kgn./St. Andrew	+36	+27	+33	NA	+14	+164	-77	NA
b St. Catherine	+130	+151	+210	NA	+81	+525	+2,033	NA
c (1a + 1b)	+42	+34	+46	NA	+18	+196	-70	NA
2 Rural Parishes	+62	+65	+93	NA	+33	+169	+14	NA
3 Jamaica (1c + 2)	+47	+42	+62	NA	+21	+185	-65	NA

* Computed from Tables 3.01 and 3.02.

TABLE 3.06

Changes in the Distribution of Population, Dwellings and Type of Tenure
by Region, Rural (Numerical and Percentage) 1960 - 1970*

NO. REGION	Rural Popula- tion Total	Rural Dwellings Total	1960 - 1970 Changes by Type of Tenure					
			Owned	Leased*	Rented*	Rent Free	Squatter	Other**
1a Kgn./St. Andrew	+8,901	-8,527	-4,773	+321	-3,566	-179	-404	+74
b St. Catherine	-5,381	-6,484	-3,397	+640	-3,708	-215	+53	+143
c (1a + 1b)	+3,520	-15,011	-8,170	+961	-7,274	-394	-351	+217
2 Rural Parishes	+1,497	-22,037	-15,567	+2,336	-11,482	+2,386	-1,079	+1,369
3 Jamaica (1c + 2)	+5,017	-37,048	-23,737	+3,297	-18,756	+1,992	-1,430	+1,586
Percentage Changes 1960 - 1970								
1a Kgn./St. Andrew	+21	-46	-41	NA	-64	-19	-92	NA
b St. Catherine	-4	-20	-17	NA	-40	-7	+69	NA
c (1a + 1b)	+2	-29	-25	NA	-49	-10	-68	NA
2 Rural Parishes	-	-10	-10	NA	-26	+15	-70	NA
3 Jamaica (1c + 2)	-	-14	-13	NA	-32	+10	-70	NA

* Computed from Tables 3.03 and 3.04.

3.2 Type of Dwelling, 1960-1970

Analysis of dwelling by type of dwelling was complicated by the fact that one category, i.e., "tenements", which was present in the data for 1960, was eliminated from consideration in 1970. The effect of this omission seemed to be an overstatement of the category "separate house" in the 1970 data. Apart from the above-mentioned categories the other category of significance was "flat/apartment". The data encompassed the following additional categories: "barracks"; "outroom"; and "other". (See Appendix A2.0.)

We examine these categories below by region, urban and rural. Tables 3.07 to 3.12 give details of the data which are discussed in this section.

3.2.1 "Separate House"

Urban, 1960-1970. In 1960 "separate house" was the largest overall category (49,280 units --37 percent) of dwelling. This was followed by "tenement" which comprised some 48,223 units or 36 percent of the housing stock. The elimination of the category "tenement" from the 1970 data clouded the analysis considerably since it was not possible to say with

certainty that the increase observed in the "separate house" category between 1960 and 1970 was due to an increase in this category alone. It seemed probable that part of the increase over the period (from 49,250, 37 percent, to 122,759, 65 percent) was due to inclusion of "tenement" in the "separate house" category for 1970. Examination of the 1970 housing stock for this category was not very fruitful.

When we examined the 1960 housing stock, it was clear that "separate house" comprised a greater percentage (51 percent) of the housing stock in Region 2 than that for Region 1 (33 percent). The relevant percentages for Kingston/St. Andrew and St. Catherine were 32 percent and 36 percent, respectively. In absolute terms, Kingston accounted for 93 percent of the Region 1 housing stock. When we compared the urban distribution with the rural distribution, the same general pattern held for 1970 with the exception that the Region 1 percentage is more than doubled (to 74 percent) while the Region 2 percentage increased from 51 percent to 80 percent.

Rural, 1960-1970. The categorization problems already mentioned in the previous section held for rural housing as well. The 1970 data were therefore not dealt with in

detail. Because, however, of the predominance of separate houses in the rural areas and the relative insignificance of tenements, the margin of error for the 1970 "separate house" category was probably relatively small (6 percent to 9 percent).

Examination of 1960 data revealed that this category comprised, by far, the largest part of the rural housing stock (79 percent, 212,447 units). There was a general decline between 1960 and 1970 in keeping with the pattern of decrease in rural dwellings, but for reasons outlined above it was not possible to be specific on this issue. As was observed for urban dwellings in 1960, Region 2 dominated Region 1 in percentage terms (80 percent to 74 percent). Unlike urban dwellings, however, Region 2 rural dwellings dominated in an absolute sense as well (174,447 to 38,000). The relevant urban figures were 16,273 and 33,007 for Region 2 and Region 1, respectively. St. Catherine dominated the Region 1 housing stock in the absolute sense with 62 percent (23,903) of the total.

3.2.2 "Flat/Apartment"

Urban, 1960-1970. The categorization problem that arose for "separate house" and "tenement" for 1970

data may be present in this category as well. Caution must therefore be exercised in interpreting the 1970 data. Examination of the 1960 data revealed that "flat/apartment" was the third largest overall (Jamaica) category representing some 22 percent of the urban housing stock, with only "separate house" and "tenement" comprising larger categories --37 percent and 36 percent, respectively. Compared with rural housing in 1960, "flat/apartment" was much larger in percentage terms (22 percent to 9 percent). In absolute terms the differences between the two areas were not as great (28,716 to 25,494 for urban and rural, respectively). If the regions are examined separately for 1960, there were three times as many "flat/apartments" in Region 1 as there were in Region 2 (22,646 versus 6,070). Of the Region 1 total, 21,207 or 94 percent was accounted for by Kingston/St. Andrew. Examination of 1970 data revealed that Region 1 was again larger than Region 2. St. Catherine suffered a relative percentage decline from 23 percent in 1960 to 16 percent in 1970. It did, however, grow in absolute terms by 76 percent over the period.

Rural, 1960-1970. This category comprised some 9 percent of the rural housing stock and 6 percent in 1970. Although this ranked "flat/apartment" second

in importance in the rural housing stock, its significance was overwhelmed by the extent of "separate housing", which accounted for 79 percent and 88 percent, respectively, in 1960 and 1970. Region 1 was somewhat more significant in percentage terms than Region 2 in both years, but in absolute terms the reverse situation held with housing stock in Region 2 far outnumbering that in Region 1.

3.2.3 "Tenement"

Urban, 1960-1970. For reasons already stated, we could not assess the extent of this category in 1970 and thus for like reasons we did not consider growth over the period. "Tenement" dwelling was, however, the second most important category in 1960, being only approximately 1,000 units less than "separate house". In fact, tenements outnumbered "separate house" in Region 1. Most of this was accounted for by Kingston/St. Andrew. Clearly this form of occupancy is a significant urban phenomenon. Furthermore, it is not unreasonable to assume that tenements were not equally divided across the population but were probably the predominant form of occupancy of low income urban households. The omission of this category from the 1970 census data thus created a serious information gap.

Rural, 1960-1970. This category comprised some 6 percent of the rural housing stock in 1960. More than 70 percent of the units (12,057) were located in Region 2. This was, however, insignificant compared with the "separate house" category which comprised some 212,693 units or 79 percent of the rural housing stock.

3.2.4 "Barracks", "Outroom", and "Other", 1960-1970.

These categories were insignificant in 1960, comprising together some 5 percent of the urban housing stock and 3 percent of the rural. "Barracks" was a mainly rural category reflecting the prevalence of this category on the sugar estates. "Outrooms" were predominantly a Kingston/St. Andrew urban category, while Region 2 dominated the rural areas.

TABLE 3.07

Distribution of Dwellings by Type of Dwelling by Region - Urban
(Numerical and Percentage) 1960

NO. REGION	Urban - Type of Dwelling - 1960						
	Total	Separate House	Flat/ Apartment	Barracks	Outroom	Tenement	Other
1a Kgn./St. Andrew	95,051	30,769	21,207	56	2,421	38,090	2,508
b St. Catherine	6,162	2,238	1,439	20	188	2,061	216
c (1a + 1b)	101,213	33,007	22,646	76	2,609	40,151	2,724
2 Rural Parishes	32,022	16,273	6,070	171	560	8,072	876
3 Jamaica (1c + 2)	133,235	49,280	28,716	247	3,169	48,223	3,600
Percentages (%)*							
1a Kgn./St. Andrew	100	32	22	-	3	40	3
b St. Catherine	100	36	23	-	3	33	4
c (1a + 1b)	100	33	22	-	3	40	3
2 Rural Parishes	100	51	19	-	2	25	3
3 Jamaica (1c + 2)	100	37	22	-	2	36	3

* May not add to totals because of rounding.

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics Kingston, Jamaica.

TABLE 3.08

Distribution of Dwellings by Type of Dwelling by Region - Urban
(Numerical and Percentage) 1970

NO. REGION		Urban - Type of Dwelling - 1970						
		Total	Separate House**	Flat/ Apartment	Barracks	Outroom	Tenement**	Other
1a	Kgn./St. Andrew	120,328	71,952	39,698	156	1,632	n/a	6,890
b	St. Catherine	15,439	11,884	2,534	179	226	n/a	616
c	(1a + 1b)	135,767	83,836	42,232	335	1,858	n/a	7,506
2	Rural Parishes	52,904	38,923	9,964	523	560	n/a	2,934
3	Jamaica (1c + 2)	188,671	122,759	52,196	858	2,418	n/a	10,440
Percentages (%)*								
1a	Kgn./St. Andrew	100	60	33	-	1	n/a	6
b	St. Catherine	100	77	16	1	1	n/a	4
c	(1a + 1b)	100	62	31	-	1	n/a	6
2	Rural Parishes	100	74	19	1	1	n/a	6
3	Jamaica (1c + 2)	100	65	28	-	1	n/a	6

* May not add to totals because of rounding.

** The "separate house" category appears to include "tenement" in 1970.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.09

Distribution of Dwellings by Type of Dwelling by Region - Rural
(Numerical and Percentage) 1960

NO. REGION	Rural - Type of Dwelling - 1960						
	Total	Separate House	Flat/ Apartment	Barracks	Outroom	Tenement	Other
1a Kgn./St. Andrew	18,660	14,343	2,453	20	265	1,321	258
b St. Catherine	32,976	23,903	3,572	1,029	400	3,472	600
c (1a + 1b)	51,636	38,246	6,025	1,049	665	4,793	858
2 Rural Parishes	216,900	174,447	19,469	4,936	2,259	12,057	3,732
3 Jamaica (1c + 2)	268,536	212,693	25,494	5,985	2,924	16,850	4,590
Percentages (%)*							
1a Kgn./St. Andrew	100	77	13	-	1	7	1
b St. Catherine	100	72	11	3	1	11	2
c (1a + 1b)	100	74	12	2	1	9	2
2 Rural Parishes	100	80	9	2	1	6	2
3 Jamaica (1c + 2)	100	79	9	2	1	6	2

* May not add to totals because of rounding.

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics, Kingston, Jamaica.

TABLE 3.10

Distribution of Dwellings by Type of Dwelling by Region - Rural
(Numerical and Percentage) 1970

NO. REGION	Rural - Type of Dwelling - 1970						
	Total	Separate House**	Flat/ Apartment	Barracks	Outroom	Tenement**	Other
1a Kgn./St. Andrew	10,133	9,106	604	5	75	n/a	343
b St. Catherine	26,492	22,963	2,052	394	234	n/a	849
c (1a + 1b)	36,625	32,069	2,656	399	309	n/a	1,192
2 Rural Parishes	194,863	172,828	12,231	1,966	1,342	n/a	6,496
3 Jamaica (1c + 2)	231,488	204,897	14,887	2,365	1,651	n/a	7,688
Percentages (%)*							
1a Kgn./St. Andrew	100	90	6	-	1	n/a	3
b St. Catherine	100	87	8	1	1	n/a	3
c (1a + 1b)	100	88	7	1	1	n/a	3
2 Rural Parishes	100	88	6	1	1	n/a	3
3 Jamaica (1c + 2)	100	88	6	1	1	n/a	3

* May not add to totals because of rounding.

** The "separate house" category appears to include "tenement" in 1970.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.11

Changes in the Distribution of Dwellings by Type of Dwelling
by Region, Urban (Numerical and Percentage), 1960-1970

NO. REGION	Urban Popula- tion Total	Urban Dwellings Total	1960-1970 Changes by Type of Dwelling					
			Separate House*	Flat/ Apartment	Barracks	Outroom	Tenement*	Other
1a Kgn./St. Andrew	+127,213	+25,277	+41,183	+18,491	+100	-789	-38,090	+4,382
b St. Catherine	+35,236	+9,277	+9,646	+1,095	+159	+38	-2,061	+400
c (1a + 1b)	+162,449	+34,554	+50,829	+19,586	+259	-751	-40,151	+4,782
2 Rural Parishes	+79,520	+20,882	+22,650	+3,894	+352	-	-8,072	+2,058
3 Jamaica (1c + 2)	+241,969	+55,436	+73,479	+23,480	+611	-751	-48,223	+6,840
Percentage Changes, 1960-1970								
1a Kgn./St. Andrew	+36	+27	+134	+87	+179	-33	NA	+175
b St. Catherine	+130	+151	+431	+76	+795	+20	NA	+185
c (1a + 1b)	+42	+34	+154	+86	+341	-29	NA	+176
2 Rural Parishes	+62	+65	+139	+64	+206	-	NA	+235
3 Jamaica (1c + 2)	+47	+42	+149	+82	+247	-24	NA	+190

* The "separate house" category appears to include "tenement" in 1970.

Source: Computed from Tables 3.07 and 3.08.

TABLE 3.12

Changes in the Distribution of Dwellings by Type of Dwelling
by Region, Rural (Numerical and Percentage) 1960 - 1970

NO. REGION	Rural Popula- tion Total	Rural Dwellings Total	1960 - 1970 Changes by Type of Dwelling					
			Separate* House	Flat/ Apartment	Barracks	Outroom	Tenement* Other	Other
1a Kgn./St. Andrew	+8,901	-8,527	-5,237	-1,849	-15	-190	-1,321	+85
b St. Catherine	-5,381	-6,484	-940	-1,520	-635	-166	-3,972	+249
c (1a + 1b)	+3,520	-15,011	-6,177	-3,369	-650	-356	-4,793	+334
2 Rural Parishes	+1,497	-22,037	-1,619	-7,238	-2,970	-917	-12,057	+2,764
3 Jamaica (1c + 2)	+5,017	-37,048	-7,796	-10,607	-3,620	-1,273	-16,850	+3,098
Percentage Changes 1960 - 1970								
1a Kgn./St. Andrew	+21	-46	-37	-75	-75	-72	NA	+33
b St. Catherine	-4	-20	-4	-43	-62	-42	NA	+42
c (1a + 1b)	+2	-29	-16	-56	-62	-54	NA	+39
2 Rural Parishes	-	-10	-1	-37	-15	-41	NA	+75
3 Jamaica (1c + 2)	-	-14	-4	-42	-21	-44	NA	+67

* The "separate house" category appears to include "tenement" in 1970.

Source: Computed from Tables 3.09 and 3.10.

3.3 Type of Water Supply, 1960-1970

The important urban categories here were "piped into yard" and "piped into dwelling", as shown in Tables 3.13 to 3.18. The important rural categories were "public standpipe" and "other". Surprisingly, there appeared to be a decline in both absolute and percentage terms in the number of units with water supply piped into the dwelling in urban Kingston/St. Andrew. It is not clear why this should have occurred. It seems possible that the observed decline was due to data collection and/or categorization errors in one or both sets of census data. It is difficult to believe that almost 3,000 dwellings with internally piped water were removed from Kingston/St. Andrew's housing stock between 1960 and 1970. This is particularly so because these dwellings would probably have been among the newer and/or better quality dwellings in the urban housing stock. Demolitions in the housing stock were confined largely to slum clearance --usually tenements or squatters with little or no internal water supply. The anomaly was made even more difficult to explain when, in fact, the housing stock of Kingston/St. Andrew increased by 27 percent (25,277 units) during the period.

When we looked at the category "piped into yard", another anomaly was observed. The absolute increase in this category was greater than the absolute increase in dwellings in Kingston/St. Andrew. Clearly, something was amiss here. A possible explanation is that there was confusion between the "piped into dwelling" and "piped into yard" categories for 1970 Kingston/St. Andrew.

With the above in mind, we proceed to analyze the data by region. The only category that will be dealt with below that has not already been mentioned is "private catchment, not piped". It should also be mentioned that the data for "piped into dwelling" included both public and private supply systems. These were not differentiated.

3.3.1 "Piped into Dwelling"

Urban, 1960-1970. Because of anomalies already dealt with, it was hazardous to evaluate this category for 1970 data particularly with regard to urban Region 1. In 1960, 51 percent of the urban housing stock had water piped into the dwelling. It is unlikely that there was either the absolute or percentage decrease indicated by 1970 data. Quite the reverse probably

occurred, i.e., greater than 51 percent of the stock had water piped into the dwelling in 1970. This cannot, however, be substantiated with existing data. St. Catherine (1b) and Region 2 both experienced considerable increases over the period. These amounted to 2,744 and 7,902, respectively (118 percent and 145 percent). These figures represented less than one-third of the housing stock added in urban St. Catherine and approximately two-fifths of the housing stock added in Region 2. Though the above cautions must be borne in mind, it seemed possible that the majority of housing stock added in the rural towns (also St. Catherine) did not have water piped into the dwelling although most did have water piped into the yard.

The difference between Region 1 and Region 2 in 1960 was tremendous, with 62 percent (62,754 units) as opposed to 17 percent (5,666 units) in Regions 1 and 2, respectively. Furthermore, in Region 1 Kingston/St. Andrew accounted for 98 percent of the units in this category, with St. Catherine closely following the pattern of Region 2.

Rural, 1960-1970. The data indicated that 6 percent of the rural housing stock fell into this category in 1960 and also in 1970. They also indicated an

absolute and percentage decline in Region 1 over the period due wholly to declines in Kingston/St. Andrew. Furthermore, it seemed that approximately one-half of the decline in Kingston/St. Andrew's housing stock was in this category. Caution seemed advisable here once again for reasons already dealt with. Despite the general decline in the rural housing stock for St. Catherine (lb) and Region 2, increases were observed in this category in both areas absolutely and also in percentage terms. Examination of the 1960 data indicated a pattern similar to the urban pattern for this category with Region 1 dominating Region 2 and Kingston/St. Andrew dominating Region 1, accounting for 90 percent of this region. Although there were substantial percentage differences between the two regions (16 percent in Region 1 as opposed to 4 percent in Region 2), the absolute differences were relatively small (8,096 against 7,834 units in Regions 1 and 2, respectively).

Clearly, this category was urban, dominated as it was by Kingston/St. Andrew which accounted for 73 percent of the entire housing stock in this category (urban and rural combined) in 1960.

3.3.2 "Piped into Yard"

Urban, 1960-1970. This was the second largest category in 1960 and, on the basis of available data, was the largest category in 1970. As already stated, however, the 1970 figures must be viewed with caution. Kingston/St. Andrew dominated the Region 1 housing stock in 1960 and Region 1 dominated Region 2 in absolute, though quite the reverse was the case in percentage, terms. In these latter terms it was clear that this category was the dominant urban water supply mode in St. Catherine (74 percent) and also in Region 2 (51 percent). The data indicated that there was a 29 percent increase in this category for Region 2 over the 1960-1970 period. The dramatic increases indicated for Region 1 were dubious, however. Urban/rural comparisons in 1960 clearly indicated that this category, like "piped into dwelling", was a predominantly urban phenomenon with Kingston/St. Andrew dominating numerically but not nearly to the extent that was the case for "piped into dwelling" (only 37 percent of the combined rural and urban stock was in this category).

Rural, 1960-1970. Only 7 percent of the rural housing stock in 1960 had water "piped into yard". The

percentages were significantly higher in Region 1 than in Region 2. In Region 1, 14 percent of Kingston/St. Andrew's rural housing stock fell into this category. The relevant percentage for St. Catherine was 11 percent, while that for Region 2 was 4 percent. 1970 data showed an overall relative percentage increase. In absolute and percentage terms, however, Region 1 declined by 1,304 units (-20 percent), while Region 2 increased by +20 percent in spite of a decline in the total number of units in Region 2 during the 1960-1970 period. Part of the decline in Region 1 may have been due to redefinitions of the urban boundaries and the inclusion of some of the rural housing stock into the urban area.

3.3.3 "Private Catchment, Not Piped"

Urban and Rural, 1960-1970. Although this was an insignificant urban category in both 1960 and 1970, it accounted for some 10 percent of the rural housing stock. This was clearly also a Region 2 phenomenon, with the rural areas accounting for more than 80 percent of the combined urban and rural housing stock in this category.

3.3.4 "Public Standpipe"

Urban, 1960-1970. This was the third largest urban category in 1960 and in 1970, accounting for 12 percent of the urban housing stock in both years. In 1960 Region 2 dominated in percentage terms (24 percent to 8 percent in Region 1) but was slightly less than Region 1 in absolute terms. Over the period the data indicated that the number of dwellings falling into this category in Kingston/St. Andrew declined by 79 percent (some 823 dwellings). This probably indicated an improvement which is reflected in the "piped into yard" category.

Rural, 1960-1970. This category was the predominant mode of water supply for the rural housing stock in both regions for 1960 and 1970. In Region 2 approximately one-half of the rural housing stock fell into this category. For Region 1, the relevant figure was approximately one-third of that region's rural housing stock. (The data gave no indication of the relative accessibility of the standpipe so it was not possible to assess this problem. The category also included public standpipe and public tanks.

3.3.5 "Other"

Urban and Rural, 1960-1970. This category was a residual one which included rivers, springs, ponds, etc., along with data from the "not stated" category. This latter category comprised some 5 percent of the "other" category in 1970. There was no "not stated" category in the 1960 data. Despite inclusion of the "not stated" data, it seems clear that this ("other") category was the second most important in the rural housing stock. It was insignificant for the urban housing stock, however. Some 30 percent of the rural housing stock fell into this category in 1960. Declines over the period in this category (as well as overall) resulted in the 1970 percentages in this category falling to some 20 percent of the rural housing stock.

TABLE 3.13

Distribution of Dwellings by Type of Water Supply by Region, Urban
(Numerical and Percentage) 1960

NO. REGION	Urban - Type of Water Supply 1960					
	Total	Piped into Dwelling	Piped into Yard	Private Catchment	Public Standpipe	Other
1a Kgn./St. Andrew	95,051	61,788	24,152	1,038	8,020	53
b St. Catherine	6,162	966	4,553	80	467	96
c (1a + 1b)	101,213	62,754	28,705	1,118	8,487	149
2 Rural Parishes	32,022	5,466	16,349	1,391	7,835	981
3 Jamaica (1c + 2)	133,235	68,220	45,054	2,509	16,322	1,130
	Percentage *					
1a Kgn./St. Andrew	100	65	25	1	8	-
b St. Catherine	100	16	74	1	8	2
c (1a + 1b)	100	62	28	1	8	-
2 Rural Parishes	100	17	51	4	24	3
3 Jamaica (1c + 2)	100	51	34	2	12	1

* May not add to totals because of rounding.

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics, Kingston, Jamaica.

TABLE 3.14

Distribution of Dwellings by Type of Water Supply by Region - Urban
(Numerical and Percentage) 1970

NO. REGION	Urban - Type of Water Supply 1970					
	Total	Piped into Dwelling	Piped into Yard	Private Catchment Not Piped	Public Standpipe	Other
1a Kgn./St. Andrew	120,328	28,829	52,532	215	6,921	1,831
b St. Catherine	15,439	3,710	8,229	100	2,604	796
c (1a + 1b)	135,767	62,539	60,761	315	9,525	2,627
2 Rural Parishes	52,904	13,368	21,013	2,295	13,267	2,961
3 Jamaica (1c + 2)	188,671	75,907	81,774	2,610	22,792	5,588
Percentages (%)*						
1a Kgn./St. Andrew	100	49	44	-	6	2
b St. Catherine	100	24	53	1	17	5
c (1a + 1b)	100	46	45	-	7	2
2 Rural Parishes	100	25	40	4	25	6
3 Jamaica (1c + 2)	100	40	43	1	12	3

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.15

Distribution of Dwellings by Type of Water Supply by Region, Rural
(Numerical and Percentage) 1960

NO. REGION	Rural - Type of Water Supply 1960					
	Total	Piped into Dwelling	Piped into Yard	Private Catchment	Public Standpipe	Other
1a Kgn./St. Andrew	18,660	6,461	2,703	359	5,538	3,599
b St. Catherine	32,976	1,635	3,663	1,057	13,784	12,837
c (1a + 1b)	51,636	8,096	6,366	1,416	19,322	16,436
2 Rural Parishes	216,900	7,834	13,038	25,094	101,180	69,754
3 Jamaica (1c + 2)	268,536	15,930	19,404	26,510	126,502	86,190
	Percentage *					
1a Kgn./St. Andrew	100	35	14	2	30	19
b St. Catherine	100	5	11	3	42	39
c (1a + 1b)	100	16	12	3	37	32
2 Rural Parishes	100	4	6	12	47	32
3 Jamaica (1c + 2)	100	6	7	10	45	32

* May not add to totals because of rounding.

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics, Kingston, Jamaica.

TABLE 3.16

Distribution of Dwellings by Type of Water Supply by Region - Rural
(Numerical and Percentage) 1970

NO. REGION	Rural - Type of Water Supply 1970					
	Total	Piped into Dwelling	Piped into Yard	Private Catchment Not Piped	Public Standpipe	Other
1a Kgn./St. Andrew	10,133	1,969	1,444	447	4,380	1,893
b St. Catherine	26,492	1,798	3,618	1,643	9,882	9,551
c (1a + 1b)	36,625	3,767	5,062	2,090	14,262	11,444
2 Rural Parishes	194,863	11,046	15,671	24,323	99,758	44,065
3 Jamaica (1c + 2)	231,488	14,813	20,733	26,413	114,020	55,509
Percentages (%)*						
1a Kgn./St. Andrew	100	19	14	4	43	19
b St. Catherine	100	7	14	6	37	36
c (1a + 1b)	100	10	14	6	39	31
2 Rural Parishes	100	6	8	12	51	23
3 Jamaica (1c + 2)	100	6	9	11	49	24

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.17

Changes in the Distribution of Population, Dwellings, and Type of Water Supply by Region, Urban (Numerical and Percentage) 1960 - 1970

NO. REGION	Urban Population	Urban Dwellings	1960 - 1970 Changes by Type of Water Supply				
			Piped into Dwelling	Piped into Yard	Private Catchment Not Piped	Public Standpipe	Other
1a Kgn./St. Andrew	+127,213	+25,277	-2,959	+28,380	-823	-1,099	+1,778
b St. Catherine	+35,236	+9,277	+2,744	+3,676	+20	+2,137	+700
c (1a + 1b)	+162,449	+34,554	-215	+32,056	-803	+1,038	+2,478
2 Rural Parishes	+79,520	+20,882	+7,902	+4,664	+904	+5,432	+1,980
3 Jamaica (1c + 2)	+241,969	+55,436	+7,687	+36,720	+101	+6,470	+4,458
Percentage Changes 1960 - 1970							
1a Kgn./St. Andrew	+36	+27	-5	+118	-79	-14	+3,355
b St. Catherine	+130	+151	+284	+81	+25	+458	+729
c (1a + 1b)	+42	+34	-	+112	-72	+12	+1,663
2 Rural Parishes	+62	+65	+145	+29	+65	+69	+202
3 Jamaica (1c + 2)	+47	+42	+11	+82	+4	+40	+395

Source: Computed from Tables 3.13 and 3.14.

TABLE 3.18

Changes in the Distribution of Population, Dwellings and Type of Water Supply by Region, Rural (Numerical and Percentage) 1960 - 1970

NO. REGION	Rural Population	Rural Dwellings	1960 - 1970 Changes by Type of Water Supply				
			Total	Total	Piped into Dwelling	Piped into Yard	Private Catchment Not Piped
1a Kgn./St. Andrew	+8,901	-8,527	-4,492	-1,259	+88	-1,158	-1,706
b St. Catherine	-5,381	-6,484	+163	-45	+586	-3,902	-3,286
c (1a + 1b)	+3,520	-15,011	-4,329	-1,304	+674	-5,060	-4,992
2 Rural Parishes	+1,497	-22,037	+3,212	+2,633	-771	-1,422	-25,689
3 Jamaica (1c + 2)	+5,017	-37,048	-1,117	+1,329	-97	-6,482	-30,681
Percentage Changes 1960 - 1970							
1a Kgn./St. Andrew	+21	-46	-70	-47	+25	-21	-47
b St. Catherine	-4	-20	+10	-1	+55	-28	-26
c (1a + 1b)	+2	-29	-53	-20	+48	-26	-30
2 Rural Parishes	-	-10	+41	+20	-3	-1	-37
3 Jamaica (1c + 2)	-	-14	-7	+7	-	-5	-36

Source: Computed from Tables 3.15 and 3.16.

3.4 Type and Use of Toilet Facility, 1960-1970

The data, as shown in Tables 3.19 to 3.23, indicated that "W.C." was the predominant type of toilet facility in the urban areas with Kingston/St. Andrew completely dominating the urban picture for 1960 and 1970. In 1970 over 75 percent of the total number of W.C.'s in the entire island (urban and rural) were located in Kingston/St. Andrew. Although there were significant increases in this category for the island as a whole, there was no significant shift in this pattern of dominance over the 1960-1970 period. An anomaly occurs in the data for "W.C." Kingston indicating that "W.C.'s" increased more than the total increase in dwellings (37,601 to 25,277). While this might have been due to conversions in the existing stock, the number seems suspiciously large. It seems possible that "W.C." was overstated in 1970 at the expense of "pit" which may have been understated. Caution is therefore advised in interpreting the data.

Pit latrines were clearly the predominant type of toilet facility in the rural areas --including the rural towns (i.e., Region 2 Urban). (In the context within which it is used here "pit" refers to pit

latrine. "W.C." does not necessarily imply the existence of a public sewer system. The sewer system in Kingston/St. Andrew serves only a small, though dense, part of the urban area.

Data on use of toilet facility have only been evaluated for 1970. These data indicated sharing to be the predominant characteristic of the urban housing stock (56 percent), while the vast majority of the rural housing stock had access to independent facilities. This must, however, be interpreted bearing in mind the generally lower standard of toilet facility in the rural areas.

3.4.1 "Pit"

Urban, 1960-1970. This was the predominant type of toilet facility in the urban area in Region 1b (St. Catherine) and in Region 2. The number of pit toilets in Region 1a, though large in absolute terms, represented only 17 percent of this region's housing stock in 1970. The large absolute number of dwellings with pit toilets in Region 1a (20,268 units in 1970) simply reflects Kingston/St. Andrew's numerical dominance of the urban housing stock. In 1960, the relevant percentage figure for pits was 34 percent. Considerable

improvement was thus made over the period. The data indicated that for St. Catherine and for Region 2 there was a considerable increase in the number of units in this category but this primarily reflects the general increase in the number of dwellings. Clearly there was, in relative percentage terms, a decline in this category for the two areas above.

Rural, 1960-1970. This category accounted for 85 percent of the rural housing stock in 1960 and 89 percent in 1970. There were numerical declines over the period in keeping with the decline in the rural housing stock although the percentage decline was less than that for the rural stock. This accounted for the improvement in relative percentage terms between 1960 and 1970. Region 1b and Region 2 once again dominated in this category.

Clearly the pit latrine was the major mode of toilet facility of the rural areas.

3.4.2 "W.C."

Urban, 1960-1970. As already mentioned, the 1970 data for Kingston/St. Andrew are to be viewed with caution. In 1960 in this area (Region 1a), 65 percent of the

dwellings had "W.C.'s". The relevant figure for 1970 was 83 percent. Although there was a significant improvement over the period there are indications that the 1970 data overstated the improvement. Spectacular improvement did, however, take place in Region 1b (+362 percent) and Region 2 (+236 percent). The data indicated, however, that only one-third of the new dwellings in Region 1b (those added between 1960 and 1970) had W.C.'s. The figure for Region 2 was one-half.

Rural, 1960-1970. Only 5 percent of the 1960 rural housing stock fell into this category. The relevant figure for 1970 was 6 percent. Despite declines in the housing stock, there were increases in this category for Regions 1b and 2. The data indicated that one-half of the loss of dwellings in Kingston/St. Andrew fell into this category. (The rest of the decline was almost wholly accounted for by "pit".) It seems possible that this was due to a redefinition of the 1970 urban boundaries to include dwellings that were "rural" in 1960.

3.4.3 "Other" and "None"

Urban and Rural, 1960-1970. Of the rural housing stock in 1960, only 9 percent had no toilet facility. By

1970 this was reduced to 5 percent. The worst area in this regard was Region 2. The "other" and "none" categories were insignificant in the urban areas.

3.4.4 "Shared" and "Not Shared"

Urban and Rural, 1970. The data indicated that a little more than one-half of the urban housing stock had shared toilet facilities. In the rural areas almost three-quarters of the housing stock had independent toilet facilities.

TABLE 3.19

Distribution of Dwellings by Type of Toilet Facility by Region
Urban and Rural (Numerical and Percentage) 1960

NO. REGION	Urban - Type of Toilet Facility 1960					Rural - Type of Toilet Facility 1960					
	Total	Pit	W.C.	Other	None	Total	Pit	W.C.	Other	None	
1a Kgn./St. Andrew	95,051	32,473	61,770	179	624	18,660	11,947	6,487	25	201	
b St. Catherine	6,162	5,327	804	4	27	32,976	30,948	1,008	125	895	
c (1a + 1b)	101,213	37,805	62,574	183	651	51,636	42,895	7,495	150	1,096	
2 Rural Parishes	32,022	25,518	4,713	1,177	614	216,900	187,365	5,246	2,386	21,903	
3 Jamaica (1c + 2)	133,235	63,323	67,287	1,360	1,265	268,536	230,260	12,741	2,536	22,999	
	Percentages (%)*										
1a Kgn./St. Andrew	100	34	65	-	1	100	64	35	-	1	
b St. Catherine	100	86	13	-	-	100	94	3	-	3	
c (1a + 1b)	100	37	62	-	1	100	83	15	-	2	
2 Rural Parishes	100	80	15	4	2	100	86	2	1	10	
3 Jamaica (1c + 2)	100	48	51	1	1	100	85	5	1	9	

* May not add to totals because of rounding.

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics, Kingston, Jamaica.

TABLE 3.20

Distribution of Dwellings by Type of Toilet Facility by Region
Urban and Rural (Numerical and Percentage) 1970

NO. REGION	Urban - Type of Toilet Facility 1970					Rural - Type of Toilet Facility 1970				
	Total	Pit	W.C.	Other	None	Total	Pit	W.C.	Other	None
1a Kgn./St. Andrew	120,328	20,268	99,371	333	356	10,133	8,190	1,815	27	101
b St. Catherine	15,439	11,556	3,717	62	104	26,492	24,346	1,477	39	630
c (1a + 1b)	135,767	31,824	103,088	395	460	36,625	32,536	3,292	66	731
2 Rural Parishes	52,904	35,939	15,818	94	1,053	194,863	173,656	9,330	330	11,547
3 Jamaica (1c + 2)	188,671	67,763	118,906	489	1,513	231,488	206,192	12,622	396	12,278
Percentages (%) *										
1a Kgn./St. Andrew	100	17	83	-	-	100	81	18	-	1
b St. Catherine	100	75	24	-	1	100	92	6	-	2
c (1a + 1b)	100	23	76	-	1	100	89	9	-	2
2 Rural Parishes	100	68	30	-	2	100	89	5	-	6
3 Jamaica (1c + 2)	100	36	63	-	1	100	89	6	-	5

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.21

Changes in the Distribution of Population, Dwellings, and Type of Toilet Facility by Region, Urban (Numerical and Percentage) 1960 - 1970

NO. REGION	Urban Population Total	Urban Dwellings Total	1960 - 1970 Changes by Type of Toilet Facility			
			Pit	W.C.	Other	None
1a Kgn./St. Andrew	+127,213	+25,277	-12,210	+37,601	+154	-268
b St. Catherine	+35,236	+9,277	+6,229	+2,913	+58	+77
c (1a + 1b)	+162,449	+34,554	-5,981	+40,514	+212	-191
2 Rural Parishes	+79,520	+20,882	+10,421	+11,105	-1,083	+439
3 Jamaica (1c + 2)	+241,969	+55,436	+4,440	+51,619	-871	+248
Percentage Changes 1960 - 1970						
1a Kgn./St. Andrew	+36	+27	-38	+61	+86	-43
b St. Catherine	+130	+151	+117	+362	+1,450	+285
c (1a + 1b)	+42	+34	-16	+65	+116	-29
2 Rural Parishes	+62	+65	+41	+236	-92	+71
3 Jamaica (1c + 2)	+47	+42	+7	+77	-64	+20

Source: Computed from Tables 3.19 and 3.20.

TABLE 3.22

Changes in the Distribution of Population, Dwellings and Type of Toilet Facility by Region, Rural (Numerical and Percentages) 1960 - 1970

NO. REGION	Rural Population Total	Rural Dwellings Total	1960 - 1970 Changes by Type of Toilet Facility			
			Pit	W.C.	Other	None
1a Kgn./St. Andrew	+8,901	-8,527	-3,757	-4,672	+2	-100
b St. Catherine	-5,381	-6,484	-6,602	+469	-86	-265
c (1a + 1b)	+3,520	-15,011	-10,359	-4,203	-84	-365
2 Rural Parishes	+1,497	-22,037	-13,709	+4,084	-2,056	-10,356
3 Jamaica (1c + 2)	+5,017	-37,048	-24,068	-119	-2,140	-10,721
Percentage Changes 1960 - 1970						
1a Kgn./St. Andrew	+21	-46	-31	-72	+8	-50
b St. Catherine	-4	-20	-21	+47	-69	-30
c (1a + 1b)	+2	-29	-24	-56	-56	-33
2 Rural Parishes	-	-10	-7	+78	-86	-47
3 Jamaica (1c + 2)	-	-14	-10	-1	-84	-47

Source: Computed from Tables 3.19 and 3.20.

TABLE 3.23

Distribution of Dwellings by Use of Toilet by Region - Urban and Rural
(Numerical and Percentage) 1970

NO. REGION	Urban - Use of Toilet Facility 1970				Rural - Use of Toilet Facility 1970			
	Total	Shared	Not Shared	None	Total	Shared	Not Shared	None
1a Kgn./St. Andrew	120,328	71,445	48,527	356	10,133	1,882	8,150	101
b St. Catherine	15,439	8,543	6,792	104	26,492	6,683	19,179	630
c (1a + 1b)	135,767	79,988	55,319	460	36,625	8,565	27,329	731
2 Rural Parishes	52,904	24,826	27,027	1,051	194,863	41,324	141,990	11,594
3 Jamaica (1c + 2)	188,671	104,814	82,346	1,511	231,488	49,889	169,319	12,280
Percentages (%)*								
1a Kgn./St. Andrew	100	59	40	-	100	19	80	1
b St. Catherine	100	55	44	1	100	25	72	2
c (1a + 1b)	100	59	41	-	100	23	75	2
2 Rural Parishes	100	47	51	2	100	21	73	6
3 Jamaica (1c + 2)	100	56	44	1	100	22	73	5

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

3.5 Size of Dwelling, 1960-1970.

The criteria used for dwelling size here is the number of rooms per dwelling. "Room" is taken to include those used for general living purposes such as bedrooms, dining rooms, living rooms, servants' rooms, pantries. Exclusions are made of garages, bathrooms, toilets, verandahs, passages, closets, foyers, and the like.

Below, and in Tables 3.24 to 3.29, we examine the structure and growth of the housing stock with regard to dwellings ranging in size from 1 to 5-plus rooms.

3.5.1 Size of Dwelling

Urban, 1960-1970. One-room dwellings were the major mode for the urban area. In 1960 they comprised some 63 percent of the urban housing stock. By 1970 this percentage had been reduced to 42 percent. The percentage decline over the period was due to the fact that this room category was the only one in the urban stock to undergo an absolute decline over the period. This amounted to a net loss of some 3,592 units, representing a 4 percent decline between 1960 and 1970.

The data indicated that the entire decline in the number of one-room dwellings took place in Kingston/St. Andrew --a loss of some 8,743 units. Both St. Catherine and the rural towns experienced growth over the period. This ranged from 88 percent in St. Catherine to 10 percent in the urban towns.

Although one-room dwellings were, in percentage terms, spread fairly evenly across the regions, Kingston/St. Andrew dominated the picture in absolute terms, having 74 percent of the stock in this category in 1960 and 67 percent in 1970.

The observed decline in the number of one-room dwellings seems unlikely to have been due, to any considerable extent, to demolition in the housing stock. A more probable explanation was that the majority of these units underwent conversions upwards to larger units.

Two-room dwellings were the second most important category in the urban housing stock. Taken together, one- and two-room units accounted for almost 80 percent of the urban housing stock in 1960 and somewhat over 60 percent in 1970. Unlike one-room dwellings, there was a considerable expansion in this category with Kingston/St. Andrew dominating in Region 1 (+7,410

out of +9,384 units) and Region 1 dominating Region 2. Generally, Region 1 dominated in terms of absolute growth over the period while Region 2 experienced the higher percentage growth. Clearly, the largest absolute increase in dwellings (some 15,063 units) occurred in the two-room category. The spectacular percentage increases in St. Catherine in all room categories were, once again, due largely to its gradual integration into the Kingston metropolitan area and the fact that it provides large areas of potentially developable land.

The data indicated that the growth of three- and four- and five-plus-room units was also spectacular. These categories experienced growths ranging from 97 percent for the five-plus-room category to 131 percent for the three-room category over the period.

Clearly, therefore, a shift in the size structure of the urban dwelling stock towards larger units has served to offset the trend toward larger household sizes and restrained an increase in the occupancy in terms of persons per room.

Rural, 1960-1970. A considerably greater percentage of the rural dwellings were in the two- and three-room categories than was the case in the urban areas. In fact, the data indicated that in 1970 two-room units had become the major mode in the rural areas, replacing the one-room category which was dominant in 1960. In 1970 32 percent of the rural housing stock were two-room units. This was followed by one- and three-room units which accounted for 25 percent and 20 percent, respectively, of the rural housing stock.

Decline has been widespread throughout the rural stock. The only categories of dwelling experiencing increases were three-, four- and five-plus-room units in St. Catherine and in the rural parishes. The growth in these regions was enough to offset the decline in Kingston/St. Andrew. Demolition was out of the question as far as an explanation of the losses in the rural stock were concerned. There were probably two main explanations. The first applied particularly to Kingston/St. Andrew. What seemed to have happened here was that redefinitions of the boundaries of the urban area led to the incorporation of a sizable part of the rural stock. The second explanation applied particularly to St. Catherine and the rural parishes and that was one of conversions of the stock from smaller

to larger units, which, as noted in the previous section on urban dwelling size, served to increase the occupancy rate in terms of persons per dwelling while simultaneously decreasing the rate in terms of persons per room. A possible third explanation is abandonment of rural dwellings as the rural-urban migration proceeded.

TABLE 3.24

Distribution of Dwellings by Number of Rooms by Region - Urban
(Numerical and Percentage) 1960

NO. REGION	Urban - Dwellings by Number of Rooms 1960							Not Stated
	Total	1	2	3	4	5+		
1a Kgn./St. Andrew	95,051	61,977	14,452	6,201	4,227	8,194	-	
b St. Catherine	6,162	3,752	1,073	517	319	501	-	
c (1a + 1b)	101,213	65,929	15,525	6,718	4,546	8,695	-	
2 Rural Parishes	32,022	17,719	6,328	2,871	1,728	3,376	-	
3 Jamaica (1c + 2)	133,235	83,448	21,853	9,589	6,274	12,071	-	
Percentages *								
1a Kgn./St. Andrew	100	65	15	7	4	9	NA	
b St. Catherine	100	61	17	8	5	8	NA	
c (1a + 1b)	100	65	15	7	4	9	NA	
2 Rural Parishes	100	55	20	9	5	11	NA	
3 Jamaica (1c + 2)	100	63	16	7	5	9	NA	

* May not add to totals because of rounding.

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics, Kingston, Jamaica.

TABLE 3.25

Distribution of Dwellings by Number of Rooms By Region - Urban
(Numerical and Percentage) 1970

NO. REGION	Urban - Dwellings by Number of Rooms - 1970						
	Total	1	2	3	4	5+	Not Stated
1a Kgn./St. Andrew	120,328	53,234	21,862	12,773	8,791	15,354	8,314
b St. Catherine	15,439	7,060	3,047	2,110	998	1,256	968
c (1a + 1b)	135,767	60,294	24,909	14,883	9,789	16,610	9,282
2 Rural Parishes	52,904	19,562	12,007	7,251	4,395	7,157	2,532
3 Jamaica (1c + 2)	188,671	79,856	36,916	22,134	14,184	23,767	11,814
	Percentages *						
1a Kgn./St. Andrew	100	44	18	11	7	13	7
b St. Catherine	100	46	20	14	6	8	6
c (1a + 1b)	100	44	18	11	7	12	7
2 Rural Parishes	100	37	23	14	8	14	5
3 Jamaica (1c + 2)	100	42	20	12	8	13	6

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.26

Distribution of Dwellings by Number of Rooms by Region - Rural
(Numerical and Percentage) 1960

NO. REGION	Rural - Dwellings by Number of Rooms 1960							Not Stated
	Total	1	2	3	4	5+		
1a Kgn./St. Andrew	18,660	7,201	4,771	2,255	1,482	2,951	-	
b St. Catherine	32,976	16,706	9,219	3,769	1,651	1,631	-	
c (1a + 1b)	51,636	23,907	13,990	6,024	3,133	4,582	-	
2 Rural Parishes	216,900	77,448	79,635	30,735	14,586	14,496	-	
3 Jamaica (1c + 2)	268,536	101,355	93,625	36,759	17,719	19,078	-	
	Percentages *							
1a Kgn./St. Andrew	100	39	26	12	8	16	NA	
b St. Catherine	100	51	28	11	5	5	NA	
c (1a + 1b)	100	46	27	12	6	9	NA	
2 Rural Parishes	100	36	37	14	7	7	NA	
3 Jamaica (1c + 2)	100	38	35	14	7	7	NA	

* May not add to totals because of rounding.

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, Department of Statistics, Kingston, Jamaica.

TABLE 3.27

Distribution of Dwellings by Number of Rooms By Region - Rural
(Numerical and Percentage) 1970

NO. REGION	Rural - Dwellings by Number of Rooms - 1970						
	Total	1	2	3	4	5+	Not Stated
1a Kgn./St. Andrew	10,133	2,319	2,775	2,068	1,071	1,221	679
b St. Catherine	26,492	9,204	7,661	4,842	1,835	1,782	1,168
c (1a + 1b)	36,625	11,523	10,436	6,910	2,906	3,003	1,847
2 Rural Parishes	194,863	46,133	63,013	38,570	18,537	18,119	10,491
3 Jamaica (1c + 2)	231,488	57,656	73,449	45,480	21,443	21,122	12,338
	Percentages (%)*						
1a Kgn./St. Andrew	100	23	27	20	11	12	7
b St. Catherine	100	34	29	18	7	7	4
c (1a + 1b)	100	31	28	19	8	8	5
2 Rural Parishes	100	24	32	20	10	9	5
3 Jamaica (1c + 2)	100	25	32	20	9	9	5

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.28

Changes in the Distribution of Population and Dwellings by Number of Rooms
by Region, Urban (Numerical and Percentage) 1960 - 1970

NO. REGION	Urban Popula- tion Total	Urban Dwellings Total	1960-1970 Changes in Dwelling by Number of Rooms per Dwelling					
			1	2	3	4	5+	Not Stated*
1a Kgn./St. Andrew	+127,213	+25,277	-8,743	+7,410	+6,572	+4,564	+7,160	+8,314
b St. Catherine	+35,236	+9,277	+3,308	+1,974	+1,593	+679	+755	+968
c (1a + 1b)	+162,449	+34,554	-5,455	+9,384	+8,165	+5,243	+7,915	+9,282
2 Rural Parishes	+79,520	+20,882	+1,843	+5,679	+4,380	+2,667	+3,781	+2,532
3 Jamaica (1c + 2)	+241,969	+55,436	-3,592	+15,063	+12,545	+7,910	+11,696	+11,814
	Percentage Change		1960 - 1970					
1a Kgn./St. Andrew	+36	+27	-14	+51	+106	+108	+87	NA
b St. Catherine	+130	+151	+88	+184	+308	+213	+151	NA
c (1a + 1b)	+42	+34	-8	+60	+122	+115	+91	NA
2 Rural Parishes	+62	+65	+10	+90	+153	+154	+112	NA
3 Jamaica (1c + 2)	+47	+42	-4	+69	+131	+126	+97	NA

Source: Computed from Tables 3.24 and 3.25.

TABLE 3.29

Changes in the Distribution of Population and Dwellings by Number of Rooms by Region, Rural (Numerical and Percentage) 1960 - 1970

NO. REGION	Rural Popula- tion Total	Rural Dwellings Total	1960-1970 Changes in Dwelling by Number of Rooms per Dwelling					
			1	2	3	4	5+	Not Stated*
1a Kgn./St. Andrew	+8,901	-8,527	-4,882	-1,996	-187	-411	-1,730	+679
b St. Catherine	-5,381	-6,484	-7,502	-1,558	+1,073	+184	+151	+1,168
c (1a + 1b)	+3,520	-15,011	-12,384	-3,554	+886	-227	-1,579	+1,847
2 Rural Parishes	+1,497	-22,037	-31,315	-16,622	+7,835	+3,951	+3,623	+10,491
3 Jamaica (1c + 2)	+5,017	-37,048	-43,699	-20,176	+8,721	+3,724	+2,044	+12,338
	Percentage Change		1960 - 1970					
1a Kgn./St. Andrew	+21	-46	-68	-42	-8	-28	-59	NA
b St. Catherine	-4	-20	-45	-17	+28	+11	+9	NA
c (1a + 1b)	+2	-29	-52	-25	+15	-7	-34	NA
2 Rural Parishes	-	-10	-40	-21	+25	+27	+25	NA
3 Jamaica (1c + 2)	-	-14	-43	-22	+24	+21	+11	NA

Source: Computed from Tables 3.26 and 3.27.

3.6 Occupancy

This section deals with changes in occupancy in terms of both the number of persons per dwelling and the number of persons per room. In addition we examine the distribution of the 1960 housing stock by the density of occupancy and household size. Comparable data were not available for 1970.

We observed in Sections 2.4 and 3.5 that the population grew, in general, at a faster rate than the growth of dwellings. We also observed in the above sections a trend towards larger dwellings and higher densities in terms of persons per dwelling. The tables in this section (Tables 3.30 to 3.32) clearly show that the increase in population has been accommodated by the increase in the number of rooms. In fact, in many cases, there has been a decrease in the occupancy rate.

Urban, 1960-1970. Examining the urban data first, it became clear that the overall average density decreased from 2.1 persons per room in 1960 to 2.0 persons in 1970. The overall average house size increased from 1.8 rooms per dwelling to 2.1 rooms per dwelling. At the same time the density in terms of persons per dwelling increased from an average of 3.8 in 1960 to 4.0 in 1970.

Rural, 1960-1970. The rural areas did, however, show a significant increase in occupancy in terms of persons per room. The increase was especially significant in Region 1. Kingston/St. Andrew's occupancy more than doubled from an average of 1.0 persons per room in 1960 to 2.1 persons per room in 1970. The average number of rooms per dwelling was constant at 2.4. It may be recalled (Sections 2.4 and 3.5) that Kingston/St. Andrew exhibited the characteristic of a growing population and a declining dwelling supply. That the situation in terms of occupancy did not become much worse than it appeared to, was due, it seems, to the very low 1960 occupancy rate. This low occupancy rate was due to a relatively high percentage of large dwellings. (It does not, of course, follow that this low average level of occupancy in 1960 meant decreased overcrowding. It seems more probable that a significant degree of overcrowding existed side by side with a significant degree of under-occupancy.)

3.6.1 Household Size and Occupancy, 1960.

As already mentioned, no comparable data were available for 1970. The 1960 data did, however, show that 65 to 70 percent of the housing stock was occupied at densities of 2 persons per room or less, and about one-

half of this amount were occupied at densities of 1 person per room or less. In the urban areas, 16 to 18 percent of the stock was occupied at densities between 2-plus persons per room and 3 persons per room. The rest of the urban stock (14 to 18 percent) was occupied at densities in excess of 3 persons per room. In the rural area the percentage in the 2-plus to 3 persons per room category was somewhat higher than the urban, while the percentage in the 3-plus category was somewhat lower.

Since no comparable household/house size data were available for 1970, it was not possible to be definite about the distribution of occupancy for that year. It seems probable, however, that there was a significant shift to higher densities in the rural areas. It ought, perhaps, to be noted that the available data indicated that the increase in 1970 household size was due almost wholly to increases in the number of children below the age of 14 years. (See Appendix A4.0.)

TABLE 3.30

Average Occupancy Levels and Average Dwelling Size by Region, Urban
1960 and 1970

NO. REGION	1970					
	Urban Population Total	Urban Dwellings Total	Rooms Total	Average No. of Persons per Dwelling	Average No. of Persons per Room	Average No. of Rooms per Dwelling
1a Kgn./St. Andrew	483,303	120,328	247,211	4.0	2.0	2.1
b St. Catherine	62,242	15,439	29,756	4.0	2.1	1.9
c (1a + 1b)	545,545	135,767	276,967	4.0	2.0	2.0
2 Rural Parishes	206,927	52,904	118,694	3.9	1.7	2.2
3 Jamaica (1c + 2)	752,472	188,671	395,661	4.0	1.9	2.1
	1960					
1a Kgn./St. Andrew	356,090	95,051	167,362	3.8	2.1	1.8
b St. Catherine	27,006	6,162	11,230	4.4	2.4	1.8
c (1a + 1b)	383,096	101,213	178,592	3.8	2.1	1.8
2 Rural Parishes	127,407	32,022	62,780	4.0	2.0	2.0
3 Jamaica (1c + 2)	510,503	133,235	241,372	3.8	2.1	1.8

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, and Population Census, 1970 Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.31

Average Occupancy Levels and Average Dwelling Size by Region, Rural
1960 and 1970

NO. REGION	1970					
	Rural Population Total	Rural Dwellings Total	Rooms Total	Average No. of Persons per Dwelling	Average No. of Persons per Room	Average No. of Rooms per Dwelling
1a Kgn./St. Andrew	51,797	10,133	24,462	5.1	2.1	2.4
b St. Catherine	119,258	26,492	55,302	4.5	2.2	2.1
c (1a + 1b)	171,055	36,625	79,764	4.7	2.1	2.2
2 Rural Parishes	903,273	194,863	452,612	4.6	2.0	2.3
3 Jamaica (1c + 2)	1,074,328	231,488	532,376	4.6	2.0	2.3
	1960					
1a Kgn./St. Andrew	42,896	18,660	44,191	2.3	1.0	2.4
b St. Catherine	124,639	32,976	61,210	3.8	2.0	1.9
c (1a + 1b)	167,535	51,636	105,401	3.2	1.6	2.0
2 Rural Parishes	901,776	216,900	459,747	4.2	2.0	2.1
3 Jamaica (1c + 2)	1,069,311	268,536	565,148	4.0	1.9	2.1

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960, and Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

	Urban Percentages 1960			Rural Percentages 1960		
	Region 1	Region 1a	Region 2	Region 1	Region 1a	Region 2
Rooms per Dwelling						
1	65	65	55	46	39	36
2	15	15	20	27	26	37
3	7	7	9	12	12	14
4	4	4	5	6	8	7
5+	9	9	11	9	16	7
	100	100	100	100	100	100
Household Size (Persons)						
1	21	21	23	17	15	18
2	23	23	20	18	16	16
3	17	17	16	15	15	14
4	13	13	12	13	14	12
5	9	9	9	11	11	10
6+	18	18	20	26	30	29
	100	100	100	100	100	100
Density (Persons per Room)						
1 or less	32	31	36	31	33	32
> 1 to 2	34	34	34	34	35	36
> 2 to 3	17	18	16	20	18	21
> 3	17	18	14	15	14	10
	100	100	100	100	100	100

Source: Computed from Census of Jamaica, Volume II, Part B, April 1960,
Department of Statistics, Kingston, Jamaica.

3.7 Age of the Housing Stock, 1970.

These data, shown in Tables 3.33 and 3.34, were analyzed for 1970 only and were included to give as clear a picture as possible of the structure and the changes that have been taking place. Such data are probably inherently inaccurate, because it seems unlikely that occupants would have a clear idea regarding the date of construction of the unit they occupied. This is especially so in the urban areas where owner occupancy was the exception and not the rule. We would, for similar reasons, expect the data for the rural areas, where owner occupancy was the rule, to be less inaccurate. With the above in mind we proceed to the analysis of the data.

About 51,000 units, or 27 percent of the housing stock, came into existence in the urban areas over the period 1960-1970. For the rural areas the relevant figures were some 71,500 and 31 percent. If these figures were realistic, it would mean that on the average some 5,000 units per year were added in the urban areas and 7,000 units per year in the rural areas, giving an annual average of 12,000 for Jamaica as a whole. Data derived from other tables in Section 3.0 indicated that some 5,500 units per year were added to the

urban housing stock while some 3,700 units per year were lost from the rural stock giving a net annual average gain of some 1,800 units overall. On the basis of this, it was clear that while the urban data (surprisingly enough in view of what has been said) seem fairly reliable, the rural data were very misleading.

TABLE 3.33

Distribution of Dwellings by Year Built by Region - Urban
(Numerical and Percentage) 1970

NO. REGION	Urban - Dwellings by Year Built - 1970					
	Total	1970	1960-69	1951-59	Before 1950	Not Stated
1a Kgn./St. Andrew	120,328	435	31,235	21,771	34,070	32,817
b St. Catherine	15,439	300	4,779	3,040	3,774	3,546
c (1a + 1b)	135,767	735	36,014	24,811	37,844	36,363
2 Rural Parishes	52,904	371	14,842	10,095	15,418	12,178
3 Jamaica (1c + 2)	188,671	1,106	50,856	34,906	53,262	48,541
Percentages (%)*						
1a Kgn./St. Andrew	100	-	26	18	28	27
b St. Catherine	100	2	31	20	24	23
c (1a + 1b)	100	1	27	18	28	27
2 Rural Parishes	100	1	28	19	29	23
3 Jamaica (1c + 2)	100	1	27	19	28	26

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

TABLE 3.34

Distribution of Dwellings by Year Built by Region - Rural
(Numerical and Percentage) 1970

NO. REGION	Rural - Dwellings by Year Built - 1970					
	Total	1970	1960-69	1951-59	Before 1950	Not Stated
1a Kgn./St. Andrew	10,133	166	3,703	2,315	2,563	1,386
b St. Catherine	26,492	256	9,402	5,591	7,636	3,607
c (1a + 1b)	36,625	422	13,105	7,906	10,199	4,993
2 Rural Parishes	194,863	1,301	59,387	35,649	69,033	29,493
3 Jamaica (1c + 2)	231,488	1,723	72,492	43,555	79,232	34,486
	Percentages (%)*					
1a Kgn./St. Andrew	100	2	37	23	25	14
b St. Catherine	100	1	35	21	28	13
c (1a + 1b)	100	1	36	22	28	14
2 Rural Parishes	100	1	30	18	35	15
3 Jamaica (1c + 2)	100	1	31	19	34	13

* May not add to totals because of rounding.

Source: Computed from Population Census, 1970, Bulletin 2, Department of Statistics, Kingston, Jamaica.

3.8 Summary

We have tried to examine the important features of the housing stock and the changes that have been taking place within it. We do not attempt a detailed summary here. A few findings, however, seem worth mentioning. First, there were a number of problems arising in the data which appear to stem from improper classification or omission of 1960 categories from the 1970 data. The effect of this was to overstate the growth of some factors and to understate the growth of others. Second, the predominance of rental tenure in the urban areas had not hitherto been fully realized. Third, extension of existing dwellings played an important part in accommodating population growth. Fourth, a major part of the increase in the housing stock can be classified substandard from the point of toilet facilities and water supply. In the next section (4.0) and in the concluding section (7.0), we try to come to grips with some of the issues that have been unearthed here.

4.0 Housing Need and Capital Requirements, 1975-1985

In this section we attempt to use the information gleaned (painfully) from the examination of the housing stock and assessments of the future formation of households to evaluate Jamaica's housing needs over the decade 1975-1985 (beginning in January, 1976 and ending in December, 1985). In attempting this exercise a number of assumptions have been made--some heroic, and some slightly less so. The data relevant to this section are contained in Tables 4.01 to 4.20 and Appendices A6.0 to A9.0.

Housing need is not an objective concept. It is, in fact, largely judgemental and is thus fundamentally dependent on the underlying assumptions on which the assessment is based. For instance, one's definition of "house" in terms of quality, size, cost, etc., can drastically colour the "need" arrived at. Does one define need in terms of some "standard acceptable dwelling" or does one assume needs structured according to some notion of the variety of housing sub-markets believed to exist? We have generally adopted the former despite its limitations (these limitations are discussed in Section 1.3). A further issue is the time horizon used for structuring housing policy.

This fundamentally affects the assessment of annual housing targets. Time and space do not allow us to explore all the above issues. We look at need from specific points of view, well aware that important viewpoints are being neglected. This cannot, however, be avoided given the scope of this study. We do not, for instance, evaluate the need for community facilities that are essential to successful housing development. Nor do we deal with issues that arise from general qualitative evaluations of the housing stock. The following are the factors examined:

- 1) New household formation;
- 2) Replacement;
- 3) Upgrading the existing stock:
 - a) Water supply;
 - b) Toilet facility;
 - c) Occupancy.

Need for items 1 and 2 above is looked at from the point of view of a) the distribution of income, b) the distribution of family size, c) a mix of dwelling standards, and d) a variety of financing terms. Item 3 basically is handled by assuming what are believed to be reasonable standards on the various factors ("a" to "c" above). Generally it is assumed that policy will attempt to keep abreast of new household formation and at the same time improve the "quality" of the existing stock. (No attempt is made to evaluate "need" arising out of a desire to maintain certain vacancy

levels in order to facilitate household mobility or for reasons of "frictional" vacancy. These are thought to be relatively insignificant given the scope of this study.) Estimates of the capital requirements depend on the above and on recent construction cost data obtained in December of 1975 (see Appendix A9.0).

The estimate of housing need between 1975 and 1985 is identical to the 1970-1985 estimate--with no allowance being made for construction that may have taken place between 1970 and 1975. It seems unlikely that house construction over the period 1970-1975 much exceeded 3,000 units per year or a total of approximately 15,000 units (see Appendix A7.0). This is only 8 percent of the 1970-1985 estimated need of approximately 187,000 units. Stated differently, if we deduct the estimated 1970-1975 construction we are left with a need of approximately 172,000 dwellings over the period 1975-1985. The average annual requirement thus falls from approximately 19,000 units to 17,000 units. The 1970-1975 construction was probably confined, however, to income groups earning in excess of J\$3,500, thus eliminating some 70 to 80 percent of households from consideration. (See Section 4.2 for discussion of how much housing households can afford, and Table 5.08 and Appendix A9.0 for information on recent

mortgage lending and construction costs.) For this reason, mainly, no adjustment was made to our estimates to allow for 1970-1975 construction.

It is, perhaps, worth repeating here that the household size assumed in estimating need was four persons. If a 4.5 person household had been used instead, the estimated housing need would have been some 166,000 units instead of 187,000. The reduction in need for an additional 0.5 persons per household is some 11 percent. The assumed household size is therefore of considerable importance in estimating housing need.

With the above in mind we proceed to examine housing need arising from household formation and replacement.

4.1 Housing Need Arising from Household Formation and Replacement of Existing Stock, 1975-1985

Need arising from new household formation was dealt with in Section 2.5. The assessment is thus not repeated here. In evaluating the annual need arising from replacement, we use one percent of the existing stock. This assumes that 50 percent of the existing stock will be replaced over the next 50 years. This figure is rather low and somewhat arbitrary. There is, however, no generally agreed satisfactory way of determining this figure, especially in the absence of detailed "condition of dwelling" data. U.N. estimators [27] seem to use replacement percentages varying from one to five. In view of the apparent "relative youth" of the Jamaican housing stock (see Section 3.7) and the upgrading proposed in later sections, it was decided to "err" on the side of the lower percentage.

Tables 4.01 to 4.05 indicate the need arising from new household formation and replacement for the period 1970-1975. As already stated, it is assumed for estimating purposes that this will be met over the period 1975-1985. The estimates indicate a requirement of some 187,000 new dwellings over the period, 120,000 of which are in Region 1. Region 1 Urban requires some 116,000 new dwellings and Region 2 Urban

requires some 59,000. The relevant rural Regions 1 and 2 estimates are 4,000 and 8,000 dwellings, respectively.

4.1.1 Housing Need Arising from New Household Formation and Replacement, by Size of Dwelling, 1975-1985

Essentially, these estimates were arrived at by applying the 1960 distribution of household size (see Table 3.32) to the 1970-1985 housing requirements as determined in Section 4.1 above. This was done assuming that occupancy would be kept below 1.5 persons per room. This was then translated into dwelling sizes. In using the 1970 household size distribution, it is, of course realized that the size structure of households has probably changed over the period. No 1970 data are available, however. It seems probable that larger households have increased their share of the total number of households and that the percentage of 4 and 5 person households may have increased. What the actual distribution was in 1970 is, however, difficult to judge from available data but it seems unlikely that the shift from 1960 should be dramatic. The assumed "room sizes" were decided upon using experiences as a guide and after consulting U.N. sources [28].

TABLE 4.01

Projected Housing Need by Region, Urban and Rural, 1970 and 1970 - 1975
(Household Formation and Replacement*)

NO. REGION	1970								
	New Household Formation			Replacement			TOTAL		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1	-	-	-	1,700	1,400	300	1,700	1,400	300
2	-	-	-	2,500	500	2,000	2,500	500	2,000
3	-	-	-	4,200	1,900	2,300	4,200	1,900	2,300
	1970 - 1975								
1	28,700	28,000	700	2,000	1,700	300	30,700	29,700	1,000
2	14,300	14,300	-	2,600	600	2,000	16,900	14,900	2,000
3	43,000	42,300	700	4,600	2,300	2,300	47,600	44,600	3,000

* See text. Annual replacement assumed to be 1 percent of existing stock.

TABLE 4.02

Projected Housing Need by Region, Urban and Rural, 1975 - 1980
and 1980 - 1985 (Household Formation and Replacement*)

NO. REGION	1975 - 1980								
	New Household Formation			Replacement			TOTAL		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1	36,200	35,400	800	2,400	2,000	400	38,600	37,400	1,200
2	18,300	18,300	-	2,800	800	2,000	21,100	19,100	2,000
3	54,500	53,700	800	5,200	2,500	2,400	59,700	56,500	3,200
	1980 - 1985								
1	46,500	45,500	1,000	2,900	2,400	500	49,400	47,900	1,500
2	23,300	23,300	-	3,000	1,000	2,000	26,300	24,300	2,000
3	69,800	68,900	1,000	5,900	3,400	2,500	75,700	72,200	3,500

* See text. Annual replacement assumed to be 1 percent of existing stock.

TABLE 4.03

Projected Housing Need by Region, Urban and Rural, 1970 - 1985
(Household Formation and Replacement*)

NO. REGION	New Household Formation			Replacement			TOTAL		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1	111,400	108,900	2,500	9,000	7,500	1,500	120,400	116,400	4,000
2	55,900	55,900	-	10,900	2,900	8,000	66,800	58,800	8,000
3	167,300	164,800	2,500	19,900	10,400	9,500	187,200	175,200	12,000

* See text. Annual replacement assumed to be 1 percent of existing stock.

TABLE 4.04 Estimated Distribution of Housing Need by Family and Assumed Room Size, by Region (Urban and Rural) 1970 - 1985 (New Households and Replacement)

	Housing Need by Family Size*			Assumed** Dwelling Size Number of Rooms
	Total	Urban	Rural	
REGION 1				
Total	<u>120,400</u>	<u>116,400</u>	<u>4,000</u>	
1	25,150	24,450	700	1
2	27,450	26,750	700	2
3	20,400	19,800	600	3
4	15,650	15,150	500	3
5	10,900	10,450	450	4
6+	20,850	19,800	1,050	4
REGION 2				
Total	<u>66,800</u>	<u>58,800</u>	<u>8,000</u>	
1	14,950	13,500	1,450	1
2	13,050	11,750	1,300	2
3	10,500	9,400	1,100	3
4	8,000	7,050	950	3
5	6,100	5,300	800	4
6+	14,200	11,800	2,400	4
REGION 3 JAMAICA				
Total	<u>187,200</u>	<u>175,200</u>	<u>12,000</u>	
1	40,100	37,950	2,150	1
2	40,500	38,500	2,000	2
3	30,900	29,200	1,700	3
4	23,650	22,200	1,450	3
5	17,000	15,750	1,250	4
6+	35,050	31,600	3,450	4

* Family size distribution taken from 1960 data, see Table 3.32.

** See text.

Source: Computed from Table 4.03.

TABLE 4.05

Estimated Distribution of Housing Need by Size
of Dwelling by Region (Urban and Rural)
1970 - 1985 (New Households and Replacement)

	Housing Need by Family Size 1970 - 1985			Assumed Dwelling Size**	
	Total	Urban	Rural	Rooms	Bed Rooms
REGION 1					
Total	<u>120,400</u>	<u>116,400</u>	<u>4,000</u>		
	25,150	24,450	700	1	ST.*
	27,450	26,750	700	2	1
	36,050	34,950	1,100	3	2
	31,750	30,250	1,500	4	3
REGION 2					
Total	<u>66,800</u>	<u>58,800</u>	<u>8,000</u>		
	14,950	13,500	1,450	1	ST.*
	13,050	11,750	1,300	2	1
	18,500	16,450	2,050	3	2
	20,300	17,100	3,200	4	3
REGION 3 JAMAICA					
Total	<u>187,200</u>	<u>175,200</u>	<u>12,000</u>		
	40,100	37,950	2,150	1	ST.*
	40,500	38,500	2,000	2	1
	54,550	51,400	3,150	3	2
	52,050	47,350	4,700	4	3

* Studio Unit.

** See Text.

Source: Computed from Table 4.04.

4.2 Housing Demand

We examine in this section how much housing Jamaicans can afford to purchase given the distribution of income. We are, in effect, dealing with the demand for housing in the economic sense.

Income distribution data on Jamaica is notoriously unreliable. In this section, however, we are forced to rely on data from the Household Savings Survey 1972 (Table 4.06). These data relate to savers, and since low income families are generally low savers, it seems probable that they are underrepresented in the data. Furthermore, the understating of higher incomes is a well-known phenomenon as there are a significant number of "self employed workers" in this group who enjoy considerable benefits in the form of housing and entertainment allowances, etc., which do not show up in the data as income. These 1972 data are, however, the best available and are the only available data that allow breakdown by region. The other available data are presented in Table 4.07. This refers to urban incomes only and, with the exception of the 1958 data by Ahiram [2], specifically refers to the Kingston/St. Andrew urban area.

In making use of the data it was thought desirable to separate rural incomes from urban, since it is well known (see Ahiram [2]) that urban incomes are significantly higher. The data were thus adjusted to reflect this fact. (Details of the adjustment process are given in Appendix A6.0.)

Table 4.08 indicates the distribution of new households and replacement need by the distribution of income. These figures are used as the basis for calculating housing demand arising from new household formation.

The 1972 income distribution figures mentioned above are assumed to be valid for 1975. Incomes have, of course, risen since 1972 and as Appendix A8.0 shows, dramatic increases in wages occurred in 1973 and 1974 in the unionized sectors. These increases have been in response to equally dramatic increases in the cost of living (see Appendix A8.0). Since, however, significantly less than one-half of the labour force is thought to be unionized, it seems unlikely that the overall increase in incomes over the period has been as dramatic as in the unionized sector. (No data were available on trade union membership at the time of writing.) In fact, it seems probable that the real wage, especially for the lower-income groups, has

declined. This judgement is reinforced by the fact of pervasive unemployment--in excess of 20 percent (see Appendix A8.0). In view of the above it does not seem too unreasonable to use the 1972 data, especially in the absence of any other comparable data.

In attempting to evaluate how much households can afford to spend on housing, it is convenient to assume 25 percent of income. Such a figure is, however, misleading. It seems likely that, at very low incomes, expenditures on other necessities such as food and clothing play a proportionately more important role in household expenditure than they do at higher incomes. Available data [10] indicate that in 1963-64 Jamaican urban working class households spent, on the average, 11.7 percent of household income on housing. It thus seemed advisable to use a sliding scale in estimating what housing people could afford to purchase. The scale used here is somewhat arbitrary. It is based on the following model:

$$y = b \sqrt{x}$$

where

y = percentage of income available for housing

x = income J\$

b = constant (.45, in this case)

This model gave rise to the following sliding scale:

Income Group J\$	Percentage of Income Available for Housing %
0 - 500	0 - 10
500 - 999	10 - 14
1,000 - 1,999	15 - 20
2,000 - 2,999	20 - 25
3,000 - 3,999	25 - 29
4,000 - 4,999	29 - 32
5,000+	32+

These percentages seem reasonable in light of experience, although at incomes above J\$5,000 it seems unlikely that the percentage would ever reach 40 percent. (In many developing countries the lower income groups actually pay much higher percentages of income for housing than do the higher income groups. In Bogota, for instance [10], the lowest income groups paid up to 59 percent of household income on housing as opposed to 18 percent for the highest income groups. The pattern is probably quite similar in Jamaica. There is, however, no comprehensive data to substantiate this.)

Tables 4.09 to 4.13 indicate what housing can be afforded by the various income groups. In deciding to use the sliding scale it was felt that to assume

the 25 percent convention would only result in massive mortgage payment defaults in the lower income categories. (Experience indicates that such defaults are a perennial headache for the Ministry of Housing.

Collection drives occur from time to time, accompanied by much unpleasantness on all sides.) The tables show that the use of the scale radically alters the picture of what the lower income groups can afford to purchase in the way of housing. The tables assume that households are evenly distributed within each income group. The mean of the income group is thus used as representative of the group.

A variety of financing terms are used, ranging from 20 years at 10 percent per annum to 40 years at 12 percent per annum. Constant monthly payments are assumed. It should be noted that 20 years at 12 percent is representative of recent private sector (bank, trust and insurance companies) lending rates on mortgages for housing. Building societies (whose interest rates are regulated by law) have recently been allowed by the government to raise their interest rates to 12 percent so as to enable them to compete with other private lenders [3, p. 17]. If all their fees are included, the actual interest rates on mortgages in 1975 probably exceeded 12 percent.

What emerges from these figures is that a household has to have an annual income in excess of J\$2,500 to be able to afford the smallest conventional unit that could be made available at current construction costs. This is a studio unit (bed-sitting room) of some 250 square feet selling at J\$20.00 per square foot or J\$5,000 per unit. (See Appendix A9.0 for recent housing costs.) Clearly 70 to 80 percent of Jamaican households are outside the market for conventional unsubsidized dwellings. There is thus no way of housing the bulk of the population without a) significantly increasing incomes; b) massive subsidies; c) dramatic decreases in building costs; or d) low standards of accommodation. Tinkering with the terms of payment cannot meaningfully facilitate house-ownership for the vast majority of households. (It is worth noting that a 2 percent increase in the interest rate wipes out the gain obtained by increasing the term of the mortgage.) Providing easier terms of finance will only really benefit the upper 20 to 30 percent of households. The policy implications of this will be taken up in later sections. (It is probably an intuitive understanding of these facts that causes policy-makers to shy away from coming to grips with housing issues for the society as a whole, It also partially explains why a subsidized government

dwelling is so sought-after, and why low-income housing is so highly politicized.)

Since significant increases in income are unlikely to be achieved in the foreseeable future, we are left with the other three approaches. (The fifth alternative, doing nothing, is assumed not to be a viable strategy, if only for reasons of containing the social unrest that would ensue.) Reducing construction costs seems necessary and possible. This cannot be achieved, however, without considerable government intervention to break up the oligopolistic practices of the construction firms and building material suppliers, and unions. A recent World Bank Study [10] of 26 developing countries showed that Jamaica had the highest building costs--14 percent higher than Kuwait, the next highest. (The situation has thus traversed the limits of rationality. Jamaica is clearly on the road to pricing itself out of any conceivable "housing solution".) This study, however, cannot deal with the manifold issues arising from the above although they are critical to any approach to resolution of the housing problem. Some of the more critical issues are, however, taken up in the final section of this study. We confine ourselves in this section to looking at the cost of a conventional program, the cost of a program that adopts a degree of self-help construction,

and the question of subsidies. The self-help issue is again discussed in Sections 6.0 and 7.0.

We now proceed (in Section 4.3) to estimate the capital requirements of some alternative housing programs.

TABLE 4.06

Percentage Distribution of Households by Income Group by Region, 1972 (J\$)

NO. REGION	Percentage Distribution of Households by Income Group (J\$)						
	Total	0-499	500-999	1,000-1,999	2,000-3,999	4,000-4,999	5,000+
1a Kgn./St. Andrew	100	36	25	20	13	3	3
b St. Catherine	100	65	20	12	3	-	-
c (1a + 1b)	100	43	24	18	11	2	2
2 Rural Parishes	100	69	17	10	3	-	1
3 Jamaica (1c + 2)	100	58	20	13	6	1	2

Source: Computed from Household Savings Survey 1972, National Savings Committee, Kingston, Jamaica.

TABLE 4.07

Income Levels in Kingston **

Annual Income	Percent of Urban Households					
	1958 ¹	1963 ²	1968 ³	1971 ⁴	1980 ⁴	1990 ⁴
Less than \$500	56	44.5	36	32	23	18
\$501 - 1200	28.5	35.5	35	34	30	26
\$1201 - 2500	8.5	12	16	15	20	21
\$2501 - 5000				11.5	15	18
\$5000 and over	7.0*	8*	13*	7.5	12	17

* 2500 and over

Sources: 1 E. Ahiram - Income Distribution in Jamaica 1958 (Social and Economic Studies, September 1964).

2 Study of Income Distribution in Jamaica 1963 (UWI: Professor Gloria Cumper and Miss M. Lamont).

3 Special Study by Owen Jefferson.

4 Oberman: Based on past and projected Gross National Income, proposed 5 year development plan of CPU, speculation on current or proposed policies.

** Taken from Kingston Region Draft Low Income Housing Strategy, Ministry of Housing, (Shankland Cox Overseas Report), May, 1972.

TABLE 4.08 Projected Housing Need by Region (Urban and Rural) by Income Group 1970-1985 (New Households and Replacement)

INCOME GROUP J\$***	Percentage Distribution* of Income Groups				Distribution of Housing Need by Income Group 1970 - 1985		
	Total**	Total	Urban	Rural	Total	Urban	Rural
Region 1							
Total	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>120,400</u>	<u>116,400</u>	<u>4,000</u>
0 - 449	43	31	30	64	37,450	34,900	2,550
500 - 999	24	17	17	24	20,750	19,800	950
1,000 - 1,999	18	17	17	12	20,300	19,800	500
2,000 - 2,999	11	10	10	-	11,650	11,650	-
3,000 - 3,999		7	7	-	8,150	8,150	-
4,000 - 4,999	2	7	7	-	8,150	8,150	-
5,000+	2	12	12	-	13,950	13,950	-
Region 2							
Total	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>66,800</u>	<u>58,800</u>	<u>8,000</u>
0 - 499	69	62	60	76	41,400	35,300	6,100
500 - 999	17	19	20	15	12,900	11,700	1,200
1,000 - 1,999	10	12	12	9	7,750	7,050	700
2,000 - 2,999	3	4	5	-	2,950	2,950	-
3,000 - 3,999		2	2	-	1,200	1,200	-
4,000 - 4,999	-	-	-	-	-	-	-
5,000+	1	1	1	-	600	600	-
Jamaica							
Total	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>187,200</u>	<u>175,200</u>	<u>12,000</u>
0 - 499	58	42	40	72	78,850	70,200	8,650
500 - 999	20	18	18	18	33,650	31,500	2,150
1,000 - 1,999	13	15	15	10	28,050	26,850	1,200
2,000 - 2,999	6	8	8	-	14,600	14,600	-
3,000 - 3,999		5	5	-	9,350	9,350	-
4,000 - 4,999	1	4	5	-	8,150	8,150	-
5,000+	2	8	8	-	14,550	14,550	-

*See Appendix A6.0. **From Table 4.06. ***US\$1.00=J\$0.91, J\$1.00=US\$1.10.

INCOME GROUP J\$*	Percentage of Income Available for Housing %	Monthly Housing Payment J\$	Amortised House Price (J\$)	
			20 Years 10%	12% Interest
250	25.0	5.21	550	450
750	25.0	15.63	1,600	1,400
1,500	25.0	31.25	3,250	2,850
2,500	25.0	52.08	5,400	4,750
3,500	25.0	72.92	7,550	6,600
4,500	25.0	93.75	9,700	8,500
7,500	25.0	156.75	16,200	14,200
250	7.12	1.48	150	150
750	12.32	7.70	800	700
1,500	17.43	21.79	2,300	2,000
2,500	22.50	46.88	4,900	4,300
3,500	26.62	77.64	8,100	7,100
4,500	30.19	113.21	11,850	10,400
7,500	38.97	243.56	25,450	22,350

* Currency Equivalents: U.S.\$ 1.00 = J.\$ 0.91
J.\$ 1.00 = U.S.\$ 1.10.

** See text.

TABLE 4.10

Housing Costs (J\$) That Can Be Amortised by Income Groups
Under Varying Financing Terms Assuming No Downpayment*

INCOME GROUP	Percentage of Income Available for Housing %	Monthly Housing Payment J\$	House Price That Can Be Amortised (J\$)**							
			10% Interest Rate				12% Interest Rate			
			20 yrs.	25 yrs.	30 yrs.	40 yrs.	20 yrs.	25 yrs.	30 yrs.	40 yrs.
250	7.12	1.48	150	150	150	200	150	150	150	150
750	12.32	7.70	800	850	900	900	700	750	750	750
1500	17.43	21.79	2,300	2,400	2,500	2,600	2,000	2,100	2,150	2,200
2500	22.50	46.88	4,900	5,200	5,400	5,650	4,300	4,500	4,600	4,700
3500	26.62	77.64	8,100	8,600	8,900	9,200	7,100	7,500	7,600	7,800
4500	30.19	113.21	11,850	12,550	13,000	13,450	10,400	10,850	11,100	11,350
7500	38.97	243.56	25,450	27,050	28,000	28,900	22,350	23,350	23,900	24,400

* See text for assumptions.

** Rounded to the nearest J\$50.

*** Currency Equivalents: U.S.\$1.00 = J.\$0.91
J.\$1.00 = U.S.\$1.10.

TABLE 4.11

Increment in House Cost (J\$) That Can Be Amortised By Income Groups
Under Varying Financing Terms Assuming No Downpayment*

INCOME GROUP J\$***	Increment in House Price (J\$) That Can Be Amortised**							
	10% Interest Rate				12% Interest Rate			
	20 yrs.	25 yrs.	30 yrs.	40 yrs.	20 yrs.	25 yrs.	30 yrs.	40 yrs.
250	0	0	0	+50	0	0	0	0
750	0	+50	+100	+100	0	+50	+50	+50
1500	0	+100	+200	+300	0	+100	+150	+200
2500	0	+300	+500	+750	0	+200	+300	+400
3500	0	+500	+800	+1,100	0	+400	+500	+700
4500	0	+700	+1,150	+1,600	0	+450	+700	+950
7500	0	+1,600	+2,550	+3,450	0	+1,000	+1,550	+2,050

* See text.

** Rounded to the nearest J\$50.

*** Currency Equivalents: U.S.\$1.00 = J\$0.91
J.\$1.00 = U.S.\$1.10.

TABLE 4.12

Housing Cost (J\$) That Can Be Amortised by Income Groups
Under Varying Financing Terms Assuming Downpayment*

INCOME GROUP J\$***	Percentage Downpayment on House %	House Price That Can Be Amortised (J\$)**							
		10% Interest Rate				12% Interest Rate			
		20	25	30	40	20	25	30	40
250	10	150	150	150	200	150	150	150	150
750	10	900	900	1,000	1,000	750	800	800	800
1500	10	2,550	2,650	2,800	2,900	2,200	2,350	2,400	2,450
2500	10	5,450	5,800	6,000	6,300	4,800	5,000	5,100	5,200
3500	10	9,000	9,550	10,000	10,200	7,900	8,350	8,450	8,650
4500	10	13,150	13,950	14,450	14,950	11,550	12,050	12,350	12,600
7500	15	29,950	31,800	32,950	34,000	26,300	27,450	28,100	28,700

* See text for assumptions.

** Rounded to the nearest J\$50.

*** Currency Equivalents: U.S.\$1.00 = J\$.0.91
J.\$1.00 = U.S.\$1.10.

TABLE 4.13 Conventional House Types That Can Be Afforded by Income Groups At Prevailing House Prices

INCOME GROUP	Conventional House Type That Can Be Afforded*							
	10%				12%			
J\$**	20	25	30	40	20	25	30	40
250	-	-	-	-	-	-	-	-
750	-	-	-	-	-	-	-	-
1500	-	-	-	-	-	-	-	-
2500	ST.	ST.	ST.	ST.	ST.	ST.	ST.	ST.
3500	2-B	2-B	2-B	2-B	1-B	1-B	1-B	1-B
4500	3-B	3-B	3-B	3-B	3-B	3-B	3-B	3-B
7500	3-B	3-B	3-B	3-B	3-B	3-B	3-B	3-B

SYMBOL	Conventional Unit Type	Area in Sq. Ft.	Purchase Price/Sq. Ft.	Purchase Price
			J\$/Sq. Ft.	J(\$)**
ST.	Studio Bedroom	250	20.00	5,000
1-B	One Bedroom	375	20.00	7,500
2-B	Two Bedrooms	500	20.00	10,000
3-B	Three Bedrooms	800	20.00	16,000

Note: These space standards and house prices are in line with recent construction by government and the leading private housing developer. Typical "middle income" space standards are considerably higher, e.g. 3-B at 1,300 sq. ft.

* See text and Appendix A9.0.

** Currency Equivalents: U.S.\$1.00 = J\$0.91
J.\$1.00 = U.S.\$1.10.

4.3 Capital Requirements for Alternative Housing Programs, to Meet the Needs Arising from New Household Formation, 1975-1985

In this section we attempt to estimate the capital requirements for alternative housing programs. The main programs considered are meeting the needs arising out of new household formation and upgrading the existing housing stock. The program for dealing with new household formation is looked at from a variety of viewpoints. First, we estimate the cost of dealing with need on the basis of housing requirements derived from Table 4.05. In doing so we are ignoring the ability of households to pay for housing and taking only household size into consideration. Second, we estimate capital costs based on household income and ability to pay for conventional housing. We thereafter estimate capital costs based on a mix of conventional and self-help programs of construction. Only one estimate is made of capital requirements arising out of upgrading. The alternatives that could have been selected are numerous. We limit the range of choice because of the exigencies of time, space and data availability. We also make a number of simplifying assumptions in order to reduce the computations. These assumptions are stated as each program is discussed.

In estimating capital requirements it is necessary to know the cost of various house types and upgrading options. The costs used in this study are based on recent Jamaican data gathered by the author in December of 1975. In the cases where we deal with self-help options the cost estimates are based on data from the Jamaica Sites and Services Project [11]. These figures have been adjusted upwards by 30 percent in order to take into account inflation since 1974. This was done on the basis of information supplied by the Sites and Services Project unit of the Ministry of Housing, Jamaica. The space standards adopted for conventional housing types were derived from those used in recent government housing construction and by the major housing developer in the island (see Appendix A9.0). These standards are very conservative by "middle income" Jamaican norms. Though conservative they are (as Table 4.13 shows) outside the financial capability of households with incomes less than J\$2,500 (i.e., 70 to 80 percent of Jamaican households). Why, it might be asked, in view of the above, do we bother to estimate the cost of a program based on conventional dwellings? The answer to this is that, in doing so, we create a vantage point from which to view program variants. (A further reason is to demonstrate to policy-makers, the financial implications of extending existing programs.) Let us then

move on to estimate the capital requirements arising out of programs dealing with future household formation. The data relevant to this section are exhibited in Tables 4.14 to 4.20. It will be observed that matters such as closing costs, etc., are ignored. This is for the sake of simplicity and does not significantly distort the estimates. All cost estimates are in 1975 J\$'s. (As used in this discussion, "conventional housing" is taken to mean: that built by regular building contracting firms, for sale on the market or for government housing programs. This includes the "system builder". On the other hand, the "dweller" plays a central role in the contracting process for "self-help housing".)

4.3.1 Capital Requirements of Programs Dealing with New Household Formation

Program One. As outlined above, a conventional program was costed, ignoring income distribution. Tables 4.14 and 4.20 show the estimated capital cost of this program. The estimates of housing needs are derived from Table 4.05 while the costs and unit types are derived from Table 4.13. The capital requirements of this program are estimated at approximately J\$1,882 million over the period 1975-1985.

Program Two. The second estimate of capital requirement is based on household demand. Tables 4.08, 4.10 and 4.13 form the bases for these estimates (see also Table 4.20 for a comparison with other programs). The interest rate assumed is 10 percent and the term, 25 years. It should be noted in this regard that the 25-year term is longer than is normally available on the Jamaican mortgage market. Building societies and other financial institutions seldom give terms in excess of 20 years. We are, however, assuming that the government, in framing new housing policy, will attempt to extend the term to bring it into line with that of the World Bank Sites and Services Program [11]. The term of this program was 25 years and the interest rate was 8 percent. We cannot assume the latter interest rate because it is considerably lower than market rates and we cannot depend on international agencies for the financing of Jamaican housing programs. We could have used the 12 percent interest rate that, as already mentioned (Section 4.2), is the going market rate. We do not, however, expect that the market rate will remain at this high level, nor do we expect that the existing Jamaican capital market will supply most of the necessary capital. It seems likely that much the the financing will come (if it comes at all) from the government via a "Government Housing Bank" or some similar financial institution (this will be further

discussed in Sections 5.0 and 7.0). It seems reasonable, therefore, to use a 10 percent interest rate. If, in fact, a 12 percent rate prevails over the period, it will have the effect of reducing the purchasing power of households and increasing capital requirements and subsidies.

The estimated capital requirement for the second program, calculated on the basis outlined above, is approximately J\$760 million. (This estimate assumes that households buy housing according to their ability to pay and without capital subsidies.) The estimates indicate that the capital requirement for a housing program formulated on the basis of accommodating the distribution of households by size, is more than twice as costly as one based on "demand". This simply reflects the fact, already referred to in Section 4.3, that the vast majority of households are not in the market for conventional housing.

Program Three. The third program is entirely self-help and addresses itself to meeting need arising from new family formation without regard to household income. (Tables 4.16, 4.17 and 4.20 display the data relevant to this program.) But for the self-help component, this program is thus directly comparable with Program One. The estimated capital requirement of Program Three

is approximately J\$1,049 million over the period 1975-1985. This program is thus one-half as costly as Program One. We must, however, qualify this conclusion. The first qualification is that a self-help housing program is significantly different from a conventional housing program. We have assumed that for the self-help program a serviced lot will be provided with a sanitary core and enclosed basic shelter unit, together comprising approximately 180 square feet. (This is the self-help equivalent of a conventional studio unit.) Thereafter material loans are provided to allow the households to extend the unit to a potential three-bedroom house. Table 4.16 indicates the size costs of these extensions. The overall floor areas are lower than those for conventional housing because only essential floor space is capitalized under the program. The household is expected to finance additional areas such as porches, etc., out its own resources and to provide the finance or the labour for the actual construction of the dwelling (i.e., that required over and above the basic core and shelter). A second factor worth bearing in mind is that a standard lot size is assumed regardless of what the eventual dwelling size will be. Self-help housing does not use land as efficiently as is theoretically possible with conventional housing simply because every unit is potentially expandable to three bedrooms. The effect

of this factor is to make the cost of a studio unit, built on a self-help basis, almost as expensive as one built conventionally. This is so even though the standard of construction of the self-help studio unit is usually much lower than that of the conventional unit. A third qualification is that we need not have assumed that the minimum level of initial construction was the basic core and enclosed shelter (Option 3, see Appendix A9.0). It is possible to start with only a serviced lot (Option 1, see Appendix A9.0) and then to provide loans for the entire construction process. The cost for an Option 1 self-help unit is 13 to 15 percent less than that of an Option 3. This is because the purchaser has to start at a lower basic lot development level and puts in more "sweat equity". This variant would probably be most relevant in the rural towns and rural areas (Region 1 Urban and Region 2 Urban and Rural). The final qualification is that the land costs assumed are mainly relevant to urban land. The self-help unit cost used thus overstates the cost of rural self-help units. No allowance has been made for this factor or for the likelihood that lot sizes in the rural areas will probably be larger than is allowed for in these calculations. We have thus probably overestimated the cost of the third program.

Program Four. The fourth program is estimated to require J\$2,141 million over the period 1975-1985 (see Tables 4.18 and 4.20). This program assumes conventional construction and that households with incomes of J\$3,500 and below will be subsidized in order that they may purchase a conventional two-bedroom unit. Households with incomes above \$3,500 can afford to purchase larger units and are expected to exercise their purchasing power. The data relevant to this program are displayed in Tables 4.18 and 4.20. The estimated capital subsidy required for Program Four is approximately J\$1,381 million. This capital subsidy is more than the entire estimated cost of Program Three (and almost as great as that of Program Five which follows). A further point is that the capital cost of Program Four is greater than that of Program One. This partly reflects the fact that the assumption of two-bedroom units for households with incomes of J\$3,500 or less probably results in under-occupancy (given our assumptions in Section 4.1), and an over-provision of two-bedroom units. The difficulty we face here is that there simply is no available data cross-tabulating income group and family size. Bearing the above factors in mind, it seems reasonable to conclude that Programs Four and One will probably require approximately the same amount of capital.

In estimating Program Four--and Program Five which follows--we are relying on first-hand experience with a particular Jamaican low-income housing scheme. The experience showed that severe overcrowding resulted when studio units were constructed for occupancy by low-income families. Most families comprised more than three persons, and there were bitter complaints against the units on the grounds of inadequate size. In fact, work is now in progress to combine studios into two-bedroom units. (The scheme was designed for this eventual conversion.) At the design stage, the Jamaican Ministry of Housing thought that the smaller studio units would have been affordable while two-bedroom units would not have been. The resulting dissatisfaction with the smaller studio units, however, convinced the Ministry that it was unwise to build units of less than two bedrooms. It needs to be borne in mind that, in these programs, the assignment of households to units on the basis of household size is not feasible. This is so because the demand (as opposed to economic demand) for these units is great. Furthermore, the allocation of units on a political basis is in vogue. First-hand experience indicates that many tenants had difficulty in paying their rent--even for the studios--but still clamoured for two-bedroom units. This seeming anomaly is partly

explained by the political allocation process, partly be the fact that income among these households is not only low, but irregular as well. Genuine overcrowding was, however, difficult to overlook. It is with this perspective that the decision to assume a subsidized unit comprising two bedrooms must be viewed. It seems likely that, with a major program (as these estimates envisage), it will be possible to rationalize the allocation system and not be wholly dependent on the political process.

Program Five. This program is the self-help equivalent of Program Four and thus is subject to most of the qualifications relevant to Program Four and Program Three. The estimated capital requirement is approximately J\$1,520 million and the capital subsidy, J\$719 million. It is worth noting that the capital subsidy alone is almost as great as the entire cost of Program Two. The capital requirement is less than that for Programs Four and One but greater than Program Three and twice as great as Program Two. In this program we assume that any household that cannot afford a conventional two-bedroom unit would be provided with a subsidized self-help two-bedroom option. (The subsidies in Programs Four and Five decrease with increasing household incomes, see Tables 4.18 and 4.19). On this basis, households with incomes of J\$2,500 and less are subsidized.

This exhausts the programs for which estimates were made. As stated in the introduction to this section, these programs are but a few of those conceivable. Furthermore, considerable simplifications have been made and heroic assumptions introduced. This has been necessary because of the absence of detailed data and the exigencies of time and space. Despite the above we have developed a set of estimates which we believe to be a reasonable (if only in order of magnitude) representation of the capital requirements of the five programs outlined. It has not been the objective of this section of this study to propose a single "optimum" housing program--assuming that such a program exists. We seek only to explore the capital implications of pursuing certain types of housing programs as opposed to others. In doing so, we have seen that the least costly program, Number Two, would result in an estimated capital requirement of J\$760 million over the 1975-1985 period. Such a program would leave 70 to 80 percent of the new households outside the market for conventional dwellings. The most costly program, Number Four, is estimated to require J\$2,141 million and a capital subsidy of J\$1,381 million. Such a program would ensure that all new households were provided, ~~as a~~ minimum, with a conventionally built two-bedroom unit. The other

programs fall somewhere in between Programs Two and Four. In Section 5.0 we look at the likely availability of capital, and in the final section (7.0) of this study we return to some of the issues raised in this section. We must now move on to examine the capital requirements arising out of attempts to upgrade the existing housing stock.

TABLE 4.14 Estimated Cost of a Program of Meeting Need Arising from New Household Formation, 1975-1985, without Regard to Income Distribution (Conventional Housing)*

HOUSE TYPE	House Size Sq.Ft.	House Cost Per Sq.Ft.	Unit House Cost J\$**	Number of Units Required	Total Cost J\$'000
ST	250	20	5,000	40,100	200,500
1-B	375	20	7,500	40,500	303,750
2-B	500	20	10,000	54,550	545,550
3-B	800	20	16,000	52,050	832,800
TOTALS	-	20		187,200	1,882,600

Source: Computed from Tables 4.05 and 4.13.

* See text for assumptions.

** Currency equivalents: US\$1.00=J\$0.91
J\$1.00=US\$1.10.

TABLE 4.15

Estimated Capital Cost of a Program of Meeting
Demand Arising from New Household Formation,
1975-1985 **

INCOME GROUP J\$***	Cost of House Affordable* J\$	Number of Units Required	Total Cost J\$'000
250	150	78,850	11,828
750	850	33,650	28,603
1500	2,400	28,050	67,320
2500	5,200	14,600	75,920
3500	8,600	9,350	80,410
4500	12,550	8,150	102,283
7500	27,050	14,550	393,578
TOTALS		187,200	759,942

* Calculated on the basis of a 10 percent interest rate and a 25 year term. See Table 4.10. A sliding scale is used in determining the percentage of income that each income group can afford. See text.

** See Table 4.08. Midpoint of income group assumed.

*** Currency equivalents: US\$1.00=J\$0.91
J\$1.00=US\$1.10.

TABLE 4.16 Sites and Services Housing Cost Estimates
(per unit) J\$, December 1975

UNIT TYPE*	HOUSE SIZE (SQ.FT.)	UNIT COST (J\$)
Studio (ST)	180	4,750
One Bedroom (1-B)	300	5,350
Two Bedroom (2-B)	420	5,830
Three Bedroom (3-B)	520	6,230

* Option 3, two core. See Appendix A9.0 and text.

TABLE 4.17 Estimated Cost of a Program of Meeting Need Arising from New Household Formation, 1975-1985, without Regard to Income Distribution (Self-Help Housing)

HOUSE TYPE	House Size* Sq. Ft.	House Unit* Cost J\$***	Number** of Units Required	Total Cost J\$'000
ST	180	4,750	40,100	190,475
1-B	300	5,350	40,500	216,675
2-B	420	5,830	54,550	318,027
3-B	520	6,230	52,050	324,272
TOTALS			187,200	1,049,449

* See Table 4.16.

** See Table 4.05.

*** Currency equivalents: US\$1.00=J\$0.91
J\$1.00=US\$1.10.

TABLE 4.18

Estimated Capital Cost of a Program of Capital Subsidies Allowing Households with Incomes Below J\$3,500 to Purchase a Conventional 2-B House*

INCOME GROUP J\$	Unit Cost of House Affordable J\$	Subsidized Unit House Cost, J\$	Capital Subsidy Per Unit J\$	Number of Units Required	Total Cost J\$'000	Total Capital Subsidy J\$'000
250	150	10,000	9,850	78,850	788,500	776,673
750	850	10,000	9,150	33,650	336,500	307,898
1500	2,400	10,000	7,600	28,050	280,500	213,180
2500	5,200	10,000	4,800	14,600	146,000	70,080
3500	8,600	10,000	1,400	9,350	93,500	13,090
4500	12,550	12,550	-	8,150	102,283	-
7500	27,050	27,050	-	14,550	393,578	-
TOTALS	-	-	-	187,200	2,140,861	1,380,921

* See text.

Currency equivalents: US\$1.00=J\$0.91
J\$1.00=US\$1.10.

TABLE 4.19

Estimated Capital Cost and Capital Subsidy for a Program of Meeting Needs Arising from New Household Formation, 1975-1985. (Income Groups below J\$2,500 Receive Subsidized 2-B Self-Help Housing. Income Groups Above J\$3,500 Pay Market Rates.)*

INCOME GROUP J\$	Unit Cost of House Affordable J\$	Subsidized Unit House Cost, J\$	Capital Subsidy Per Unit J\$	Number of Units Required	Total Cost J\$'000	Total Capital Subsidy J\$'000
250	150	5,830	5,680	78,850	457,947	446,164
750	850	5,830	4,980	33,650	196,180	167,577
1500	2,400	5,830	3,430	28,050	163,532	96,212
2500	5,200	5,830	630	14,600	85,118	9,198
3500	8,600	8,600	-	9,350	80,410	-
4500	12,550	12,550	-	8,150	102,283	-
7500	27,050	27,050	-	14,550	393,578	-
TOTALS	-	-	-	187,200	1,479,048	719,151

* See text.

Currency equivalents: US\$1.00=J\$0.91
J\$1.00=US\$1.10.

3LE 4.20

Summary of Estimates of Capital and Capital Subsidy Requirements for
Alternative Housing Programs to Deal with Household Formation, 1975-1985*

OGRAM	Capital Requirement J\$M	Capital Subsidy Requirement J\$M
Meeting Need Based on Household Size, without Regard to Income Distribution, Conventional Housing (Table 4.14).	1,883	NA
A Program of Meeting Housing Demand without Capital Subsidy (Table 4.15).	760	-
Meeting Need Based on Household Size, without Regard to Income Distribution, Self-Help Housing (Table 4.17).	1,049	NA
Meeting Need by Providing Subsidized Conventional 2-B Units for Income Groups J\$3,500 and Below, and Unsubsidized Conventional Housing for Groups Above J\$3,500 (Table 4.18).	2,141	1,381
Meeting Need by Providing Subsidized Self-Help 2-B Units for Income Groups J\$2,500 and Below, and Unsubsidized Conventional Housing for Income Groups Above J\$2,500 (Table 4.19).	1,479	719

urrency equivalents: US\$1.00=JS0.91
J\$1.00=US\$1.10.

See text.

4.4 Capital Requirements Arising from A Program of Upgrading the Existing Housing Stock

In the previous section (4.3) we were forced to make a number of assumptions in order to arrive at estimates of capital requirements. We have no choice but to follow the same course of action in this section. Adequate data are simply not available. For instance, one of the upgrading factors we attempt to deal with, is the improvement of sanitary facilities. If we propose to install a water-borne sewer system we must, of necessity, assume the existence of water in some reasonable proximity to the dwelling unit. The available 1970 data do not however, cross-tabulate dwellings by water supply and toilet facilities. We are thus forced to use our judgement in this matter. Another factor which is very important is the improvement of roads and the provision of electricity supply. These have been omitted entirely from the upgrading estimates because we simply have no data on which to base estimates. Nevertheless, the improvement of the above is critical to improving the "quality" of the housing stock. (This is so especially when housing is viewed in the broader environmental context and also in the social context-- in terms of households' perception of improvements in

their standard of living.) In undertaking any upgrading program, therefore, the collection of detailed data must be given high priority.

Why do we consider upgrading important when it is clearly a job prone to managerial and contracting complications and requires a rather detailed investigation of thousands of unique situations? The answer to this question is to be partly found in Sections 3 and 4.2. First, it is clear that the incomes of most households cannot support new conventional housing. (Firsthand experience with the Jamaican Sites and Services Project indicates that the lowest incomes could not afford sites and services without subsidies and depended upon tenements for accommodation--mainly single rooms with shared toilet and cooking facilities.) Second, a very important method of accommodating recent population growth has been by expanding existing dwellings. Third, the existing stock (especially that considered sub-standard by conventional norms) houses the majority of households at present and will continue to dominate the total housing stock for the foreseeable future. This stock represents a considerable investment (sunk) in infrastructure and its use--as we shall see in Section 5--ought to be maximized. The capital cost

of doing this seems relatively small compared with developing entirely new sites. Fourth, the existing stock is well located vis-a-vis job opportunities for low-income households. The creation of new jobs on distant sites will not be easy to accomplish. Fifth, upgrading lends itself to employment of many low-skilled persons, a factor which adds to managerial headaches. The managerial complications that arise from the "micro-contracting" nature of the upgrading process and from the necessity of organizing and supervising large numbers of persons are enormous. Also the fragmentation of land holding and the fact (see Section 5) of widespread rental occupancy in the urban areas, multiplies considerably the administrative problems involved. With this background on the upgrading problem, we now proceed to consider each category separately. The data relevant to this section are provided in Tables 4.21 to 4.27.

Upgrading Water Supply. Tables 4.21 and 4.22 provide the relevant data. Two categories are considered-- "piped into dwelling" and "piped into yard". The tables are self-explanatory. We set out what we believe to be reasonable (and realistic) standards for the existing stock and then estimate the required numerical change. As Table 4.22 indicates, there is a need to provide

approximately 86,700 units with water "piped into dwelling" and 66,000 units with water "piped into yard". For estimating the cost of this operation, it is assumed that a water supply exists in close proximity to the dwelling. The cost of water distribution is therefore not evaluated. Table 4.27 indicates the estimated cost of upgrading water supply.

Upgrading Toilet Facilities. Tables 4.23, 4.24, and 4.27 provide the relevant data. It is estimated that 72,900 units require "W.C.'s" and that water supply is (or will be) available to enable the installation.

Upgrading Occupancy. Tables 4.25 to 4.27 provide the relevant data. It is estimated that there was a need for 53,400 one-room units and 26,200 two-room units.

Capital Estimates for Upgrading. Table 4.27 provides the relevant data. The costs are estimated assuming that only the building material required for upgrading is capitalized. In the context of Jamaican building costs, this means that material costs are approximately 50 percent of total costs. In the case of toilet facilities we have used a 60 percent figure for material cost because the fittings and fixtures are relatively expensive. (The unit costs used here were obtained by

the author in December, 1975, from a firm of Jamaican Quantity Surveyors.) Based on the above we estimate that approximately J\$94 million is required for upgrading the housing stock over the ten year period, 1975-1985.

4.5 Summary

We have estimated the capital requirement for different housing programs. Our estimates point to capital requirements varying from J\$850 million to J\$2,240 million for a combination of programs arising in response to the needs of new household formation and upgrading. In Section 5.0 we try to evaluate the likely availability of capital over the 1975-1985 program period.

TABLE 4.21

Upgrading of Water Supply, 1970 - 1985 (Percentages)*

NO. REGION	Water Supply (Percentage Distribution)							
	Urban 1970				Rural 1970			
	Total	Piped into Dwelling	Piped into Yard	Other	Total	Piped into Dwelling	Piped into Yard	Other
1	100	45	46	9	100	10	14	76
2	100	25	40	25	100	6	8	86
	1985 Standard - Percentage Distribution							
1	100	75	25	-	100	25	30	45
2	100	50	50	-	100	20	25	55
	1970 - 1985 Required Percentage Change							
1	NA	30	NA	NA	NA	15	16	NA
2	NA	25	10	NA	NA	14	17	NA

* See text.

TABLE 4.22

Upgrading of Water Supply (Piped into Dwelling and Piped into Yard)
1970 - 1985*

NO. REGION	Piped into Dwelling				1970-1985 Upgrading Requirement		
	Urban 1970 Dwellings Total	1970-85 Upgrading Percentage	Rural 1970 Dwellings Total	1970-85 Upgrading Percentage	Total	Urban	Rural
1	135,767	30	36,625	15	46,224	40,730	5,494
2	52,904	25	194,863	14	40,507	13,226	27,281
3	188,671	NA	231,488	NA	86,731	53,956	32,775
	Piped into Yard						
1	135,767	-	36,625	16	27,583	21,723	5,860
2	52,904	10	194,863	17	38,418	5,290	33,128
3	188,671	NA	231,488	NA	66,001	27,013	38,988

* See text.

TABLE 4.23

Upgrading of Toilet Facilities 1970 - 1985 (Percentages)*

NO. REGION	Toilet Facilities and Percentage Distribution								
	Urban 1970				Rural 1970				
	Total	Pit	W.C.	Other	Total	Pit	W.C.	Other	
1	100	23	76	1	100	89	9	2	
2	100	68	30	2	100	89	5	6	
	1985 Standard - Percentage Distribution								
1	100	5	95	-	100	75	25	-	
2	100	40	60	-	100	75	25	-	
	1970 - 1985 Required Percentage Change								
1	NA	NA	19	NA	NA	NA	16	NA	
2	NA	NA	30	NA	NA	NA	20	NA	

* See text.

TABLE 4.24

Upgrading Toilet Facilities (W.C.'s) 1970 - 1985*

NO. REGION	1970	1970-1985	1970	1970-1985	1970-1985 W.C. Upgrading		
	Dwellings Total Urban	Upgrading Percentage Urban	Dwellings Total Rural	Upgrading Percentage Rural	Total	Urban	Rural
1	135,767	9	36,625	16	18,079	12,219	5,860
2	52,904	30	194,863	20	54,844	15,871	38,973
3	188,671	NA	231,488	NA	72,923	28,090	44,833

* See text.

TABLE 4.25

Upgrading Occupancy 1970 - 1985 (Percentages)*

NO. REGION	Urban					Rural				
	Total	1	2	3	Other	Total	1	2	3	Other
1 Family Size 1960 (Persons)	100	21	23	17	39	100	17	18	15	50
1 Dwellings Size (Rooms) 1970	100	44	18	11	27	100	31	28	19	22
2 Family Size 1960 (Persons)	100	23	20	16	41	100	18	16	14	52
2 Dwelling Size (Rooms) 1970	100	37	23	14	26	100	24	32	20	24
1985 Standard Percentage Distribution										
1 Dwelling Size	NA	20	NA	NA	NA	NA	20	20	NA	NA
2 Dwelling Size	NA	20	NA	NA	NA	NA	20	20	NA	NA
1970 - 1985 Required Percentage Change										
1 Dwelling Size	NA	24	NA	NA	NA	NA	11	8	NA	NA
2 Dwelling Size	NA	17	NA	NA	NA	NA	4	12	NA	NA

* See text.

TABLE 4.26

Upgrading Occupancy (1 Room and 2 Rooms) 1970 - 1985*

NO. REGION	1 Room		Rural		1970 - 1985 Upgrading Requirement		
	Urban 1970 Dwellings Total	1970-85 Upgrading Percentage	1970 Dwellings Total	1970-85 Upgrading Percentage	Total	Urban	Rural
1	135,767	24	36,625	11	36,613	32,584	4,029
2	52,904	17	194,863	4	16,788	8,994	7,794
3	188,671	NA	231,488	NA	53,401	41,578	11,823
	2 Rooms						
1	-	-	36,625	8	2,930	-	2,930
2	-	-	194,863	12	23,283	-	23,283
3	-	-	231,488	NA	26,213	-	26,213

* See text.

TABLE 4.27

Estimated Capital Cost of Upgrading Program, 1975-1985*

UPGRADING FACTOR	Unit Cost J\$	Number of Units Required	Total Cost J\$'000
1 Toilet Facilities 'W.C.'s' (includes toilet, shower, and drainage)	500	72,900	36,450
2 Water Supply			
2a Piped into Yard	50	66,000	3,300
2b Piped into Dwelling	75	86,700	6,500
3 Occupancy			
3a 1 Room (100 sq.ft.@J\$5/sq.ft.)	500	53,400	26,700
3b 2 Rooms (200 sq.ft.@J\$4/sq.ft.)	800	26,200	20,960
			93,910

* See text.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

5.0 The Availability of Housing Capital, 1975-1985

The previous sections of this study have been directed at evaluating the capital required for coming to grips with the Jamaican housing problem. This section seeks to evaluate how much capital is likely to be available for the above purpose. In attempting this evaluation, the method adopted is to examine past trends in residential capital formation and, on this basis, to project future trends. We then seek to compare capital need with capital availability and to draw implications regarding the difference, i.e., the "capital gap". Tables 5.01 to 5.08 provide the data relevant to this section. In addition to the above, this section deals with the structure of the capital market for housing. Although we use residential capital formation as the basis for evaluating housing investment, it is probable that this measure understates investment in the housing sector. Evidence of this shows up in Section 5.2 when we look at the mortgage market. A great deal of care must, therefore, be taken in interpreting the data in this section. Let us proceed to examine residential capital formation.

Residential Capital Formation. The data for 1961 to 1974 indicate that gross fixed capital formation in

residential construction has been a fairly stable percentage of gross domestic product (GDP) and also of gross national product (GNP--not shown). The above percentage has fluctuated between 2 and 4 percent of GDP and recently (since 1971) has been stable at 3 percent. We feel justified, therefore, in evaluating future capital formation by projecting GDP forward to 1985 and assuming that the above-mentioned stable relationship will continue. Table 5.02 indicates the results of these projections. It is estimated that between J\$600 million and J\$900 million (gross--constant 1975 J\$) will be available for residential construction over the period beginning at the end of 1975 and ending at the end of 1985. In arriving at the estimates we used varying assumptions regarding rates of growth of GDP and inflation. (Appendix A10.0 discusses the projections used in this section.) What emerges clearly from these projections is that if the recent levels of inflation continue, then capital formation will decline in absolute constant dollar terms throughout the period rather than increase. The consequences of this for housing programs is not hard to imagine.

A few words are in order regarding the data presented in this section. First, GDP is used as the basis of the projections because "constant values" are available and also because in an open economy such as Jamaica, it

is a more reliable indicator of growth than GNP. Second, the figures for fixed residential capital formation do not include residential land development. This latter category is not separated from capital formation in land reclamation and development and other investment in land. The data therefore understate the total level of investment in residential construction. Third, we make no allowance for capital consumption in the residential sector, bearing in mind point two above, and also because we do not have the data which enable us to do so. Fourth, although it is not the purpose of this section to explain the relationships in the data presented, the following observations seem worth making:

- a) The upward trend in capital formation between 1966 and 1969 is probably due to heavy investment in the bauxite industry.
- b) Residential construction as a percentage of gross capital formation and as a percentage of capital formation fluctuated widely between 1960 and 1971. The fluctuations appear to have dampened since.
- c) Since 1965, gross fixed capital formation in construction has fluctuated between 16 percent and 14 percent of gross domestic product.
- d) The increase in the rate of growth in fixed capital formation in residential construction over the period 1969 to 1974 partly reflects significant inflation in construction costs.
- e) Inflation has been high since 1966 and became positively spectacular in 1974.

We now proceed to evaluate the "capital gap".

TABLE 5.01A

Gross Domestic Product and Capital Formation, 1960-1974

	1960	1961	1962	1963	1964	1965	1966	1967
1) Gross Domestic Product (GDP) at Factor Cost (Current Values)*	431,752	461,504	480,856	511,566	547,894	594,280	682,073	723,077
2) GDP at Factor Cost (Constant, 1960, Values)*	431,752	444,130	451,808	466,900	503,414	543,894	567,769	589,743
3) Implicit GDP Deflator*	100.0	103.9	106.4	109.6	108.8	109.3	120.1	122.6
4) Gross Fixed Capital Formation (GFCF)*	99,200	97,800	98,200	91,600	111,800	124,200	146,000	170,000
5) GFCF in Construction and Works*	49,628	46,806	42,248	39,390	49,064	58,372	75,664	89,061
6) GFCF in Residential Building*	17,100	14,980	13,798	12,600	17,634	21,578	22,430	17,515
7) (4) as Percentage of (1)**	23	21	20	18	20	21	21	24
8) (5) as Percentage of (1)**	11	10	9	8	9	10	11	12
9) (5) as Percentage of (4)**	50	48	46	43	44	47	52	52
10) (6) as Percentage of (1)**	4	3	3	2	3	4	3	2
11) (6) as Percentage of (4)**	17	15	14	13	16	17	15	10
12) (6) as Percentage of (5)**	34	32	30	31	35	40	30	20
13) Annual Percentage Change of GDP (Current Values--'1') **		+6.9	+4.2	+6.4	+7.1	+8.5	+14.8	+6.0
14) Annual Percentage Change in GDP (Constant Value--'2') **		+2.9	+1.7	+3.3	+7.8	+8.0	+4.4	+3.9

* National Income and Product Statistics, Department of Statistics, Jamaica (various publications from 1960-1974). Figures in J\$'000.

** Computed.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE 5.01B Gross Domestic Product and Capital Formation, 1960-1974

	1968	1969	1970	1971	1972	1973	1974	1960-74*	1969-74*
1)**	784,568	868,944	974,835	1,093,472	1,264,533	1,466,382	1,920,446	11.25	17.19
2)**	619,815	666,178	734,208	770,842	859,971	877,960	915,928	5.52	6.57
3)**	126.6	130.4	132.8	141.9	147.0	167.0	209.7	5.47	10.00
4)**	221,384	252,138	265,876	295,672	293,421	351,391	493,976	12.15	14.40
5)**	104,992	119,652	126,823	144,759	143,657	172,039	241,848	11.98	15.11
6)**	19,444	21,527	23,277	32,451	32,204	38,566	54,215	8.59	20.29
7)	28	29	27	27	23	24	26	NA	NA
8)	13	14	13	13	11	12	13	NA	NA
9)	47	47	48	49	49	49	49	NA	NA
10)	2	2	2	3	3	3	3	NA	NA
11)	9	9	9	11	11	11	11	NA	NA
12)	19	18	18	22	22	22	24	NA	NA
13)		+10.8	+12.2	+12.2	+15.6	+16.0	+31.0	NA	NA
14)		+7.5	+10.2	+5.0	+11.6	+2.1	+4.3	NA	NA

* Average annual compound rates of growth.

** Figures for items (1) to (6) in J\$'000.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE 5.02 Estimated Real Growth in Gross Domestic Product (GDP) and Gross Capital Formation in Residential Construction, 1976-1985**
(Three Alternative Projections)

YEAR	GDP (1) J\$M	GDP (2) J\$M	GDP (3) J\$M
1974	1,920*	1,920*	1,612
1975	2,137	2,251	1,769
1976	2,254	2,399	1,817
1977	2,378	2,558	1,859
1978	2,509	2,727	1,897
1979	2,647	2,906	1,928
1980	2,793	3,098	1,954
1981	2,940	3,303	1,974
1982	3,108	3,521	1,988
1983	3,274	3,753	1,995
1984	3,494	4,001	1,996
1985	3,650	4,265	1,991
1976-1985	29,033	32,531	19,400

Projected Capital Formation Residential Construction, 1976-1985

3 Percent of GDP	871	976	582
5 Percent of GDP	1,452	1,626	970
7.5 Percent of GDP	2,178	2,440	1,455
10 Percent of GDP	2,903	3,253	1,940

* Actual 1974 data.

** See Appendix A10.0 for assumptions and computations. Totals may not add because of rounding.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

5.1 The Capital Gap, 1975-1985

We have (see Section 4.5) estimated that in order to implement programs designed to respond to needs arising from household formation and upgrading, we require capital sums ranging from J\$850 million to J\$2,240 million over the period 1975-1985. In the previous section we have estimated that the capital likely to be available for this purpose (given existing patterns of residential capital formation) varies between J\$600 million and J\$900 million. On this basis it seems possible to implement (optimistically) the least costly program considered. This program would upgrade existing dwellings but would not deal with the need of 70 to 80 percent of the new households formed over the period. In order to implement the most expensive (and relatively conservative) conventional housing program, residential capital formation would have to be increased from approximately 3 percent of GDP to 7.5 percent of GDP, on the basis of optimistic estimates, and well over 10 percent of GDP on the basis of "realistic" estimates (Table 5.02, #3). What thus emerges is that in order to house the population conventionally (even at modest standards) will require levels of residential capital formation that only Israel has ever achieved [12]. Israel, furthermore,

did not sustain these levels. We therefore arrive at the (not very surprising) conclusions that in order to cope with housing problems it will be essential to concentrate considerable attention on self-help housing, while at the same time trying to reduce building costs and to control inflation. Clearly, if Jamaica expects to deal with its housing problems over the next decade, it is essential to try to increase residential capital formation to between 5 percent and 7.5 percent of GDP. The final sections of this study deal with the issues that arise from attempting the above. Before doing so we deal briefly (Section 5.2) with some features of the Jamaican mortgage market. As previously alluded to, the data in Section 5.2 exhibit a number of anomalies that lead us to suspect that capital formation in the residential sector is understated. The effect of this is probably to make our "capital gap" somewhat less problematic than this section (5.1) indicates. It is not possible, on the basis of available data, to be more precise on this question, however.

5.2 The Mortgage Market

In this section we discuss the Jamaican mortgage market. A detailed examination is outside the scope of this study. We seek only to outline major market features. Before doing so we must point out a major anomaly in the data. This concerns the value of new mortgages. (The data relevant to this section are provided in Tables 5.03 to 5.08.) When we compare Tables 5.03 and 5.05 we find that for the years 1971 and 1972, the Bank of Jamaica reports figures for the value of new mortgages (residential and non-residential) that are approximately one-half the figures reported by the Department of Statistics. Investigation revealed that the Bank of Jamaica figures do not include the mortgage transactions of the commercial banks. Officers of the Bank of Jamaica state that it is their belief that inclusion of the commercial bank figures would result in serious double counting since many "apparent" mortgages given by the commercial banks are, in fact, a result of property being held as collateral for business loans. The Bank of Jamaica thus records only those mortgages that are registered with the Titles Office and reported by the financial institutions indicated in Table 5.03. The data collected by the Department of Statistics draw upon all sources (i.e., include the

commercial banks and all other mortgage originating bodies). Officers of the Department say that they are aware of the double counting issue, but they do not believe that it seriously affects the data reported. The question of which of these sets of data accurately reflects the activity of the mortgage market is outside the scope of this study. (We simply do not have the data nor the time to deal with this issue.) We report both sets of data and urge caution in interpreting them. Let us proceed to examine the data. Thereafter we deal with major institutional changes that have been taking place in the market.

Market Structure. The only available data which break down mortgage lending by source, are those provided by the Bank of Jamaica (Tables 5.03 and 5.04). As previously stated above, it is possible that these data underestimate the total volume of mortgage lending. They do, however, with a reasonable degree of accuracy, represent the activity of the sources that are reported in the tables. The largest mortgage originators are the building societies. Since 1972 these societies accounted for more than 30 percent of new mortgage loans. In 1972 building societies made new loans totalling J\$17 million. The figure for 1973, J\$14.3 million, is thought to be low, due largely

to late reporting of 1973 transactions. It will be noticed that the above figures for mortgage lending of the building societies (see Table 5.03) are lower than the figures shown in Table 5.04. What seems to be happening here is that Table 5.04 reports data supplied directly by the building societies association, while Table 5.03 reports data from the Titles Office. There is probably some time lag between the two sets of data--with Table 5.04 being the more accurate. The building societies make more than 90 percent of their mortgages in the residential sector and along with private lenders (12.9 percent, J\$6 million in 1973) are thought to be the major source of capital for this sector. As can be seen from Tables 5.06 to 5.08, although the value of new house mortgages originated by the building societies has increased substantially (from J\$6.8 million in 1967 to J\$24.7 million in 1974) the number of loans has not changed significantly over the period (1,534 in 1967 to 1,603 in 1974). There has clearly been a trend towards larger average loan values--probably in response to the tremendous inflation in construction costs over the period. This reinforces our decision--Section 4.0--not to make downward adjustments to our 1975-1985 estimate of housing need in order to take cognizance of 1970-1975

house construction activity. This was done primarily on the basis that most of the houses built during this period could not be afforded by 70 to 80 percent of households. A further relevant point here (see also Methodology, Section 1.3), is that clearly we cannot assume for policy-making purposes, that the finance available for housing construction is equally available to all income groups. The "formal" financial institutions do not significantly benefit the vast majority of households. The available data give no clue as to the financial mechanisms that serve low-income households.

The data indicate that, in addition to the above-mentioned categories, insurance companies and other financial institutions played an important part in the market and that trust companies and merchant banks are rapidly increasing in significance. Unfortunately, we do not have any data on the lending by these institutions to the housing sector. (Collection of such data is clearly an important task for the future.) It is believed, however, that these latter institutions (insurance companies, other financial institutions, trust companies and merchant banks) along with the commercial banks, are predominantly active in the non-residential sectors. Table 5.05 includes the

mortgage lending activity of the commercial banks and, as previously mentioned, these figures are twice as large as the figures shown in Table 5.03. Before moving on to discuss some recent institutional changes in the mortgage market we should point out that significant amounts of housing finance originate from outside Jamaica. Unfortunately, we have no data that would enable us to properly analyze this factor.

Recent Institutional Changes. Two changes are deemed important to this study. The first is the setting up by the government of the Jamaica Mortgage Bank (in June, 1971) and the National Housing Trust (in 1975). The intent of both these institutions is to increase the availability and the stability of flow of long-term finance to the housing sector. Let us first deal with the Jamaica Mortgage Bank (JMB).

"Daughter of Fanny Mae" (Federal National Mortgage Association--U.S.) is an appropriate title for the Jamaica development bank (the JMB). The bank was established in 1971 with the assistance of the Department of State, Agency for International Development (see A.I.D. Report [1]). It is not, therefore, surprising that the JMB bears the stamp of its U.S. financial antecedents. The JMB is a wholly owned

corporation of the government of Jamaica, falling under the portfolio of the Ministry of Finance. Its initial share capital was J\$5 million. This was supplemented by a U.S.\$10 million concessionary loan from U.S. A.I.D. (This loan is in keeping with A.I.D.'s present policy of supporting financial institutions in developing countries rather than getting directly involved in housing development.) The authorized share capital of the JMB is J\$20 million. We quote at length below from the JMB annual report [13] regarding the objectives of the bank, secondary market operation and primary market operation

"B. Objectives of the Bank

The Bank was established primarily as the central mortgage organization to which approved mortgage institutions can sell eligible residential first mortgages from time to time. An eligible first mortgage has the following characteristics:

- a) it conveys or encumbers a fee simple estate in realty;
- b) is payable in equal monthly instalments of principal and interest;
- c) it is amortized over a period which shall not be more than 361 months from the date of the mortgage, but in the case of a house constructed more than 5 years prior to the date of the mortgage, the term shall not exceed three-fourths of the property's remaining useful life;
- d) it has an original principal balance not in excess of \$16,319;
- e) it is secured by property which, at the time the loan was made, had a value not in excess of \$18,132.00; and
- f) it has a principal balance at the time of offer not in excess of 70 per cent of the value of the mortgaged property, unless

such loan is insured under the Mortgage Insurance Law or the portion thereof in excess of 70 per cent of such value is insured by an institution acceptable to the Bank.

Approved institutions are encouraged to sell mortgages from their portfolio in order to improve their liquid position so that they can meet the current demand for home mortgages.

In addition to providing liquidity in the mortgage market, the JMB is charged with the following responsibilities:

- 1) to participate directly in low and middle income housing developments in Jamaica by providing first mortgages on low income houses;
- 2) to raise local capital through mortgage bond issues;
- 3) to operate the Government Mortgage Insurance Programme;
- 4) to mobilize external funds from private and governmental sources; and
- 5) to furnish financial advice and provide or assist in obtaining managerial, technical and administrative services for persons engaged in building developments in Jamaica.

In order to carry out its objectives, the transactions relating to the activities of the Bank are executed as follows:

- (1) Secondary Market Operation
- (2) Primary Market Operation
- (3) Mortgage Insurance Operation.

C. Secondary Market Operation

In this market the primary function of the Bank, i.e. creation of liquidity in the mortgage market, is effected. Rather than waiting for the expiration of the maturity period of mortgage loans, approved Seller/Service providers, i.e. institutions which have satisfied JMB's eligibility requirements as to net worth, ability to originate and service mortgages, etc., are given the opportunity to sell the eligible mortgages they hold in their portfolios and reinvest the proceeds in new eligible mortgages.

The transactions relating to the purchases of mortgages in the Secondary Market are on the basis of an auction system.

The Mortgage Auction System - How It Works

Periodically (usually each month) an invitation is issued by the Bank to its approved Seller/Serviceers announcing that a certain amount of money will be made available for the purchase of eligible home mortgages.

Each participating institution will then submit its bid at a specified yield in a sealed envelope on or before the closing date of the invitation of offer to purchase these mortgages. Following this deadline date the Allotment Committee of the Bank meets and determines what offers will be accepted. Acceptances are based upon the highest yield offered in terms of the minimum acceptable yield established by the Bank, immediately before the opening of the tenders. The JMB reserves the right to accept or decline any offer, in whole or in part, at its sole discretion.

After the Seller/Serviceer is advised that the Bank has accepted its tender, then the Seller/Serviceer must deliver the corresponding mortgages within 45 days.

Processing of the mortgages begins as early as possible after acceptance until disbursement is made to the Seller/Serviceer. The Bank ensures that the security being purchased satisfies all criteria as specified in its Rules and Policies.

D. Primary Market Operation

As a general policy, and subject to the availability of funds, the Bank will provide primary first mortgage loans through developers or cooperative organizations which are in the business of developing low and middle income houses."

The closeness of the JMB to Fanny Mae operational characteristics is obvious (see [21] for a discussion of Fanny Mae operations). Some of the Bank's problems stem from the above factor. The most prominent of these problems is the apparent inability of the JMB to sell bonds on the Jamaican capital market in order to expand its operations. What appears to be happening is that the Ministry of Finance restricts the activity

of the JMB in the capital market because of the fear that the JMB would be competing with the Ministry for limited funds. This also reflects the fact that, unlike the U.S. capital market, the Jamaican capital market is embryonic. Thus the quasi-private behaviour that "Fanny Mae" exhibits on the U.S. capital market will not and cannot be tolerated by the Ministry of Finance. In 1973 [13], the primary market operations of the JMB resulted in commitments of approximately J\$2.5 million to residential mortgages, while activity in the secondary market resulted in the purchase of J\$5.1 million in residential mortgages. The average original principal balance of the mortgages purchased in 1973 was J\$7,200. This clearly makes the JMB's activities largely irrelevant to 70 to 80 percent of Jamaican households. Furthermore, due to representations made by primary mortgage originators, the JMB, in 1973, increased the maximum eligible original principal balance from J\$10,000 to J\$17,000 per dwelling unit. In the light of this, we conclude that the JMB is unlikely to be of assistance in alleviating the housing problem. Let us now consider the National Housing Trust.

The National Housing Trust (NHT) began operation in January, 1976 under the aegis of the Economic

Stabilization Committee of the Office of the Prime Minister. Published material on the formation of the NHT is unavailable. We can only state, therefore, information personally obtained from officers of the NHT in December of 1975. The NHT is clearly modelled on the Latin American housing banks--primarily Mexico and Brazil. It will depend, for its financial operation, on contractual savings by workers via a payroll deduction scheme. Workers are expected to contribute 2 percent of their gross income and employers, 3 percent of theirs (not tax deductible). Self-employed persons are expected to contribute 3 percent of their gross income. The salary deductions are collected by the collector of taxes along with income taxes and national insurance contributions. It is projected that approximately J\$50 million will be collected in 1976. This sum will be allotted to housing finance in each parish according to that parish's contribution to the NHT. Each contributor to the National Housing Trust is eligible for a mortgage loan. If, after seven years of contribution, the contributor has not obtained a loan, he is entitled to a refund of his first year's payment along with interest, projected at 6 percent. Every subsequent year (after the seventh year) that a contributor does not receive a mortgage loan, he is

entitled to withdraw one year's contribution plus interest. (It is unclear precisely how this will be computed.) Employers are eligible to withdraw their contribution in full (with interest) after 25 years. The National Housing Trust estimates that 90 percent of the labour force will be entitled to a loan under this scheme. The maximum eligible principal balance is expected to be in the region of J\$15,000. Clearly, if the projections of the NHT are fulfilled, this institution can make a very significant contribution to the housing sector.

In summary, it seems not unreasonable to conclude that the JMB was an inappropriate institutional vehicle for attempting to deal with the Jamaican housing problem. As Buelink [4] points out, the contractual savings institution is probably more relevant for mobilizing savings for long-term investment in the housing sector in developing countries. This is because incomes are low, voluntary savings are not an ingrained social habit, inflation is rampant, confidence in financial institutions is shaky, and capital markets are undeveloped. Saving must therefore be forced. The response to the promise of a house has shown (in Latin America) that households are quite prepared to make the sacrifice.

At present, it appears that both the JMB and the NHT will continue to exist side by side. The reluctance of the Jamaican government to rationalize the institutional framework is readily explainable. First, the politicians may not be aware of the institutional duality. Second, if the politicians are aware, then they are simply showing their well known propensity for setting up new organizations without eliminating former, now obsolete, ones. Having two institutions, though irrational, avoids all the problems, employment and otherwise, that would result from dismantling the obsolete one. A third factor is the failure to integrate housing policy into national development planning (this is discussed in subsequent sections). The result of this has been a competition between the Ministry of Finance and the Ministry of Housing for control of the JMB and NHT. (It also results, as we have already mentioned, in competition between the Ministry of Finance and the JMB for capital resources in the market.) The Ministry of Finance maintains that the housing problem is a financial problem while the Ministry of Housing maintains that house mortgage financing should be within its portfolio. Hidden within the debate are issues concerning the distribution of power among various ministers. These issues are outside the scope of this study. To omit them

from consideration would, however, result in a fundamental misunderstanding of the evolution of institutions and the future course of housing policy.

TABLE 5.03

Flow of Mortgage Finance as Recorded by the Registrar
of Titles

SOURCE OF FUNDS	1971 J\$mn.	% of Total	1972 J\$mn.	% of Total	1973 J\$mn.	% of Total
Building Societies	10.3	23.3	17.0	34.7	14.3	30.8
Private Lenders*	8.2	18.5	6.2	12.7	6.0	12.9
Insurance Companies	7.9	17.9	7.9	16.1	8.3	17.8
Trust Companies	1.0	2.3	2.1	4.3	4.9	10.6
Merchant Banks	0.2	0.4	0.5	1.0	3.2	6.9
Mortgage Finance Companies	5.2	11.8	5.3	10.8	1.5	3.2
Other Financial Institutions**	11.4	25.8	10.0	20.4	8.3	17.8
Total	44.2	100.0	49.0	100.0	46.5	100.0

* Includes Attorneys-at-Law

** Does not include the entire mortgage portfolio of the commercial banks. See text.

Source: Bank of Jamaica Report, and Financial Statement of Accounts for year ending December, 1973.

Currency Equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE 5.04

Classification of Mortgage Loans by Building Societies

GROUP	1971 J\$mn.	% of Total	1972 J\$mn.	% of Total	1973 J\$mn.	% of Total
Housing	11.2	89.6	18.7	91.7	22.0	94.0
Commerical Building	1.0	8.0	1.3	6.4	0.9	3.9
Other	0.3	2.4	0.4	1.9	0.5	2.1
Total	12.5	100.0	20.4	100.0	23.4	100.0

Source: Bank of Jamaica Report, and Financial Statement of Accounts for year ending December, 1973.

Currency Equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE 5.05

New Mortgages by Region 1961 - 1972

NO. REGION	Number of Loans											
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
1a Kgn/St.Andrew	5,003	3,436	3,677	3,376	4,124	3,705	3,596	3,740	3,687	NA	3,735	3,507
1b+2 Other Parishes	1,459	1,153	1,219	1,049	1,046	1,002	1,159	1,357	1,541	NA	3,411	3,523
3 Jamaica	6,462	4,589	4,896	4,425	5,170	4,707	4,755	5,097	5,228	NA	7,146	7,030
	Loan Value J\$'000*											
1a Kgn/St.Andrew	19,716	20,758	13,900	14,304	19,102	22,136	19,614	28,436	28,530	NA	45,914	69,905
1b+2 Other Parishes	6,970	4,596	4,480	4,060	4,268	5,378	6,868	8,268	18,793	NA	37,135	35,098
3 Jamaica	26,686	25,354	18,380	18,364	23,370	27,514	26,482	36,704	47,323	NA	83,049	105,003
	Average Loan Value J\$'000*											
1a Kgn/St.Andrew	3,940	6,040	4,240	4,240	4,630	5,970	5,450	7,600	7,740	NA	12,290	19,930
1b+2 Other Parishes	4,780	3,990	3,680	3,870	4,080	5,370	5,930	6,090	12,200	NA	10,890	9,960
3 Jamaica	4,130	5,520	3,750	4,150	4,520	5,850	5,570	7,200	9,050	NA	11,620	14,940

* 61-64 loan values converted $\text{J\$}1 = \text{J\$}2.00$.

Source: Computed from Building Activity in Jamaica 1961-65 and Building Activity in Jamaica 1965-1972, Department of Statistics, Jamaica.

Currency Equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE 5.06

Mortgage Lending by Building Societies by Type of Loan,
1967-1974 (Number of Loans)

TYPE OF LOAN	Number of Loans							
	1967	1968	1969	1970	1971	1972	1973	1974
1 Housing								
a) Owner-Occupier	1,122	1,131	1,455	1,057	865	1,188	1,084	1,021
b) Housing Scheme	173	188	154	192	212	161	259	301
c) For Tenancy	239	273	345	309	260	459	346	281
2 Undeveloped Lot	33	45	53	88	51	69	66	61
3 Semi-Commercial Schemes	26	34	59	39	42	36	7	19
4 Commercial Schemes	24	35	22	47	41	50	33	33
5 Agricultural Enterprises	25	15	-	27	15	21	23	111
6 Land Development	6	-	34	-	-	-	1	4
Total	1,648	1,721	2,122	1,759	1,486	1,984	1,819	1,831

Source: Monetary Statistics, 1971 and 1974, Department of Statistics, Jamaica.

TABLE 5.07

Mortgage Lending by Building Societies by Type of Loan,
1967-1974 (Value of Loans in J\$'000)

TYPE OF LOAN	Value of Loan J\$'000							
	1967	1968	1969	1970	1971	1972	1973	1974
1 Housing								
a) Owner-Occupier	4,578	5,792	7,978	7,857	7,400	12,001	13,940	15,787
b) Housing Scheme	1,110	1,340	949	1,715	1,806	1,842	3,691	4,631
c) For Tenancy	1,102	1,444	2,450	2,188	1,982	4,878	4,353	4,277
2 Undeveloped Lots	32	80	129	207	110	283	278	322
3 Semi-Commercial Schemes	198	234	183	286	381	443	102	227
4 Commercial Schemes	160	260	874	773	626	815	770	801
5 Agricultural Enterprises	70	32	29	141	144	145	206	18
6 Land Development	24	-	-	-	-	-	18	46
Total	7,274	9,182	12,600	13,167	12,449	20,407	23,358	26,109

Source: Monetary Statistics, 1971 and 1974, Department of Statistics, Jamaica.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE 5.08

Mortgage Lending by Building Societies by Type of Loan
by Average Size of Loan, 1967-1974

TYPE OF LOAN	Average Size of Loan							
	1967	1968	1969	1970	1971	1972	1973	1974
1 Housing								
a) Owner-Occupier	4,080	5,121	5,843	7,426	8,555	10,101	12,860	15,462
b) Housing Schemes	6,416	7,128	6,162	8,932	8,090	11,441	14,251	15,385
c) For Tenancy	4,611	5,289	7,101	7,081	7,623	10,627	12,581	15,221
2 Undeveloped Lots	NA	NA	NA	NA	NA	NA	NA	NA
3 Semi-Commercial Schemes	NA	NA	NA	NA	NA	NA	NA	NA
4 Commercial Schemes	NA	NA	NA	NA	NA	NA	NA	NA
5 Agricultural Enterprises	NA	NA	NA	NA	NA	NA	NA	NA
6 Land Development	NA	NA	NA	NA	NA	NA	NA	NA
Total	4,414	5,335	5,938	7,486	8,378	10,286	12,841	14,259

Source: Computed from Tables 5.06 and 5.07.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

6.0 The Role of Housing in Economic Development Programs

In previous sections we have used somewhat narrow criteria to assess housing need, and in Section 1.3 (Methodology) we tried to point out some of the limitations of this approach. In this section these limitations are further explored. We broaden the scope of the discussion to look at the role that housing plays in the process of development and the consequent problem of deciding how much of the country's scarce resources ought to be allocated to the housing sector. Needless to say, there can be no "hard and fast" rules on the latter as the housing and non-housing needs of a particular country are in a perpetual state of flux as the structure of that country's economy and society evolve and undergo transformation. We try, first, to look at the problem in its general context, and then to deal specifically with Jamaica.

As is often the case in social science, there are protagonists for a variety of viewpoints. In dealing with housing the debate is at least three-cornered though, as we shall see, a "fourth corner" is emerging that appears to have the potential of bringing a degree of rationality to the ~~debate and~~ at the same time reconciling a number of seemingly hitherto unreconcilable positions. The word "debate" is important in

the context of this discussion because, it must be made clear, the "science" of housing economics is one of the most primitive areas of an admittedly primitive (though rapidly developing) science. Hitherto, economists have generally tended to ignore housing issues. It was not until the 1960's that its role in economic development became a serious area of study [8]. Housing had, hitherto then, been written off by development economists as a consumption investment that ought to be postponed by most developing countries until later stages in their development. Before embarking on the body of the discussion, it seems useful to outline the variety of views that persist in the debate.

The first view is that held by the "housers". This group constitutes architects, sociologists, city planners and assorted environmental and social specialists. Their case rests on their perception of the squalid and degrading physical and social conditions of the poor. Their prescription for dealing with the problem is usually the massive mobilization and infusion of money and social organizational effort. Needless to say, this group is not homogeneous. Some are for upgrading and ~~rehabilitation~~ rehabilitation. Others are for demolition and replacement. Still others lay the

stress on upgrading human services. There are exceptions, of course, but, if any one factor can be said to be characteristic of this group, it would be their lack of understanding of (and sometimes unconcern with) how the necessary resources to achieve their objective will be obtained. The money simply "has to be found". Not surprisingly, the money is, more often than not, "unfindable", and in many cases where the money is available, the priorities of the "housers" are at variance with that of the "housees". "Improvement" usually takes the form of higher quality dwelling units that are outside the financial capacity of the "housee" to maintain and must thus be subsidized. The "housee" might prefer increased income to better housing and to use the money for educational or nutritional purposes instead. Alternatively, the "housee" may simply prefer increased leisure and to continue to live in squalor. Such "perverse housees" are the bane of "housers" everywhere.

There is a sub-group of the "housers" that seems worthy of special mention here. This group comprises the "housing authorities" of a quasi-public nature that have recently emerged in many developing countries. (The Jamaican equivalent of ~~this group~~ is the National Housing Corporation, organized in 1972.) Many of these

groups pursue a policy of providing housing for middle income civil servants and bureaucrats and operate under the fictional guise of reducing building costs, competing with, and/or supplementing the private sector. Often they are charged with the responsibility of making profits with which to subsidize the low-income sector. Needless to say, profits are seldom forthcoming and these institutions often end up being subsidized--sometimes by the poor. The Jamaican case will be further discussed in the final section of this study.

To be fair to the "housers" their position has been undergoing a process of gradual revision. In fact, a new sub-group has emerged and now represents a growing orthodoxy. This sub-group, the "self-helpers" whose main advocate is John Turner [26], has pointed to the very valuable roles that the informal sector (the polite name for the oppressed urban classes) plays in the urban housing economy. Turner's case is buttressed by social anthropologists such as Oscar Lewis [15] and Lisa Peattie [19] who have attested to the vitality of the social and economic processes that take place in the growing urban slums of most developing countries. Turner's position seems to be that the urban poor, given some assistance in the form of land,

basic infrastructure and access to suitable credit, can and will solve the housing problem for themselves at costs (in manpower, material and financial terms) far lower than could be achieved under "bureaucratic" planning and construction. This "solution" is further supposed to be more congenial to the poor urban household and does not force upon them (or the rest of the society) costs and standards that they are unwilling and unable to assume. Self-help, self-determination, democracy, private enterprise and other "goodies" reign supreme in this "universe" of Turner's. Here housing deficits and needs, expressed in terms of standard conventional units are irrelevant. (A somewhat uncharitable view of Turner's position is that he has re-discovered the endless market demand for "inadequate" housing. His position is not entirely without merit, however, as will be shown later on in this study.)

The "self-helpers" have brought some perspective and realism into the problem of housing policy formulation. Their undeniable contribution has been to bring the "housees" into the discussion, and to point out to the "bureaucratic planners" the unreality of their standards and targets. A further, and very important, accomplishment was to point out the need to tie housing

policy to the dynamic social and economic processes that occur in low-income communities. "Self-helpers" seem bent on avoiding the issue of coming to grips with the need to structurally transform the economy and society of developing countries (and perhaps that of some developed countries as well). This problem is generally viewed (where it is viewed at all) as being one of gradually adjusting and accommodating policy to existing reality. Implicitly, it seems to be assumed that the poor will continue to be a socially disadvantaged and dispossessed group operating on the fringe of a "modern sector", regulated, ignored and maybe even persecuted by authority. While this situation is congruent with that experienced by many developing countries, it seems legitimate to question whether it is valid to assume that the situation will continue. If, furthermore, the situation is to continue, it seems valid to inquire whether any low-income housing policy, however well intentioned and well developed, can be anything but sheer fantasy in the face of such overwhelming social inequality.

The second view in the housing policy debate is that of the politicians. Their major concern is generally (if not always) to get elected and once elected to

maintain their seats. It would be uncharitable (and perhaps inaccurate) to suggest that they do not encompass the concerns of the "housers". The politician is, in fact, usually a houser with a special interest-- that of winning votes and retaining power. (The housers get their reward elsewhere.) Housing wins votes, therefore politicians like more housing rather than less housing, and more impressive housing rather than less impressive housing. (This tendency, in other circles, is known as the edifice complex.) Politicians, it seems therefore, tend to use additional criteria, a "visibility index" perhaps, in deciding on their housing objectives. If the tenants cannot afford the housing, subsidies can always be organized. If there is not enough money to subsidize everybody (which is usually the case), then they will settle for housing their closest supporters. Housing programs have no meaning to politicians unless they can be translated into votes. This perspective largely explains the propensity of politicians to want to have a personal and direct input into the allocation of housing units, while generally not being concerned with the economic aspect of housing. On the other hand, in the process of translating programs into votes, politicians usually develop a sense of the priorities of their constituents.

The third view is that of the development economists. Discussion of the concerns of this group and the emerging fourth group form the core of this section. The development economist is faced with the question of how much of the country's available resources to allocate to housing. There appears to be general agreement that housing is socially desirable and has a valid and pressing claim to available resources. But then, it is argued, so do education, health, and, most critically of all, so does the development of industry. Industrial development is seen as the sine qua non of economic growth, increased productivity and the eventual improvement in the standard of living of the society. The question therefore is one of priorities--"carts and horses". In organizing priorities, the development economist's main "theoretical crutch" is the concept of the "capital-output coefficient". The essentials of this theoretical construct can be stated as follows: different types of investment give rise to different degrees of expansion of national economic capacity and thus affect the rate at which the economy can grow. An investment of say \$1,000 in Sector X may permit GNP in each subsequent year to be say \$500 greater. The same investment in Sector Y may result in ~~additional annual~~ output of \$400. The capital-output coefficient for Sector X is

2 ($\$1,000 \div \500), while that for Sector Y is 2.5. The economy will grow faster if resources are invested in Sector X than if resources are invested in Sector Y. The decision rule that emerges therefore is that resources should be invested in Industry (Sector) X until all the available investment opportunities in this sector are exhausted or until "diminishing returns" increase the capital-output coefficient to 2.5. At this point it is rational to begin allocating resources to Sector Y [24, p. 206]. We may, for the purpose of this discussion, name housing sector "Y" and non-housing sector "X". Conventional economic wisdom has determined that the capital-output coefficient for "Y" is generally larger than that for "X". Industrial projects are supposed to have significantly lower capital-output coefficients than housing. Jan Tinbergen [26, p. 72] estimated that housing needed \$8.20 per dollar of output while a commercial enterprise needed only one dollar of additional investment to produce another dollar. Simply put, therefore, housing is unproductive. It is thus a rational allocation of societies' limited resources to concentrate investment on "non-housing", particularly on the industrial sectors. In practice this means that housing is allocated few or no resources because the resource (primarily financial in this context) pool is

so limited in most developing countries. When resources do get allocated to housing (under this line of reasoning), this is due generally to the fact that such allocations are critical to the realization of certain industrial projects. As Millikan [17, p. 24] somewhat sympathetically puts it, "The problem is not a choice between housing and other kinds of investment; the problem is how much housing you must have in order to make some other investment actually pay off." (This is the social overhead capital argument.) Additional reasons for allocations are simply that the economic planners are often forced to make concessionary allocations to stave off threatened social upheaval, and also they are forced to respond to politicians' demands for funds to maintain their (the politicians') credibility with the electorate.

The Economic planners, by and large therefore, have a forceful argument to buttress their resource allocation decisions. They are, they declare, simply allocating limited resources in a manner that will best serve the greater economic and social good of the greatest number of the present and future society. No less an economist than Paul Samuelson [23, p. 35] was moved to wonder whether or not this clamour for

increased allocation of resources to the housing sector and the perception of housing as being in need of special attention, was not the result of an "optical illusion" caused by the fact that poor housing conditions are highly visible. Other needs, e.g., nutrition and education, were no less critical because of their relative invisibility. Had not the whole housing issue got, so to speak, out of "perspective"? Is not housing, like most things, inadequate? To this and the previously mentioned issues we now turn our attention.

The fourth and final view of the role of housing in economic development is being expressed by a growing body of economists and other social scientists who are convinced that the importance of housing investment in the process of economic development has not been properly evaluated. If, they maintain, housing were properly valued, then the argument regarding the apparent disadvantage of investment in the housing sector would lose much of its validity. There are two main aspects to this critique of the traditional economic wisdom. The first (mentioned above) is the under-valuation of the output of housing. The second aspect of the critique concerns the over-valuation of the output of investment in industry--especially in

the context of developing economies. We will deal briefly with this second aspect and then concentrate our attention on the first.

Smith [24, p. 209] points out that the capital-output ratios used for a particular industry may not correspond to the "yield" of investment in that industry. This may be so because "..... the high-priority industry may not exist in anything approaching the scale contemplated by the national development plan. Individual investors may have no way to know that their small contributions would be matched by a sufficient number of other contributions so that the new enterprise will be viable in a world of intensely competitive trade. Hence, the market yield prior to development may misrepresent the real productivity of investment in industry." Smith also argues [24, pp. 208-9] that an urban labour force is an essential input into the industrializing process. This labour force must be housed, therefore housing may be regarded as an indirect input into the industrial sector. In this sense, the housing industry "sub-contracts" for urban industry. A portion of the value of industrial output is created by the housing sector. If, as a matter of economic accounting the true cost of housing as an input is charged to industry, its capital-output

coefficients would change considerably. Capital-output ratios in industry may simply appear favourable because too much of its output has been assumed to be net--that is, inadequate provision has been made for the production costs associated with that output.

Frankenhoff [8, pp. 10-11] criticizes the use of capital-output ratios to determine investment priorities in developing countries. His objection is based on the complementarity of factors and the unevenness and uncertainty that characterizes developing economies. Uneven development of infrastructure, for example, suggests that capital cannot be absorbed on a marginal basis. There is a characteristic lumpiness in social and economic institutions which tends to cause over- or under-estimates of capital coefficients and makes them inherently unstable and unreal. Measurement of capital coefficients assumes Marshal's "ceteris paribus" condition. In developing countries, however, it is precisely these non-capital factors that play a major role in determining the marginal productivity of capital. The "ceteris paribus" assumption ignores the presence of these non-capital factors.

We now turn to the question of the under-valuation of the output of housing. The conventional method of valuing the output of housing (the method used in

national accounts) is the rental value of tenanted dwellings and the imputed rent of house owners. From this point of view a house is looked upon as a production centre whose output is "housing services", the value of which is reflected in rent and imputed rent. Frankenhoff [8, p. 8] compares this point of view to that of measuring the output of a factory by its rent. The output of a housing unit includes hotel services, restaurant services, recreation, warehousing, and parking services. In developing economies, the house is often the centre of a small commercial enterprise. When we include, in addition, the very valuable investment services (as a hedge against inflation in a typical developing country), and social and psychological imponderables, it is not too difficult to conclude that rent, actual or imputed, cannot possibly reflect the value of output of housing services.

If we look at the capital side of the capital-output ratio, we also discern ambiguities. While the concept of housing investment is clear enough, there is considerable ambiguity and arbitrariness in the allocation of land and urbanization costs, and in the allocation of direct and indirect subsidies. These factors can considerably distort housing costs. A further

distortion arises from the absence, particularly in developing countries, of adequate statistics on which to base calculations of capital-output ratios. Without such statistics Frankenhoff [8, p. 10] maintains, calculation of coefficients is merely an academic exercise. Even countries such as the United States with a strong statistical tradition, have had difficulty with maintaining reliable construction statistics.

Frankenhoff criticizes the static view of housing simply as "stock" and the ignoring of the "production flow" involved in the housing industry. This static view largely evolves from the "deficit/need" framework generally adopted in evaluating housing investment requirements. When the dynamic, "flow", aspect of the housing industry is examined, the full impact of housing on the economy comes into focus. In the context of a developing country, housing is a major user of local materials and local skills and acts also as a significant training ground for unskilled labour. Far from competing with other industry for skills, housing trains labour for other industries and creates markets for the products of the building materials industries. No other industry has the capacity to accept large numbers of totally unskilled persons and over a period of time without any formal training process, transform them from labourers into

masons, carpenters, plumbers, fitters, electricians, etc. In fact, Frankenhoff maintains, housing creates more new skills and services in the act of production than it uses up. If this is contrasted with other industries that generally depend heavily on imported machinery and raw material, demand high skills and create few jobs, the attractiveness of housing as an industry begins to take on a different colouring. This is especially so in economies plagued by high unemployment and perennial balance of payments problems, as is the case with many developing countries. A further factor is that the growth of the population ensures a durable demand for the products of the housing industry.

Before turning to a slightly different perspective on the output of housing, it is worth noting that the experiences of Chile, Brazil and Mexico [4] show clearly that housing is a powerful stimulator of household savings--even among low-income families. The problem of allocating capital to housing must therefore be weighed against the potential for generating new financial resources in the form of increased household savings.

Burns et al [5] approach the problem from a slightly different angle. They have two basic assumptions.

These are:

- 1) That housing is an investment good capable of generating income and influencing productivity.
- 2) That raising real per capita income is the prime target of economic policy, and that housing is one of the tools of this policy.

Their supporting argument will not be reviewed in detail. Essentially, they base their position on housing's contribution to improving the productivity of labour and on Marx's point [16] regarding the complementarity of consumption and production and the contribution that consumption makes to the productivity of capital. Burns [5] set up elaborate studies to attempt to confirm his thesis. The results of the study were not conclusive. They did show some degree of increased productivity when housing conditions were improved. It was not clear, however, how long this improvement in productivity would last. After a year, it seemed that the productivity gains previously detected, began to recede. Similar attempts to measure the beneficial effect of improved housing on health and education did show some positive results, but it was impossible to be definitive about the causal factors.

Before we proceed to deal specifically with Jamaica, let us try to summarize the varying points of view on the question of resource allocation. Table 6.01 indicates a ranking (admittedly crude) of the various groups discussed and the importance which they attach to different factors in their decision making. The "bureaucratic housers" (1a) rank environmental issues, marginal social change, and micro- and macro-marginal-economic issues as their main concerns. The "self-helpers" (1b) stress marginal social and micro- and macro-marginal-economic issues operating in the "informal" sector. The politicians' (2) chief interests are, naturally, political, though they are interested in environmental issues as well and in marginal social change. The development economists' (3) are only persuaded by their capital-output ratios. The emerging group (4) has a broad perspective that encompasses structural economic change as well as other economic and marginal social and environmental factors. All the above groups avoid the critical issues of structural social and political change and even the emerging group (4) does not stress as critical, the issue of structural economic change. (Group 5 is the author's, admittedly value-laden, criteria. All the groups above display implicit or explicit values. This will be discussed in Section 7.0.)

As matters stand, we cannot specify an unambiguous set of criteria to guide the resource allocation decision for the housing sector. We have shown that the most established "rational" economic criteria are not as rational as the conventional economic wisdom would have us believe. We therefore are in the unenviable position of having to develop new decision criteria. In doing this we have to broaden as far as possible traditional methods of economic evaluation to encompass issues, specifically, issues of employment, income distribution, use of local resources and other social and environmental factors. The decision to allocate (or not) has to be made in the light of the circumstances of a particular country. The automatic assumption of the superiority of investment in industry must be questioned. It may be that, in particular circumstances, housing investment must be postponed. This must be done, however, only after a thorough evaluation of the factors discussed above. Let us now move on to briefly discuss Jamaica's particular circumstances.

Jamaica. Virtually all the characteristics of developing countries so far mentioned, are relevant to the Jamaican context. It is not within the scope of this thesis to discuss the Jamaican economy in detail,

however. (See Jefferson [14] for an analysis of the main characteristics of the Jamaican economy.) We list only the outstanding features that seem relevant to the housing investment allocation problem. These are: 1) high and persistent unemployment; 2) low levels of living and housing conditions; 3) low incomes; 4) low levels of skill; 5) rapid urbanization; 6) low levels of savings; 7) low levels of capital formation; 8) inflation; 9) perennial balance of payment problems; 10) heavy dependency on the terms of international trade and prices for a few primary commodities (mainly bauxite and sugar); 11) duality in the economic structure; 12) duality in the structure of labour; 13) smallness in absolute size; and 14) rapid population growth.

In light of the previous discussion, it seems clear that the problem of housing cannot be usefully dealt with outside the framework of overall development planning. Demas [7] points out that small economies like Jamaica can never be self-sufficient. They are forced to import in order to satisfy many of their needs and thus, are forced to trade. The development of an export manufacturing sector is critical to their long-term survival. The potential limits of development propelled by agriculture and raw materials export

have almost been reached. Five major problems, however, stand in the way of the development of an export manufacturing sector. These are the extreme competitiveness of international manufacturing trade, absence or paucity of local raw materials, low levels of technology, entrepreneurship and skill. These problems cannot be solved in the short run. Even if they could be, the problem of absorption of large quantities of unskilled labour would remain unsolved. This is so because modern manufacturing industry is not a heavy user of unskilled labour. It is in this context that Demas [7, p. 133] suggests that it will be necessary to develop the construction industry. The traditional pattern of simply encouraging import-substituting industries has had little or no impact on the unemployment problem and has, in fact, aggravated the problem of duality in the economy.

In the final section of this study we discuss some of the issues concerned with the integration of housing into the development framework. We have, in this section, tried to show that, far from approaching the resource allocation problem from the point of view of the competition between manufacturing industry and housing, the allocation to housing may be critical for coming to grips with endemic problems in the Jamaican

economy. We have not, of course, tried to show that in all cases housing investment is superior to that in other manufacturing industry. We have, however, attempted to indicate that the automatic rejection of housing investments as being unproductive is unwarranted and, in fact, "uneconomic".

TABLE 6.01

The Resource Allocation Criteria Used
by Different Groups of Decision Makers*

GROUP	Environ- mental	Social		Political	Economic			
		Marginal	Structural		Micro- Marginal	Macro- Marginal	Macro- Structural	
1 Housers								
a) Bureaucratic	3	2	1	0	2	2	0	
b) Self-Help	1	3	1	0	3	3	0	
2 Politicians	2	2	1	3	1	0	0	
3 Development Economists	1	1	0	0	2	3	0	
4 Emerging Group	2	3	1	0	3	3	2	
5 Author' Viewpoint	2	1	3	3	2	3	3	

* Ranked: 0 = Unimportant, 1 = Of Minor Importance, 2 = Quite Important, 3 = Critical.

7.0 Guidelines for the Formulation of Housing Policy
1975-1985

In previous sections of this study we sought primarily to accomplish the following:

- 1) To gain an understanding of the patterns of distribution and change among the population and to predict future housing need arising from the growth of the population.
- 2) To lay bare the structure of the housing stock and the changes that have been taking place within the stock--with the intent of evaluating the need and potential for upgrading.
- 3) To estimate the capital requirements for a number of alternative housing programs and compare these requirements with the likely availability of capital--with a view to evaluating how much housing and what type of housing programs Jamaica can afford.
- 4) To outline the structure of the mortgage market and recent institutional changes designed to increase and stabilize the flow of financial resources to housing.
- 5) To justify increases in the allocation of resources to the housing sector.

In pursuing the above we have had to make many heroic assumptions and to work with data which, at best, were suspect. It was thus not possible to develop precise estimates. We sought to ensure that the data used were the best available and to make allowances for the fact that significant changes in the data could seriously alter our policy prescriptions. In this section we attempt to bring together the major issues that have been raised in this study and to try to chart a course

of action for future housing policy. In doing so we first confront an issue which has been implicit in our discussion until now. That issue is the value system we bring to bear on the policy formulation process. We recognize that the position which we take here may not be congenial to many. All policy-makers have their biases and predispositions that make them respond differently to any given situation. We believe that it is better to make these biases explicit--if only to facilitate disagreement.

Policy formulation in a developing country must, of necessity, differ considerably from the process pursued in a developed country. The reasons for this are due primarily to the fact that most developing countries have recently emerged from colonial rule and are fresh on the road to defining their national objectives, and forming and reforming their social and economic organizations and institutions. Typically, the people in the countries are poor, illiterate, lacking in skills and entrepreneurship. The function of the government is often that of the major entrepreneur in the society. These factors must be borne in mind in approaching the policy formulation process in a developing country. Shortages and deficiencies are present and prevalent in every sector at almost every level of organization.

Values and Policy. We have, more or less, taken it for granted that the Jamaican society, through its elected representatives and its institutions, wishes to confront the problem of providing an "acceptable" living environment for "all" households. The word "acceptable" implies a standard that reasonable people in the society will agree on through a process of extended negotiation on a society-wide basis. In stating the above we do not mean to imply that a "solution" to the housing problem is discernible. Quite the opposite is the case. We are explicitly recognizing that Jamaica, like almost every other country (and specifically, like every other developing country) will have difficulty in housing its population for the foreseeable future. It is not our purpose to choose the standard (in fact a moving standard). Our purpose is simply to identify those factors that must be confronted in the "negotiation" process, i.e., to identify the parameters of the process.

Clearly, resources are limited and this study has tried to explore specifically the limitations of financial resources. The problem here is to find an "acceptable" solution within available financial resources and to try to increase the availability of financial resources to the housing sector so as to ~~widen~~ the range of potential solutions. We are of the opinion that we cannot simply take for granted the existing social order and

especially the existing distribution of wealth and power. These existing structures must be confronted and changed if they hinder the attainment of the objective of a more equitable distribution of societies' wealth and the improvement of societies' standard of living. This is what we mean (Section 6.0) by structural change in the society. This position is in contrast with those who advocate marginal change which seeks to adjust and accommodate policy to the existing situation. We do not, of course, believe (or expect) that structural change can be accomplished without marginal adjustments. Clearly, also, it would be an exercise in delusion to believe that structural change is a simple task which can be accomplished by proclamations (or theses for that matter). It cannot be accomplished overnight or by ignoring existing reality. We see existing reality as a factor that must be understood so that it might be transformed and not as a factor to which policy must accommodate itself. We have, to use a metaphor, "to ride our bicycle while building it". Only we must, at the same time, look into the possibility of "converting to a motorcycle".

What, therefore, are the policy implications which flow from the above? Let us take, for instance, the question of self-help housing. "Self-helpers" (see Section 6.0) view their position as a more "realistic" way of

approaching the housing question for the "informal sector". Our study reveals (Section 5.0) that the "self-helpers" do have a case. The society cannot afford to meet the needs of new households without resort to some self-help construction or a radical reduction in conventional construction costs. (It seems that redistribution of income, though an important consideration, would not significantly change the above conclusions.) Among the questions that arise from our chosen perspective are a) why does the informal sector exist? b) why are building costs so high? c) why are incomes so low? The answers to these questions are to be found in the organizational structure of the society. It thus makes no sense to seek to adjust housing policy to deal with the so-called "realities and dynamics" of the informal sector when, in fact, the root causes of existence of this sector are buried in the inequities of the society. It is also naive to believe that we can deal with the question on a "partial" basis. The poor will simply not accept self-help while other sectors of the society are living at North American standards of luxury. It is our view that, if self-help is inevitable, then the ethos of self-help will have to be spread throughout the society. There is no other way of persuading the poor, who make up the majority of the society, that they will have to accept low standards of living until such time as the

society is productive enough to be able to afford higher standards. Furthermore, such persuasion can only be accomplished through the political process. This is why we place tremendous stress on political factors and upon the process of structural social and economic change.

The issues raised above are not, in our view, confronted by the groups discussed in Section 6.0. This is not to imply total neglect on their part. Their positions are probably coloured by the certain knowledge that structural change in social and economic organization operating through the political process is not an easy task to accomplish--or even to contemplate. Such change also raises ideological issues that may not be congenial and that are often outside their competence. The net result of this attitude is aptly demonstrated by the Jamaican Sites and Services project [11]. Here World Bank officials sought to avoid subsidies to this scheme for aiding low-income households. The logic of the no-subsidy policy was that the society could not afford large-scale subsidies. In order, therefore, to make the scheme feasible for very low-income households, it was decided that the "better-off poor" should subsidize the "less-well-off poor". A system of redistribution of income from the poor to the poor was thus pursued. Surely this does not make sense.

In formulating housing policy, the resources of the entire society must be considered. Let us now turn to some other issues.

How Much Housing Is Feasible? It is outside the scope of this study to deal in detail with restrictions on housing production that result from bottlenecks in the availability of materials or in the productivity of the construction sector. It is worth mentioning, however, that, even at the present output level (approximately 3,000 to 4,000 units per annum), shortages of building materials (lumber, steel, cement, etc.) recur from year to year. A significantly larger housing program will probably make matters much worse. Shortages are partly due to poor planning on the part of producers and merchants. However, fluctuations in the demand for building materials make planning difficult for the building supply industry. This problem may thus be considerably alleviated if housing policy is directed towards considering the needs of the building materials industry simultaneously with housing policy formulation. In fact, the necessity of integrating the housing industry and the building materials industry is a major conclusion of Section 6.0. In integrating the above we will not only assure (hopefully, ~~less~~ erratic production, we will make the integration of the housing

sector into the economic development process a somewhat less problematic exercise.

The questions of prime importance in this study have been the availability of financial resources for housing and the ability of households to afford conventional housing. Let us deal first with affordability. We have seen (in Section 4.0) that conventional housing is beyond the resources of 70 to 80 percent of households, who cannot afford to purchase without substantial capital subsidies. (The accuracy of the income data is problematic, however. No one has a good fix on the actual income distribution and this must be borne in mind.) Restricting the demand of households whose incomes exceed J\$7,500 per annum (less than 10 percent of households) to housing costing approximately J\$16,000 (see Tables 4.14 to 4.20) would result in a potential saving of only J\$160 million dollars over the ten-year period. If this "excess demand" were taxed away and used to subsidize the lower income groups, there would be no appreciable change in the purchasing power of the low-income groups. Conventional housing at conventional prices is simply not feasible for 70 to 80 percent of households. This is a fundamental fact that cannot be circumvented even if all the resources were available for house construction. Households are too

poor and conventional housing is too expensive.

Alleviating the poverty involves a long-term process of structural transformation of the economy. Detailed discussion of this is beyond the scope of this study. Let us, therefore, discuss the issue of reducing construction costs.

Reduction of construction costs involves transforming the structure of the building industry. Three factors are critical. First, the oligopolistic practices of the building materials suppliers and merchants have to be terminated. Second, the tremendous escalation in construction wages (see Appendix A8.0) must be stopped. Third, the productivity of labour must be increased. Fourth, the escalation in land prices [18] must be controlled. Fifth, the construction practices of government must be changed. The real question, of course, is "How to accomplish the above?"

The first cannot be accomplished without restricting and policing the activities of merchants and suppliers or by entering into direct competition with them.

Either course of action is fraught with difficulty.

(A recent unpublished paper by Professor Lisa Peattie, of the Massachusetts Institute of Technology [20], states that the informal sector can obtain building

materials at prices lower than the formal sectors. This is, almost certainly, not the case. In Jamaica, experience shows that contractors can purchase materials at prices well below market prices. The savings are often spectacular on bulk purchases.) Policing building merchants is a difficult undertaking and the establishment of government companies in the building materials supply sector will be plagued by staffing difficulties and by all the other retrograde bureaucratic practices that characterize government operations. Dealing with this problem is inescapable, however.

Reducing wage escalation involves placing restraints on the labour unions. This is not feasible because the present situation of rapid increases in the cost of living and because competing unions are allied to different political parties. The unions represent the minority of the labour force, and, in their competition for the loyalty of their members, seek wage settlements that further contribute to inflation and to the dualism that exists in the labour market (see Jefferson [14]). The unions renegotiate their contracts every two years. The last wage increase (1975) ranged between 77½ percent to 85 percent. These increases bore no relationship whatever to

productivity, and had the effect of increasing construction costs by an estimated 20 percent.

The training of building labour (and management) with a view to increasing productivity is essential. No data are available, but it is believed that Jamaican productivity suffers by comparison with that of many other Latin American countries. Combined with relatively high wages, low productivity has had a considerable adverse effect on construction costs. It seems clear that this situation can only be improved by integrating construction training into the educational development system.

The escalation of land prices results partly from speculation and partly from the fact that the demand for land, as a hedge against inflation, is very heavy. Only massive taxation or prior purchase and control of developable land by the government can deal with this problem.

The question of government contracting practices is no less problematic than the others. Contracting is a major area of political patronage and politicians have become dependent on government contracting to finance their constituencies, and sometimes themselves

and their friends as well. Appendix A9.0 indicates that government's construction costs (per square foot) in some cases exceeded and often equalled the selling price (per square foot) of private dwellers. Clearly, the government's contracting procedure must be changed. This cannot be done, however, unless alternative means of financing the political process can be found and politicians and bureaucrats begin to take their managerial responsibilities more seriously.

The net result of this cursory examination of the housing sector is the conclusion that, without major structural change in the operations of the government, the merchants, the unions and the contractors, nothing can be done about reducing construction costs. There is no conceivable marginal change that will unlock the rigidities that plague the house construction industry. Furthermore, these rigidities seriously affect self-help construction.

Under the present contracting system, the major parts of a self-help contract, i.e., infrastructure, basic lot servicing and core, are constructed using conventional contracting practices. All the problems mentioned above in regard to conventional construction therefore apply to this phase of self-help. The rest of the self-help contracting process consists of

materials loans to the purchasers, who then make their own contracting arrangements. The self-help builders are thus at the mercy of builders' merchants and suppliers. They (the self-help builders) buy in small quantities and thus pay higher prices than large contractors who can purchase in bulk. (The fact that under most situations these cost savings by large contractors are not passed on to the purchaser, due mainly to oligopolistic practices, does not negate this point. It only reinforces the case for structural changes in the contracting system.) The only way that the self-help builder can get materials cheaply is by purchasing (or filching) second-hand material. We do not believe that this system can be relied upon to reduce material costs for the large-scale self-help construction undertaking that we envisage as being necessary for dealing with the housing problem.

The fiction abounds that self-help construction employs larger quantities of labour than the conventional approach. Although we have no data to support our argument, this is certainly not the case for the most heavily capitalized initial phases of construction (of infrastructure, etc.) that are usually conventionally contracted. (The income redistribution effect that may have been expected to benefit low-income households probably does not occur in any

significant way.) A further fiction abounds that unemployed labour can be easily mobilized for self-help projects. This is certainly not the case. The organization of large numbers of people is an extremely difficult task and is heavily dependent on the availability of managerial skills. These skills are in severely short supply. We have not yet begun (even vaguely) to come to grips with the organization and scheduling of self-help construction activity. If self-help is to be raised above the level of "make-work" activity, then a great deal of effort will have to be put into organization and planning. With the above perspective in mind, let us return to the question of how much housing is feasible.

It seems unlikely that Jamaica can afford to increase its gross fixed capital formation in residential construction to more than 5 percent of GDP. This level of investment involves almost a doubling of the present level (3 percent since 1971). This would bring housing investment (as a percentage of GDP) up to the level of most European countries and greater than that of the U.S. [12]. The 5 percent of GDP level of gross capital formation in residential construction would involve gross investment ~~of between J\$1,000 million~~ and J\$1,500 million over the next 10 years (see Table

5.02). Only a program of subsidized self-help for income groups below J\$2,500 (70 to 80 percent of households) can possibly be supported (see Table 4.20, #5). It is essential to pay keen attention also to upgrading the existing housing stock since it will play an important role in housing present and future households for some time to come. The adoption of such a program will involve tremendous mobilization of savings and manpower. The National Housing Trust (NHT) seems to be the best institutional structure for accomplishing the task of mobilizing savings. The mobilization and organization of manpower has not yet begun. Even more fundamentally, the processes of transforming the economy and integrating housing policy into a policy for national economic development, and the coming to grips with chronic unemployment and low productivity, must be set in motion. The above cannot be accomplished without structural social and economic change. Outside of this framework, it is idle to discuss housing policy formulation. Existing policies are an insult to the collective intelligence of the poor, i.e., to approximately 80 percent of Jamaican households. The recently formed National Housing Corporation, in its infinite wisdom, has confined its activities to housing costing in excess of J\$15,000. A more irrelevant and

misguided policy is difficult to imagine.

Tasks for the Future. In closing, let us list (without ranking) the issues which we consider critical to improving policy formulation in the housing sector.

- 1) A detailed survey of income and household characteristics.
- 2) A survey of dwellings and dwelling conditions.
- 3) The collection of accurate construction statistics on an island-wide basis.
- 4) The collection of mortgage statistics by parish, by lending institution, by type, size and cost of dwelling.
- 5) A study of the structure and functioning of the various housing submarkets.
- 6) A study of construction costs including the performance of the building materials supply industry and the productivity of labour.
- 7) A reform of government contracting procedure so as to bring government construction cost at least into line with that of the more able developers.
- 8) A study of the employment characteristics of different contracting methods so as to gauge the potential for self-help construction.
- 9) A study of methods of adapting self-help techniques to conventional construction.
- 10) The integration of training programs for construction labour and management into the educational system--exploring the possibilities of "on the job" training.
- 11) A study of the needs of the building materials industry.

- 12) Beginning a nationwide dialogue on the question of housing needs and the capacity of the nation to house, feed, clothe, heal and educate itself.

This list is by no means exhaustive and information will have to be updated continuously. But then, Jamaica will not be "housed in a day". This is but a beginning.

Al.0 Adjustment of 1970 Census Population Figures in
Order to Estimate Population in Private Households

Table 2.04 was adjusted in order to arrive at the estimate of the population in private households shown in Table 2.10. The first step in the adjustment involved exclusion of 21,594 persons who were classified in the census data as being in non-private households, and 106 persons for whom the data were incomplete. These persons were assumed to all be urban. The next step in the adjustment was to add to the figures obtained after completion of Step 1, 34,800 persons for whom there were incomplete data in the 1970 census. These 34,800 persons were distributed according to the urban/rural distribution of population shown in Table 2.04. Tables Al.01 to Al.03 show the data relevant to the adjustment process.

TABLE A1.01

Distribution of Population by Region, 1970

NO. REGION	Population Distribution, 1970			
	Total	Private Households	Non-Private Households*	Incomplete Data
1a Kgn./St. Andrew	547,800	512,600	12,700	22,500
b St. Catherine	182,900	179,000	1,400	2,500
c (1a + 1b)	730,700	691,600	14,100	25,000
2 Rural Parishes	1,117,800	1,100,400	7,600	9,800
3 Jamaica (1c + 2)	1,848,500	1,792,000	21,700	34,800

* Includes 106 persons for whom there were incomplete data (age) in 1970.

Source: Computed from Population Census, 1970, Bulletin 1, Department of Statistics, Jamaica.

TABLE A1.02

Adjusted Distribution of Population by Region, 1970 *
 (Step 1 Excludes Non-Private Households from Table A1.01)

NO. REGION		Total	Urban	Rural	Total	Urban	Rural
1a	Kgn./St. Andrew	512,600	462,940	49,660	100.0	90.3	9.7
b	St. Catherine	179,000	61,372	117,268	100.0	34.3	65.7
c	(1a + 1b)	691,600	524,312	167,288	100.0	75.8	24.2
2	Rural Parishes	1,100,400	205,045	895,355	100.0	18.6	81.4
3	Jamaica (1c + 2)	1,792,000	729,357	1,062,643	100.0	40.7	59.3

* Computed from Tables 2.04 and A1.01.

TABLE A1.03

Distribution of Persons For Whom There Were Incomplete Data, 1970 *

NO. REGION		Total	Urban	Rural	Total	Urban	Rural
1a	Kgn./St. Andrew	22,500	20,363	2,137	100.0	90.5	9.5
b	St. Catherine	2,500	870	1,630	100.0	34.8	65.2
c	(1a + 1b)	25,000	21,233	3,767	100.0	84.9	15.1
2	Rural Parishes	9,800	1,882	7,818	100.0	19.2	80.8
3	Jamaica (1c + 2)	34,800	23,115	11,685	100.0	66.4	33.6

* Computed from Tables 2.04 and A1.01.

A2.0 1970 Census Definitions and
Instructions to Interviewers

This appendix furnishes information regarding the definitions used in the 1970 census, along with a list of places categorized as urban, a list of household types categorized as non-private and instructions given to census interviewers on how to interpret census questions.

A2.1 Definitions of Specified Technical Terms

Household: A Household is defined to comprise a persons who lives alone or a group of persons who live together and who may or may not eat together.

Dwelling: A Dwelling comprises all the living quarters of a household. Thus a dwelling has one and only one household.

Private Dwelling: This represents the living quarters of a private household. A private household may comprise among other persons one or more boarders. If, however, the number of paying boarders or guests exceeds five persons the dwelling is not classified as a private dwelling but a non-private dwelling..

Non-Private Dwelling: This represents the living quarters of a non-private household. Non-private dwellings are found most frequently in institutions such as homes for the aged, orphanages, prisons and reformatories, sanatoria, religious cloisters, military barracks, convents, monasteries, as well as school dormitories, work camps, hotels and rooming houses (defined for purposes of the census, as dwellings in which there are six or more paying boarders or lodgers).

Usual Residence: The Dwelling in which a persons lives or spends the greater part of the year. Exceptions are made with respect to persons in Public General Hospitals, Maternity Hospitals, Hotels or Guest Houses or Nursing Homes. In these instances the usual residence is in the dwelling where the person normally lives.

A2.2 List of Non-Private Dwellings or Institutions

Non-Private Dwellings Included:

Hospitals and Sanatoria for Mental Diseases, Homes and Training Schools for Mental Defectives, Orthopaedic Hospitals, Resident Schools and Homes for the Crippled. Tuberculosis Sanatoria, Lepers' Homes, Cancer Hospitals and other Hospitals for Chronic Ailments, Homes for Incurables, Public General Hospitals, Maternity Hospitals and Nursing Homes.

Almshouses, Poor Houses, Soldiers' and Sailors' Homes, Fraternal and Religious Homes for the Aged, Commercial Boarding Houses for the Aged.

Orphan Asylums, Children's Homes, Boarding Schools.

Convents and Monasteries.

Residential Schools and Homes for the Blind and Deaf, University and College Residences, Hostels and Residences for the Trainee and/or Graduate Teachers, Nurses and Ministers of Religion.

Military Camps, Police Training Schools and Police Barracks.

Penitentiaries, Prisons, Reformatories, Jails, Workhouses, Prison Farms or Camps, Training or Industrial Schools for Delinquents.

Persons in Parks and Open Spaces; Penny Shelters and lodgings for transients.

A2.3 Housing (Instructions to Interviewers)

The information in this section relates to the building or part of the building used for living purposes.

The information is to be recorded on the questionnaire for the Head of the Household only, and the required information must be given with respect to the whole household; no information on this topic is to be entered on the questionnaires for other members of the household.

Because the information is being sought from each household, the means that in some cases there will be different sets of replies with respect to the same building. The relevant instructions for non-private dwellings are given in Part 6.

Indicate from your observation where possible, which of the following types of dwelling is occupied by the household, according to the following definitions:

Question 36 Type of Dwelling

Separate House: (abbreviated Sep. House on Questionnaire). This will be the ~~most common~~ type of dwelling and will relate when the household occupies all or part of a dwelling house. A dwelling house is the type

usually constructed for occupation by a single household, and which has open space on all four sides. Include here however the case of a "duplex" house (usually connected to another house by some common roof or wall).

Flat/Apartment: A flat or apartment is a private dwelling unit which is part of a larger building consisting entirely or mainly of other flats and/or apartments. In the usual 'block or flats' or apartment building arrangement for example, there may be self-contained separate and private dwelling units for a number of different independent households. In a few cases there may be a self-contained private dwelling which is part of a larger building consisting mainly of non-dwelling areas. If however the living quarters in any of the above cases is a building apart from the other buildings in the complex, then it should be classified as a Separate House.

Barracks: Barracks, like flats, are private dwellings in a building which contains a number of such dwelling units. The difference between a barrack and a flat is economic and social rather than basically structural. Thus a barrack occurs mainly on agricultural estates for housing labourers; it is usually occupied rent-free and the building is, in most cases, of relatively poor

quality. Despite the fact, therefore, that like a flat, a barrack is one of a number of dwelling units in a single building, there is little danger of uncertainty on the part of respondents or enumerators on whether a building should be considered as containing barracks or flats.

Out-Room: An Out-room is a room on the same premises but separate from the main building, and used as living quarters by a household separate from the one(s) occupying the main building. Such a separate but dependent structure could have more than one room, but would not have all the facilities (bath, toilet, kitchen) for independent living. Occupiers of the Out-room will then be dependent on the main building for these facilities.

In cases where an outroom is made into a self-contained living unit by adding facilities such as the above, it should be classified as a separate private house if occupied by a separate household.

A structure would be classified as an Out-room only if it is occupied by a household separate from the one(s) occupying the main building.

Part of a Commercial Building: The term 'commercial' is used here to include all non-residential buildings. This includes, therefore, all cases where a household occupies part of a building which is used mainly as a business place or other non-living accommodation unit.

Other Private Dwellings: This groups is for any type of private dwelling which does not fit in with any of those mentioned above, including boats, tents, trailers etc.

Group Dwelling: This applies in the case of an individual designated as "Head" in a group dwelling. Details on this are given at Part 6 below.

No Fixed Abode: This applies in the case of the "floating" population and is dealt with at Part 6.

Question 37 Type of Tenure

This question refers to the type of tenure under which the dwelling is occupied.

Owned: This applies if ~~the dwelling is~~ owned by a member/s of the household. If the dwelling is

occupied by the family or close relatives of the owner but the owner, even if he sometimes sleeps there, is not a member of the household according to the census definition (for example where the wife and children of the owner live in the dwelling, but the owner perhaps because of his work, or for other reasons, does not normally sleep in the dwelling and is then not a member of the household concerned), the dwelling should not be classified as Owned but as Rent Free.

Leased: This relates to those cases where the dwelling is rented in accordance with a signed agreement for a stipulated period between the owner and the occupier. In most cases, this signed agreement of lease will stipulate the rental payable, and the length of time for which the building is rented.

Rented: This is used here to relate to those cases, which are the most usual, where the occupier pays a rental to the owner for the dwelling, but no signed agreement is involved.

Rent Free: This relates to those cases where the occupiers are not required to pay rental. It implies, also, that the occupiers are occupying the dwelling with the consent of the owner. Examples of the above

are where the Government, a business (e.g. a Sugar Estate, or Bank) or some other institution (e.g. a Church, a School) may provide free quarters for some or all of its employees.

Squatted: This relates to those cases where the occupiers are not paying a rent, but, are occupying the dwelling without the consent of the owner. Note that we are dealing with the type of tenure of the dwelling, not the land.

Other: Include here any arrangements which do not fit into one of the preceding categories.

Question 38 Water Supply

You are required here to mark the main source of domestic water supply for the household. This means that in those cases where the household obtains water from more than one source you must determine from the respondent which is the main source, and score this one only on the questionnaire.

In general, give precedence to the source for cooking and drinking over the source for bathing, washing and other uses. Where water from different sources is

used for the same purpose, find out from the respondent which is the main source, that is the one from which they get most water for this use, and record this source only.

Public in this question refers to a water supply established and maintained by the government or government regulated agency.

Pub. Piped into Dwel.: this is the abbreviation for Public Water Supply Piped into the Dwelling.

Pub. Piped into Yd.: this refers to cases when the household's water is supplied from a pipe in the yard of the premises and which originated from a public source.

Priv. Piped into Dwel.: this applies when the main source of domestic water supply is not a public one and is piped into the dwelling, e.g. piped in from a private catchment or well.

Priv. Catchm. Not Piped: this applies if the water supply is from a non-public catchment or well and is not piped into the dwelling.

Pub. Standpipe: this relates to a Public Standpipe,

usually located along roads or other public thoroughfares.

Pub. Tank: this is applicable if the main source of water for domestic use is supplied from a public tank, dam, reservoir or well and is not piped into the premises in those cases the water is probably obtained by going to the tank.

Other: include here all other main sources of water supply, e.g. river, pond, spring, etc.

Question 39 Toilet Facilities

This question is divided into two parts; 39(a) deals with whether or not the household has toilet facilities and if so whether they have to share with other households. The second part 39(b) indicates what type of toilet facility is available.

Question 39a Availability of Facilities

What is required is whether the household has any toilet facilities which they are entitled to use because they occupy the dwelling.

If the household has no facilities record None.

If they have facilities then enquire whether they have to be shared with any other household (Shared or Not Shared). Entitlement to use the facilities must be related to their occupancy of the dwelling - it must not, for example, be a public toilet.

-Question 39b Type of Facilities

Ask the question this way: "What type of toilet facilities does this household have?"

If the household has available to it, more than one kind of toilet facility, indicate the best kind. In this context, water closets are considered to be better than pit latrines. Mark the kind of facility available to the household whether or not it is shared with another household(s).

Pit: Mark this if the toilet facility is a pit latrine.

W.C. Linked to Sewer: Mark this if the toilet facility is a flush toilet or water closet.

W.C. Not Linked to Sewer: Make no marks here.

Other: Include here toilet facilities other than Pit or W.C. (Water Closet).

Question 40 Year When Dwelling Built

What is required here is the year in which the dwelling was complete. In some cases the building in which the dwelling is situated may not have been completed in an absolute sense in that certain aspects of the construction may still remain to be done. For example the walls may not have been plastered, the building may not have been painted, and in some cases all windows and doors may not have been fitted. In such cases, what would be required would be the year in which the dwelling was first occupied.

Another problem in some cases will be that parts of the same building or even the same dwelling would have been built at different times.

Different dwelling units of a multi-dwelling building which have been built at different times do not create any difficulty because the information is being sought with respect to each dwelling. For example, if a dwelling unit was first constructed in 1958, and ten years after another dwelling unit was added on (perhaps as a separate floor), then for the two dwellings in

this building, one would be shown as built in 1958 and the other in 1968. If the dwelling was completed in 1968, 1969 or 1970, the occupier is very likely to know since it is so recently completed. For earlier years only an approximate completion date is necessary since a number of years are grouped together for each answer.

Where the respondent does not know the year of completion exactly, it is preferable that you should seek to obtain sufficient information to indicate one of the groups indicated than record 'Not Stated'. (N/S).

A2.4 List of Places Classified as Urban Jamaica - 1970

Kingston	All of Parish
St. Andrew	Areas as indicated by relevant boundaries described in Appendix VI
St. Thomas	Morant Bay, Port Morant, Bath, Yallahs
Portland	Port Antonio, Buff Bay
St. Mary	Port Maria, Annotto Bay, Oracabessa, Highgate
St. Ann	St. Anns Bay, Browns Town, Claremont, Ocho Rios, Discovery Bay
Trelawny	Falmouth, Duncans, Clarks Town
St. James	Montego Bay
Hanover	Lucea
Westmoreland	Sav-la-mar, Frome, Grange Hill
St. Elizabeth	Black River, Santa Cruz, BalACLava
Manchester	Mandeville, Christiana, Porus, Spaldings
Clarendon	May Pen, Chapelton, Frankfield, Spaldings, Lionel Town
St. Catherine	Spanish Town, Linstead, Old Harbour Bay, Bog Walk, Independence City/Port Henderson.

A3.0 Alternative Population Projections by
Professor George Roberts

This appendix contains three projections by Professor George Roberts of the University of the West Indies, Jamaica. Different assumptions are used in each projection. The source of this section is: Recent Population Movements in Jamaica, C.I.C.R.E.D. Series, 1974, World Population Year.

Projection I

This Projection emphasizes that, with the achievement of a level of mortality close to that of European populations, the continuance of the fertility of 1970 would result in massive accretions to the island's population. As will be seen from Table 7.2, during the 20 years from 1970 to 1990 the population would nearly double itself, increasing from 1.85 million to 3.56 million. While death rates of the order of 7 prevail, crude birth rates would rise appreciably, amounting to as much as 41 per 1,000 by 1985-90. This movement in the birth rate stresses that its level in the late 1960s and early 1970s appreciably understates the current level of fertility. In other words, the filling out of the inroads made in the age structure by earlier emigration presages greatly augmented numbers of births. In fact by the end of the period these are running at an annual level of 136,000 or about twice that at the opening of the period. Very substantial increases within certain age ranges are indicated as will be seen from Table 7.3. Between 1970 and 1990, the population under age 5 more than doubles, rising from 296,000 to 651,000. The population in the accepted school age range (5-14) undergoes an increase of 1.8-fold, from 559,000 to 981,000. The population of working and childbearing age more than doubles, expanding from

644,000 to 1,462,000 during the 20 years after 1970. The filling out of the age interval 15-44 is the outstanding change in age composition revealed by this Projection. This is achieved by 1980, after which the structure tends to stabilize. It is convenient to examine movements above age 15 more thoroughly in the discussion on Projection II, as the pattern of the age structure for adults is the same in both Projections.

Entered in Table 7.4 are the age and sex distributions of the projected population for 1975, 1985 and 1990, as well as those of the initial census population of 1970.

Projection II

The outstanding feature here is the consequence of the appreciable reductions in fertility introduced. As these are combined with an assumption of no emigration, their impact moves slowly through the age groups, so that by 1990 in fact only the population under age 20 will be affected. The expansion of the numbers at higher ages is virtually the same as that of Projection I. Nevertheless the falls in fertility do have some influence on overall growth which must be noted. Thus the rise to 2.71 million by 1990 is equivalent to 46 percent as compared with a two-fold expansion when no reductions in this component are postulated, as is clear from Table 7.2. Falls in fertility imply a substantial lowering of the crude birth rate, which is brought down to 20 by 1990. Even so the resulting rate of natural increase is as high as 1.3 percent.

As will be seen from Table 7.5, the principal effect of lowered fertility appears in the ages under 5. This age group reaches a maximum of 308,000 in 1975 and then declines, so that by 1990 children within this age range (257,000) represent a fall of 17 percent from the level of 15 years earlier. A similar position emerges in the case of the population of school age,

which attains a maximum of 602,000 by 1975 and then drops to 565,000 by 1990. The latter is only slightly above the corresponding value for 1970 (559,000). But substantial increases appear in the case of the population of working and childbearing age (15-44). For both sexes the numbers within this age group more than double, moving up from 644,000 to 1,422,000. In terms of percentage distribution, the main characteristic is the fall in the proportion at younger ages. For children under 5 this is lowered from 16 percent to less than 10 percent, while for the school age group the proportion moves down from 30 percent to 20 percent. By contrast, the population of working and childbearing age comes to constitute a much larger proportion of the total by 1990, the increases being from 35 percent to 52 percent. The summary position is that, despite the major falls in numbers of children, a substantial addition to the population as a whole is to be expected, the sector experiencing the great gain being the population of working and childbearing age.

Table 7.6 shows the 5-year age groups of the population of the island according to the 1970 Census, as well as for the Projection at 1975, 1980, 1985 and 1990.

Projection III

Attention is here focused on the extent to which significant curbs exercised through two components of growth determine the demographic situation. The combination of fertility declines similar to those of Projection III and of sizeable rates of emigration results in almost counterbalancing natural increase after 1985. As will be seen from Table 7.2, most of the increase takes place between 1970 and 1975, the subsequent decelerating rates resulting in an increment of only 15,000 in the 5 year period after 1985. However it is only females that increase throughout the period. The movement shown by males is of a maximum at 1980, followed by notable reductions thereafter. In fact the total male population of 947,000 at 1990 is somewhat below that of 1975 (See Table 7.7). Appreciable increases in the estimated numbers of emigrants, coupled with falls in natural increase, result in emigration constituting a very powerful control on growth by the year 1990. If we express the net emigration as a percentage of the natural increase, we obtain a measure of the degree of control which the former exercises over population growth in general. In the situation under review, the proportion is pushed up from 42 percent in 1970-5 to 91 percent in 1985-90. There are downturns in the estimated birth rates, but

in view of the disturbances in age structure, produced by this Projection, this index is not a reliable indicator of shifts in fertility.

Profound effects on the age structure appear, as can be seen from Table 7.7. From 1975 onwards numbers of children under 5 drop steadily from a total of nearly 300,000 to about 227,000, that is by about one-quarter. The fall in the population of school age between 1975 and 1990 is equally impressive, from about 600,000 to 465,000 or by about 22 percent. Only within the age range 15-44 is there evidence of steady increments up to 1990 and even in this case the expansion is of an order much below that of Projections I and II. Between 1975 and 1990 this age group increases from 724,000 to 1,072,000, or by nearly one-half, which is a much more modest increment than that observed in the other Projections. Among males the age group 45-64 shows a sharp fall from 116,000 in 1975 to 72,000 by 1990. This contraction of 30 percent characterizes only males; among females the position is one of almost unchanging size. The main consequences of continued high emigration and falls in fertility are fully depicted in the altered percentage distributions. It is only the age group 15-44 that constitutes a rising proportion of the overall population.

The full effects of changes in the two components of growth involved in this Projection - fertility and external migration - are depicted in Table 7.8, which shows the population for this Projection in 5-year age groups according to the census of 1970 and the Projection.

TABLE A3.01*

Summary of Estimated Population Movements in Jamaica, 1960 to 1990,
According to Censuses of 1960 and 1970, and Three Projections from
1970 to 1990 (in 000's)

Year	Total Population	Movements Between Successive Intervals					Rates per 1,000 Average Population				
		Increases	Births	Deaths	Natural Increase	Net Emigration No.	% of Natural Increase	Birth	Death	Natural Increase	
Census Populations											
1960	1,609.8	-	-	-	-	-	-	-	-	-	
1970	1,854.3	244.5	676.5	141.3	535.2	290.7	54.3	39.1	8.2	30.9	
Projection I											
1975	2,143.1	288.8	363.0	74.2	288.8	-	-	36.3	7.4	28.9	
1980	2,517.7	374.6	459.7	85.1	374.6	-	-	39.5	7.3	32.2	
1985	2,994.5	476.8	575.0	98.2	476.8	-	-	41.7	7.1	34.6	
1990	3,561.7	567.2	679.0	111.8	567.2	-	-	41.4	6.8	34.6	
Projection II											
1975	2,102.7	248.4	320.9	72.5	248.4	-	-	32.4	7.3	25.1	
1980	2,338.0	235.3	313.9	78.5	235.4	-	-	28.3	7.1	21.2	
1985	2,535.4	197.3	281.9	84.6	197.3	-	-	23.1	6.9	16.2	
1990	2,712.5	177.1	268.6	91.5	177.1	-	-	20.5	7.0	13.5	
Projection III											
1975	1,994.7	140.4	311.7	68.4	243.3	102.9	42.3	32.4	7.1	25.3	
1980	2,078.9	84.2	264.1	65.7	198.4	114.2	57.6	25.9	6.5	19.4	
1985	2,107.5	28.6	227.8	67.1	160.7	132.1	82.2	21.8	6.4	15.4	
1990	2,122.4	14.9	236.5	73.6	162.9	148.0	90.9	22.4	7.0	15.4	

Note: Discrepancies in some totals due to rounding.

* Same as Table 7.2 in text.

Source: Recent Population Movements in Jamaica, C.I.C.R.E.D. Series, 1974, World Population Year.

A4.0 Distribution of the Adult Population and Average Number of Adults per Room, by Parish, 1960 and 1970

Table A4.01 shows the distribution of the adult (over 14 years) population in 1960 and 1970 and demonstrates that the average number of adults per room has remained fairly stable over the 1960-1970 period.

TABLE A4.01

Adult Population (over 14) and Average Number of Adults per Dwelling
1960 and 1970

Parish	Adult Population (over 14)			Average Number of Adults per Dwelling		
	1960	1970	Percentage Change	1960 (rounded)	1970 (rounded)	Percentage Change
Kingston/St. Andrew	271,791	325,620	+20%	2.4	2.5	+4.4%
St. Thomas	40,547	38,119	-6%	2.0	2.0	+3.9%
Portland	37,038	36,222	-2%	2.2	2.2	+0.8%
St. Mary	55,256	52,587	-5%	2.2	2.2	-0.1%
St. Ann	62,529	62,454	-	2.6	2.6	-1.2%
Trelawny	31,430	31,347	-	2.2	2.2	-0.2%
St. James	49,031	57,785	+18%	2.3	2.4	+5.9%
Hanover	30,234	29,801	-1%	2.4	2.3	-2.6%
Westmorland	61,692	56,563	-8%	2.3	2.2	-4.5%
St. Elizabeth	63,267	65,154	+3%	2.6	2.6	+0.7%
Manchester	63,408	64,985	+2%	2.7	2.6	-2.0%
Clarendon	91,614	90,123	-2%	2.3	2.4	+0.8%
St. Catherine	88,975	97,635	+10%	2.3	2.3	+2.4%
JAMAICA	946,812	1,009,491	+7%	2.4	2.4	+1.8%

Source: Population Trends and Housing Needs, Department of Statistics, 1974.

A5.0 Summary Tables of 1960 and 1970 Housing Characteristics and 1960-1970 Percentage Changes, by Region, Urban and Rural

This appendix summarizes the data on structure of the Jamaican housing stock discussed in Section 3.0 of this study. All the figures given in these appendix tables (A5.01 to A5.12) are in percentage terms. The percentage distributions of population add to 100 percent in each year. So, also, do the percentage distributions of dwellings. For example, urban population percentage, 1960 and rural population percentage, 1960 = 100 percent. The percentages for dwelling characteristics add vertically to 100 percent in each set

of characteristics, e.g.,	<u>Type of Tenure</u>	<u>100%</u>
	Owned	%
	Leased	%
	Rented	%
	Rent-free	%
	Squatter	%
	Other	%

TABLE A5.01 Percentage Distributions of Population and Dwellings by Type of Tenure, by Region, 1960 and 1970, and 1960-1970 Percentage Change

Population and Dwellings by Type of Tenure	Urban Percentages			Rural Percentages			
	1970	1960	60-70*	1970	1960	60-70*	
POPULATION	76	70	-42	24	30	+2	REGION 1
DWELLINGS	79	66	+34	21	34	-29	
OWNED	24	22	+46	66	62	-25	
LEASED	5	NA	NA	3	NA	NA	
RENTED	65	73	+18	21	29	-49	
RENT FREE	5	2	+196	10	8	-10	
SQUATTER	1	2	-70	-	1	-68	
OTHER	1	-	NA	1	-	NA	
POPULATION	19	12	+62	81	88	-	REGION 2
DWELLINGS	21	13	+65	79	87	-10	
OWNED	44	37	+93	71	71	-10	
LEASED	1	NA	NA	1	NA	NA	
RENTED	46	57	+33	17	21	-26	
RENT FREE	8	5	+169	9	7	+15	
SQUATTER	-	-	+14	-	1	-70	
OTHER	1	-	NA	1	-	NA	
	1970	1960	'60-70*	1970	1960	60-70*	
	Urban Percentages			Rural Percentages			

* Percentage Change

Source: Computed from 1960 and 1970 census data.

TABLE A5.02 Percentage Distribution of Population and Dwellings by Type of Dwelling, by Region, 1960 and 1970, and 1960-1970 Percentage Change

Population and Dwellings by Type of Dwelling	Urban Percentages			Rural Percentages			
	1970	1960	60-70*	1970	1960	60-70*	
POPULATION	76	70	+42	24	30	+2	REGION 1
DWELLINGS	79	66	+34	21	34	-29	
SEPARATE HOUSE	62	33	+154	88	74	-16	
FLAT/APARTMENT	31	22	+86	7	12	-56	
BARRACKS	-	-	+341	1	2	-62	
OUTROOM	1	3	-29	1	1	-54	
TENEMENT	NA	40	NA	NA	9	NA	
OTHER	6	3	+176	3	2	+39	
POPULATION	19	12	+62	81	88	-	REGION 2
DWELLINGS	21	13	+65	79	87	-10	
SEPARATE HOUSE	74	51	+139	88	80	-1	
FLAT/APARTMENT	19	19	+64	6	9	-37	
BARRACKS	1	-	+206	1	2	-15	
OUTROOM	1	2	-	1	1	-41	
TENEMENT	NA	25	NA	NA	6	NA	
OTHER	6	3	+235	3	2	+75	
	1970	1960	60-70*	1970	1960	60-70*	
	Urban Percentages			Rural Percentages			

* Percentage Change

Source: Computed from 1960 and 1970 census data.

TABLE A5.03 Percentage Distribution of Population and Dwellings by Type of Water Supply, by Region, 1960 and 1970, and 1960-1970 Percentage Change

Population and Dwellings by Type of Water Supply	Urban Percentages			Rural Percentages			
	1970	1960	60-70*	1970	1960	60-70*	
POPULATION	76	70	+42	24	30	+2	REGION 1
DWELLINGS	79	66	-34	21	34	-29	
PIPED INTO DWELLING	46	62	-	10	16	-53	
PIPED INTO YARD	45	28	+112	14	12	-20	
PRIVATE CATCHMENT	-	1	-72	6	3	+48	
PUBLIC STANDPIPE	7	8	+12	39	37	-26	
OTHER	2	-	+1,663	31	32	-30	
POPULATION	19	12	+62	81	88	-	REGION 2
DWELLINGS	21	13	+65	79	87	-10	
PIPED INTO DWELLING	25	17	+145	6	4	+41	
PIPED INTO YARD	40	51	+29	8	6	+20	
PRIVATE CATCHMENT	4	4	+65	12	12	-3	
PUBLIC STANDPIPE	25	24	+69	51	47	-1	
OTHER	6	3	+202	23	32	-37	
	1970	1960	60-70*	1970	1960	60-70*	
	Urban Percentages			Rural Percentages			

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.04 Percentage Distribution of Population and Dwellings by Type of Toilet Facility, by Region, 1960 and 1970, and 1960-1970 Percentage Change

Population and Dwellings by Type of Toilet Facility	Urban Percentages			Rural Percentages			
	1970	1960	60-70*	1970	1960	60-70*	
POPULATION	76	70	+42	24	30	+2	REGION 1
DWELLINGS	79	66	+34	21	34	-29	
PIT	23	37	-16	89	83	-24	
W.C.	76	62	+65	9	15	-56	
OTHER	-	-	+116	-	-	-56	
NONE	1	1	-29	2	2	-33	
POPULATION	19	12	+62	81	88	-	REGION 2
DWELLINGS	21	13	+65	79	87	-10	
PIT	68	80	+41	89	86	-7	
W.C.	30	15	+236	5	2	+78	
OTHER	-	4	-92	-	1	-86	
NONE	2	2	+71	6	10	-47	
	1970	1960	60-70*	1970	1960	60-70*	
	Urban Percentages			Rural Percentages			

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.05 Percentage Distribution of Population and Dwellings by Use of Toilet Facility, by Region, 1960 and 1970, and 1960-1970 Percentage Change

Population and Dwellings by Use of Toilet Facility	Urban Percentages			Rural Percentages			
	1970	1960	60-70*	1970	1960	60-70*	
POPULATION	76	70	+42	24	30	-	REGION 1
DWELLINGS	79	66	+34	21	34	-29	
SHARED	59	NA	NA	23	NA	NA	
NOT SHARED	41	NA	NA	75	NA	NA	
NONE	-	NA	NA	2	NA	NA	
POPULATION	19	12	+62	81	88	-	REGION 2
DWELLINGS	21	13	+65	79	87	-10	
SHARED	47	NA	NA	21	NA	NA	
NOT SHARED	51	NA	NA	73	NA	NA	
NONE	2	NA	NA	6	NA	NA	
	1970	1960	60-70*	1970	1960	60-70*	
	Urban Percentages			Rural Percentages			

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.06 Percentage Distribution of Population and Dwellings by Number of Rooms, by Region, 1960 and 1970, and 1960-1970 Percentage Change

Population and Dwellings by Number of Rooms	Urban Percentages			Rural Percentages			
	1970	1960	60-70*	1970	1960	60-70*	
POPULATION	76	70	+42	24	30	-	REGION 1
DWELLINGS	79	66	+34	21	34	-29	
1 ROOM	44	65	-8	31	46	-52	
2 ROOMS	18	15	+60	28	27	-25	
3 ROOMS	11	7	+122	19	12	+15	
4 ROOMS	7	4	+115	8	6	-7	
5+ ROOMS	12	9	+91	8	9	-34	
NOT STATED	7	NA	NA	5	NA	NA	
POPULATION	19	12	+62	81	88	-	REGION 2
DWELLINGS	21	13	+65	79	87	-10	
1 ROOM	37	55	+10	24	36	-40	
2 ROOMS	23	20	+90	32	37	-21	
3 ROOMS	14	9	+153	20	14	+25	
4 ROOMS	8	5	+154	10	7	+27	
5+ ROOMS	14	11	+112	9	17	+25	
NOT STATED	5	NA	NA	5	NA	NA	
	1970	1960	60-70*	1970	1960	60-70*	
	Urban Percentages			Rural Percentages			

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.07 Percentage Distribution of Population and Dwellings by Year Built, by Region, 1960 and 1970, and 1960-1970 Percentage Change

Population and Dwellings by Year Built	Urban Percentages			Rural Percentages			
	1970	1960	60-70*	1970	1960	60-70*	
POPULATION	76	70	+42	24	30	-	REGION 1
DWELLINGS	79	66	+34	21	34	-29	
BUILT 1970	1	NA	NA	1	NA	NA	
BUILT 1960-1969	27	NA	NA	36	NA	NA	
BUILT 1951-1959	18	NA	NA	22	NA	NA	
BUILT Pre-1950	28	NA	NA	28	NA	NA	
NOT STATED	27	NA	NA	14	NA	NA	
POPULATION	19	12	+62	81	88	-	REGION 2
DWELLINGS	21	13	+65	79	87	-10	
BUILT 1970	1	NA	NA	1	NA	NA	
BUILT 1960-1969	28	NA	NA	30	NA	NA	
BUILT 1951-1959	19	NA	NA	18	NA	NA	
BUILT Pre-1950	29	NA	NA	35	NA	NA	
NOT STATED	23	NA	NA	15	NA	NA	
	1970	1960	60-70*	1970	1960	60-70*	
	Urban Percentages			Rural Percentages			

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.08-A Percentage Distribution of Population and Dwellings by Characteristics, Region Ia, 1960 and 1970, and 1960-1970 Percentage Change

Region Ia (Kingston/St. Andrew)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
POPULATION	90	89	+36	10	11	+21
DWELLINGS	92	84	+27	8	16	-46
TYPE OF TENURE						
Owned	23	22	+33	69	63	-41
Leased	5	NA	NA	3	NA	NA
Rented	66	74	+14	19	30	-64
Rent Free	4	2	+164	7	5	-19
Squatter	-	3	-77	-	2	-92
Other	1	-	NA	1	-	NA
TYPE OF DWELLING						
Separate House	60	32	+134	90	77	-37
Flat/Apartment	33	22	+87	6	13	-75
Barracks	-	-	+179	-	-	-75
Outroom	1	3	-33	1	1	-72
Tenement	NA	40	NA	NA	7	NA
Other	6	3	+175	3	1	+33
TYPE OF WATER SUPPLY						
Piped into Dwelling	49	65	-5	19	35	-70
Piped into Yard	44	25	+118	14	14	-47
Private Catchment**	-	1	-79	4	2	+25
Public Standpipe	6	8	-14	43	30	-21
Other	2	-	+3,355	19	19	-47
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.08-B Percentage Distribution of Population and Dwellings by Characteristics, Region Ia, 1960 and 1970, and 1960-1970 Percentage Change

Region Ia (Continued) (Kingston/St. Andrew)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
TYPE OF TOILET FACILITY						
Pit	17	34	-38	81	64	-31
W.C.	83	65	+61	18	35	-72
Other	—	-	+86	-	-	+8
None	—	1	-43	1	1	-50
USE OF TOILET FACILITY						
Shared	59	NA	NA	19	NA	NA
Not Shared	40	NA	NA	80	NA	NA
None				1		
NUMBER OF ROOMS						
1	44	65	-14	23	39	-68
2	18	15	+51	27	26	-42
3	11	7	+106	20	12	-8
4	7	4	+108	11	8	-28
5+	13	9	+87	12	16	-59
Not Stated	7	NA	NA	7	NA	NA
YEAR BUILT						
1970	2	NA	NA	2	NA	NA
1960 - 1969	37	NA	NA	37	NA	NA
1951 - 1959	23	NA	NA	23	NA	NA
Pre-1950	25	NA	NA	25	NA	NA
Not Stated		NA	NA	14	NA	NA
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.09-A Percentage Distribution of Population and Dwellings by Characteristics, Region 1b, 1960 and 1970 and 1960-1970 Percentage Change

Region 1b (St. Catherine)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
POPULATION	34	18	+130	66	82	-4
DWELLINGS	37	16	+151	63	84	-20
TYPE OF TENURE						
Owned	33	27	+210	64	62	-17
Leased	6	NA	NA	2	NA	NA
Rented	51	70	+81	21	28	-40
Rent Free	8	3	+525	11	10	-7
Squatter	1	-	+2033	-	-	+69
Other	1	-	NA	1	-	NA
TYPE OF DWELLING						
Separate House	77	36	+431	87	72	-4
Flat/Apartment	16	23	+76	8	11	-43
Barracks	1	-	+795	1	3	-62
Outroom	1	3	+20	1	1	-42
Tenement	NA	33	NA	NA	11	NA
Other	4	4	+185	3	2	+42
TYPE OF WATER SUPPLY						
Piped into Dwelling	24	16	+284	7	5	+10
Piped into Yard	53	74	+81	14	11	-1
Private Catchment**	1	1	+25	6	3	+55
Public Standpipe	17	8	+458	37	42	-28
Other	5	2	+729	36	39	-26
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.09-B Percentage Distribution of Population and Dwellings by Characteristics, Region 1b, 1960 and 1970, and 1960-1970 Percentage Change

Region 1b (Continued) (St. Catherine)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
TYPE OF TOILET FACILITY						
Pit	75	86	+117	92	94	-21
W.C.	24	13	+362	6	3	+47
Other	-	-	+1450	-	-	-69
None	1	-	+285	2	3	-30
USE OF TOILET FACILITY						
Shared	55	NA	NA	25	NA	NA
Not Shared	44	NA	NA	72	NA	NA
None	1	NA	NA	2	NA	NA
NUMBER OF ROOMS						
1	46	61	+88	34	51	-45
2	20	17	+184	29	28	-17
3	14	8	+308	18	11	+28
4	6	5	+213	7	5	+11
5+	8	3	+151	7	5	+9
Not Stated	6	NA	NA	4	NA	NA
YEAR BUILT						
1970	2	NA	NA	1	NA	NA
1960 - 1969	31	NA	NA	35	NA	NA
1951 - 1959	20	NA	NA	21	NA	NA
Pre-1950	24	NA	NA	28	NA	NA
Not Stated	23	NA	NA	13	NA	NA
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change..

Source: Computed from 1960 and 1970 census data.

TABLE A5.10-A Percentage Distribution of Population and Dwellings by Characteristics, Region 1, 1960 and 1970, and 1960-1970 Percentage Change

Region 1 (Kingston, St. Andrew, St. Catherine)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
POPULATION	76	70	+42	24	30	+2
DWELLINGS	74	66	+34	21	34	-29
TYPE OF TENURE						
Owned	24	22	+46	66	62	-25
Leased	5	NA	NA	3	NA	NA
Rented	65	73	+18	21	29	-49
Rent Free	5	2	+196	10	8	-10
Squatter	1	2	-70	-	1	-68
Other	1	-	NA	1	-	NA
TYPE OF DWELLING						
Separate House	62	33	+154	88	74	-16
Flat/Apartment	31	22	+86	7	12	-56
Barracks	-	-	+341	1	2	-62
Outroom	1	3	-29	1	1	-54
Tenement	NA	40	NA	NA	9	NA
Other	6	3	+176	3	2	+39
TYPE OF WATER SUPPLY						
Piped into Dwelling	46	62	-	10	16	-53
Piped into Yard	45	28	+112	14	12	-20
Private Catchment**	-	1	-72	6	3	+48
Public Standpipe	7	8	+12	39	37	-26
Other	2	-	+1663	31	32	-30
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.10-B Percentage Distribution of Population and Dwellings by Characteristics, Region 1, 1960 and 1970, and 1960-1970 Percentage Change

Region 1 (Continued)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
TYPE OF TOILET FACILITY						
Pit	23	37	-16	89	83	-24
W.C.	76	62	+65	9	15	-56
Other	-	-	+116	-	-	-56
None	1	1	-29	2	2	-33
USE OF TOILET FACILITY						
Shared	59	NA	NA	23	NA	NA
Not Shared	41	NA	NA	75	NA	NA
None	-	NA	NA	2	NA	NA
NUMBER OF ROOMS						
1	44	65	-8	31	46	-52
2	18	15	+60	28	27	-25
3	11	7	+122	19	12	+15
4	7	4	+115	8	6	-7
5+	12	9	+91	8	9	-34
Not Stated	7	NA	NA	5	NA	NA
YEAR BUILT						
1970	1	NA	NA	1	NA	NA
1960 - 1969	27	NA	NA	36	NA	NA
1951 - 1959	18	NA	NA	22	NA	NA
Pre-1950	28	NA	NA	28	NA	NA
Not Stated	27	NA	NA	14	NA	NA
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.11-A Percentage Distribution of Population and Dwellings by Characteristics, Region 2, 1960 and 1970, and 1960-1970 Percentage Change

Region 2 (Rural Parishes)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
POPULATION	19	12	+62	81	88	-
DWELLINGS	21	13	+65	74	87	-10
TYPE OF TENURE						
Owned	44	37	+93	71	71	-10
Leased	1	NA	NA	1	NA	NA
Rented	46	57	+33	17	21	-26
Rent Free	8	5	+169	9	7	+15
Squatter	-	-	+14	-	1	-70
Other	1	-	NA	1	-	NA
TYPE OF DWELLING						
Separate House	74	51	+139	88	80	-1
Flat/Apartment	19	19	+64	6	9	-37
Barracks	1	-	+206	1	2	-15
Outroom	1	2	-	1	1	-41
Tenement	NA	25	NA	NA	6	NA
Other	6	3	+235	3	2	+75
TYPE OF WATER SUPPLY						
Piped into Dwelling	25	17	+145	6	4	+41
Piped into Yard	40	51	+29	8	6	+20
Private Catchment**	4	4	+65	12	12	-3
Public Standpipe	25	24	+69	51	47	-1
Other	6	3	+202	23	32	-37
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.11-B Percentage Distribution of Population and Dwellings by Characteristics, Region 2, 1960 and 1970, and 1960-1970 Percentage Change

Region 2 (Continued) (Rural Parishes)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
TYPE OF TOILET FACILITY						
Pit	68	80	+41	89	86	-7
W.C.	30	15	+236	5	2	+78
Other	-	4	-92	-	1	-86
None	2	2	+71	6	10	-47
USE OF TOILET FACILITY						
Shared	47	NA	NA	21	NA	NA
Not Shared	51	NA	NA	73	NA	NA
None	2	NA	NA	6	NA	NA
NUMBER OF ROOMS						
1	37	55	+10	24	36	-40
2	23	20	+90	32	37	-21
3	14	9	+153	20	14	-25
4	8	5	+154	10	7	+27
5+	14	11	+112	9	7	+25
Not Stated	5	NA	NA	5	NA	NA
YEAR BUILT						
1970	1	NA	NA	1	NA	NA
1960 - 1969	28	NA	NA	30	NA	NA
1951 - 1959	19	NA	NA	18	NA	NA
Pre-1950	29	NA	NA	35	NA	NA
Not Stated	23	NA	NA	15	NA	NA
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.12-A Percentage Distribution of Population and Dwellings by Characteristics, Region 3 (Jamaica), 1960 and 1970, and 1960-1970 Percentage Change

Region 3 (Jamaica)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
POPULATION	41	32	+47	59	68	-
DWELLINGS	45	33	+42	55	67	-14
TYPE OF TENURE						
Owned	30	26	+62	71	70	-13
Leased	4	NA	NA	1	NA	NA
Rented	60	69	+21	18	22	-32
Rent Free	6	3	+185	10	7	+10
Squatter	-	2	-65	-	1	-70
Other	1	1	NA	1	-	NA
TYPE OF DWELLING						
Separate House	65	37	+149	88	79	-4
Flat/Apartment	28	22	+82	6	9	-42
Barracks	-	-	+247	1	2	-21
Outroom	1	2	-24	1	1	-44
Tenement	NA	36	NA	NA	6	NA
Other	6	3	+190	3	2	+67
TYPE OF WATER SUPPLY						
Piped into Dwelling	40	51	+11	6	6	-7
Piped into Yard	43	34	+82	9	7	+7
Private Catchment**	1	2	+4	11	10	-
Public Standpipe	12	12	+40	49	45	-5
Other	3	1	+395	24	32	-36
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

TABLE A5.12-B Percentage Distribution of Population and Dwellings by Characteristics, Region 3 (Jamaica), 1960 and 1970, and 1960-1970 Percentage Change.

Region 3 (Continued) (Jamaica)	Urban Percentages			Rural Percentages		
	1970	1960	60-70*	1970	1960	60-70*
TYPE OF TOILET FACILITY						
Pit	36	48	+7	89	85	-10
W.C.	63	51	+77	6	5	-1
Other	-	1	-64	-	1	-84
None	1	1	+20	5	9	-47
USE OF TOILET FACILITY						
Shared	56	NA	NA	22	NA	NA
Not Shared	44	NA	NA	73	NA	NA
None	1	NA	NA	5	NA	NA
NUMBER OF ROOMS						
1	42	63	-4	25	38	-43
2	20	16	+69	32	35	-22
3	12	7	+131	20	14	+24
4	8	5	+126	9	7	+21
5+	13	9	+97	9	7	+11
Not Stated	6	NA	NA	5	NA	NA
YEAR BUILT						
1970	1	NA	NA	1	NA	NA
1960 - 1969	27	NA	NA	31	NA	NA
1951 - 1959	19	NA	NA	19	NA	NA
Pre-1950	28	NA	NA	34	NA	NA
Not Stated	26	NA	NA	13	NA	NA
	1970	1960	60-70*	1970	1960	60-70*
	Urban Percentages			Rural Percentages		

* Percentage Change.

Source: Computed from 1960 and 1970 census data.

A6.0 Estimation of the Distribution of Household Income by Region, Urban and Rural, 1975

This appendix presents the graphs that were used to generate the income distribution figures by region (urban and rural) for 1975 shown in Table 4.08.

The graphs (Figures A6.1 and A6.2) are based on the data in Tables 4.06 and 4.07. Judgement was used in adjusting these graphs in order to obtain regional data (Figures A6.3 and A6.4).

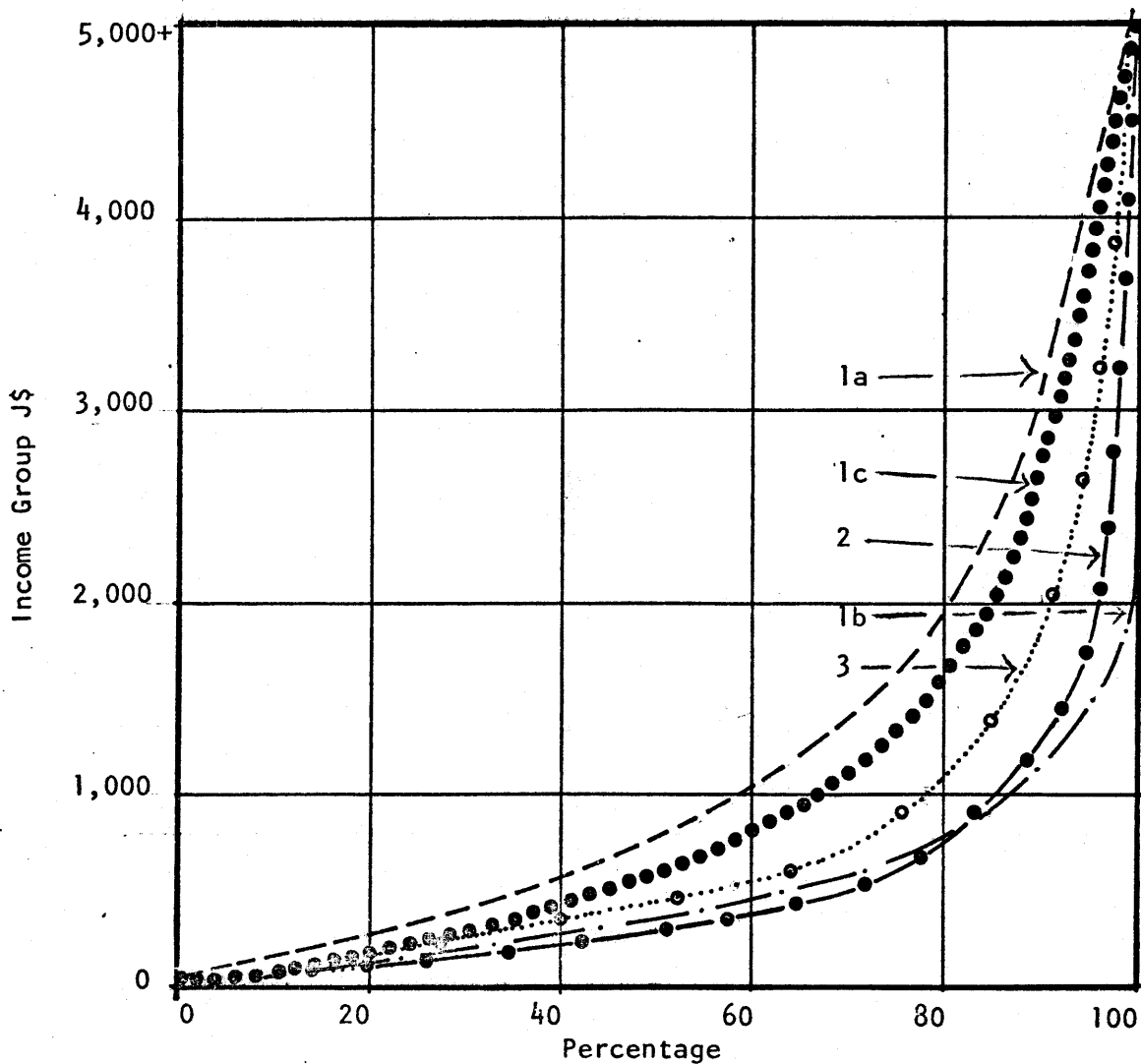


FIGURE A6.1 HOUSEHOLD INCOME DISTRIBUTION, JAMAICA, 1972
(Cumulative)

- 1a Kingston/St. Andrew (Urban and Rural)
- 1b St. Catherine (Urban and Rural)
- 1c (1a + 1b) Region 1 (Urban and Rural)
- 2 Rural Parishes (Urban and Rural)
- 3 Jamaica (1c + 2) (Urban and Rural)

Source: Adapted from Household Savings Survey, 1972,
National Savings Committee, Jamaica.

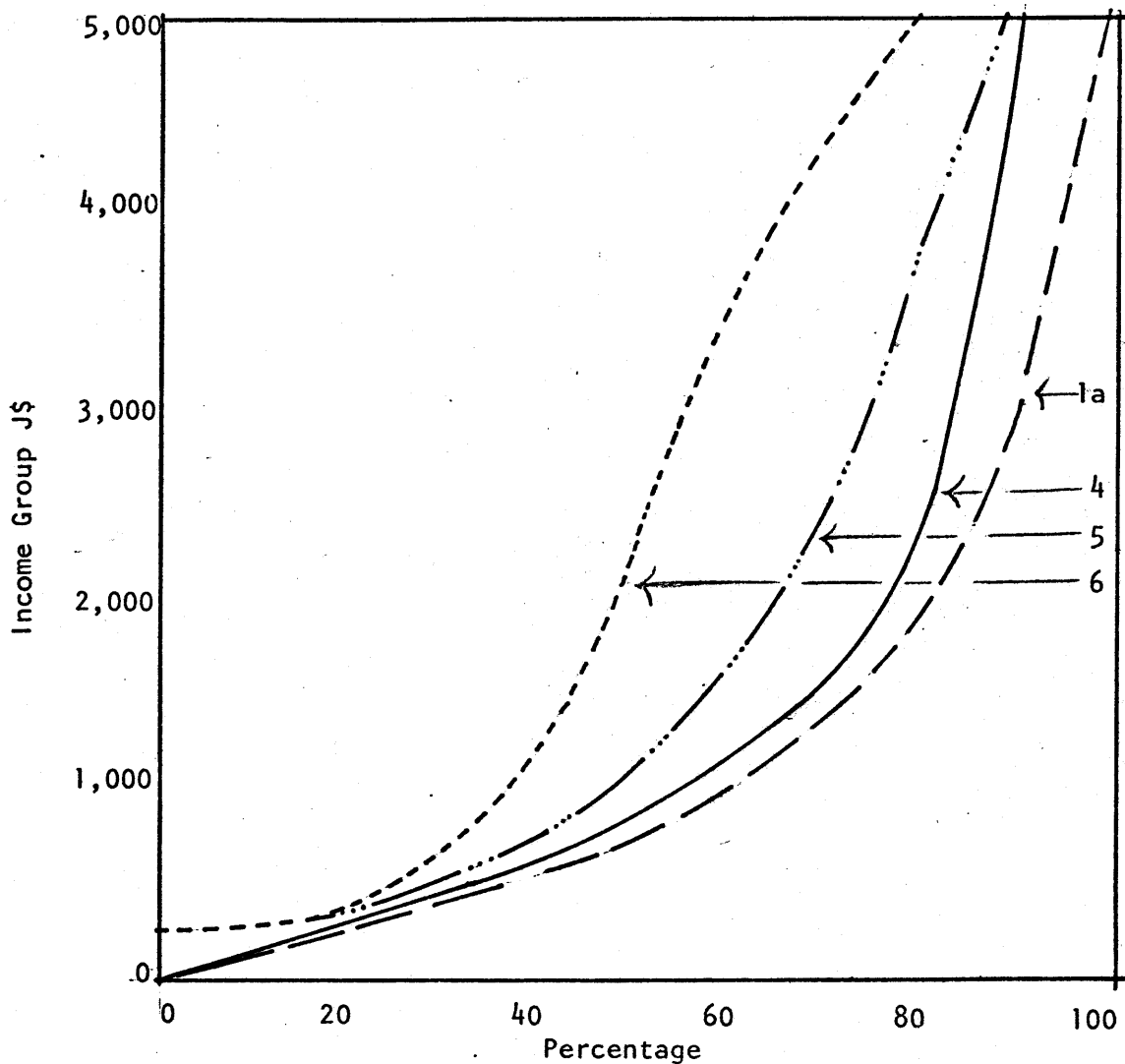


FIGURE A6.2

HOUSEHOLD INCOME DISTRIBUTION
Kingston/St. Andrew

- 1a From Household Savings Survey, 1972, National Savings Committee, Jamaica
- 4 Oberman's based on past and projected GNI, proposed 5 year development plan of Central Planning Unit, Jamaica.
- 5 Suggested intermediate hypothesis for establishing interim program, Kingston Region Draft Low Income Strategy, Shankland Cox Overseas, Kingston, Jamaica, 1972.
- 6 Line suggested from observation of existing housing stock: Oberman UNDP: source same as above.

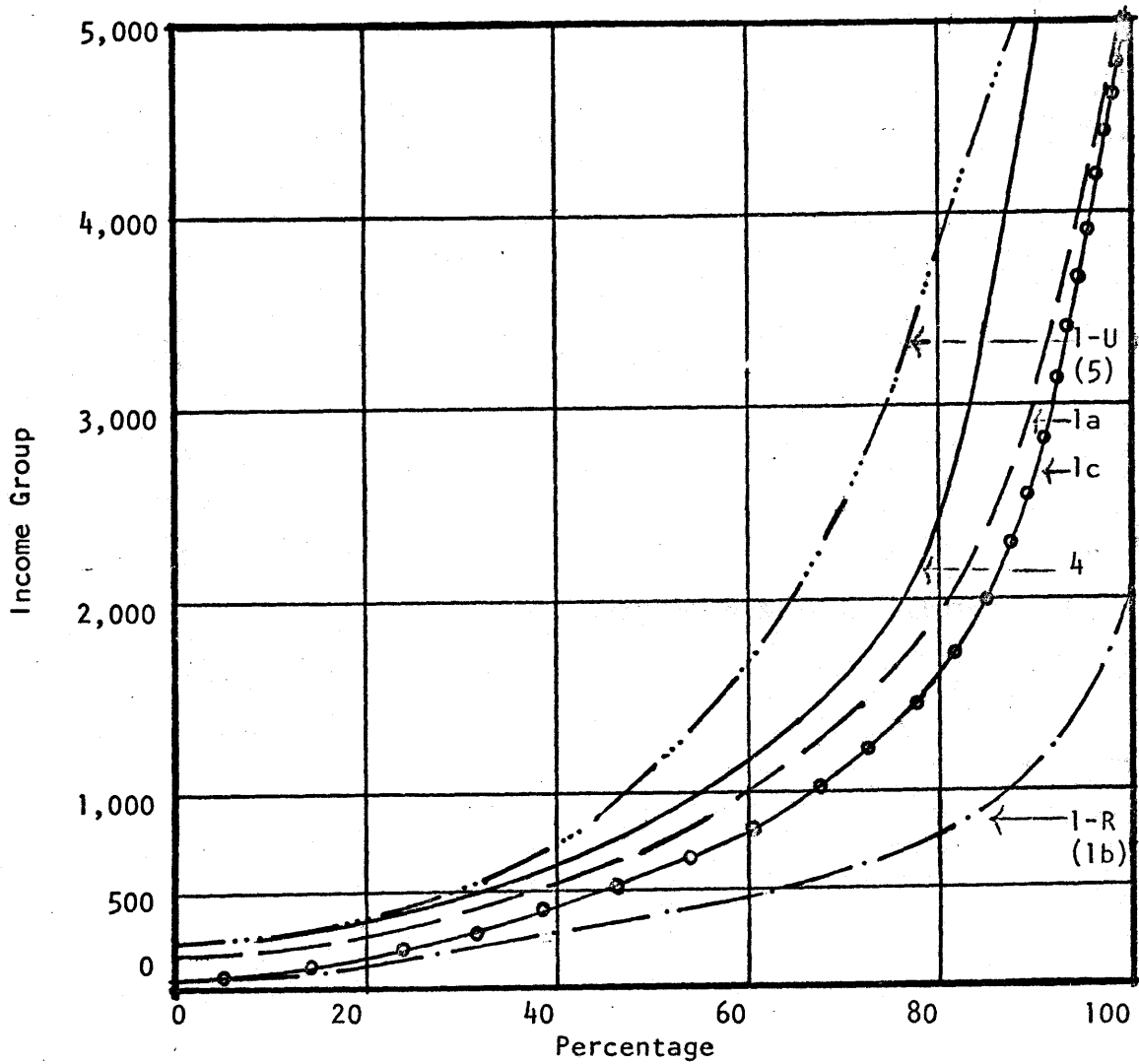


FIGURE A6.3 ASSUMED HOUSEHOLD INCOME DISTRIBUTION FOR REGION 1, Urban and Rural, 1975 (Cumulative)

- | | |
|-----|--|
| 1-U | Assumed 1975 Household Income Distribution, Urban |
| 1-R | Assumed 1975 Household Income Distribution, Rural |
| 1a | See Figure A6.1. |
| 1c | See Figure A6.1. |
| 4 | 1971 Kingston/St. Andrew Urban Estimate (See Figure A6.2.) |

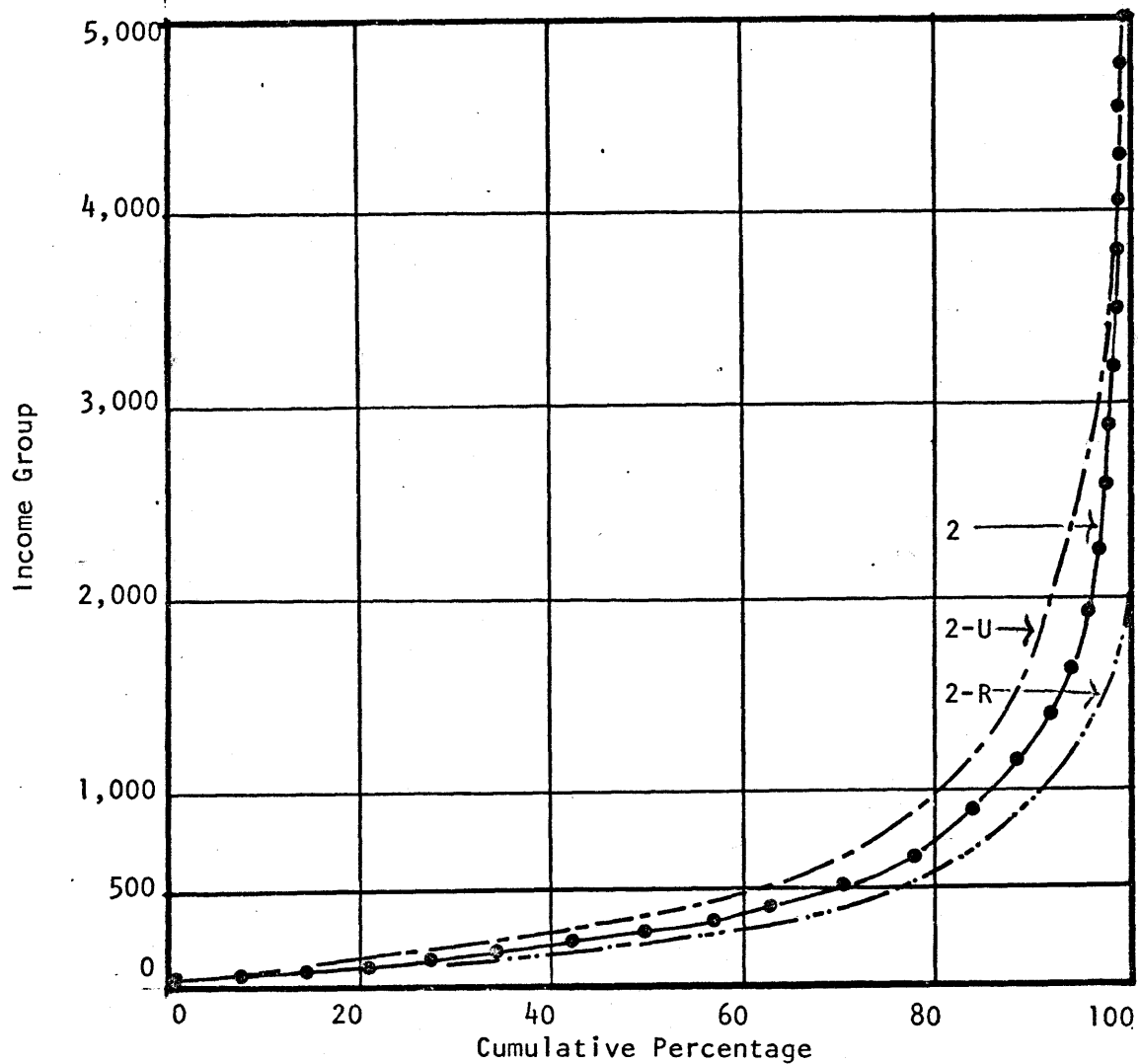


FIGURE A6.4 ASSUMED HOUSEHOLD INCOME DISTRIBUTION FOR REGION 2, Urban and Rural, 1975

2-U Assumed 1975 Household Income Distribution, Urban

2-R Assumed 1975 Household Income Distribution, Rural

2 See Figure A6.1.

A7.0 The Housing Performance of the Private Sector
and the Government

Tables A7.01 and A7.02 set out the housing performance of the private sector and the government, respectively. Table A7.03 represents private sector housing construction activity which qualified for mortgage insurance. Dwellings that qualify for mortgage insurance are eligible for higher percentages of mortgage finance-- up to 90 percent of the value of the dwelling.

TABLE A7.01

Private Sector House Construction Performance by Region, 1961-1972*

NO. REGION	Number of Dwellings Completed, Urban and Rural											1961-	
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1970	1971	1972
1a Kgn./St. Andrew	349	365	190	450	549	325	348	NA	129	210	2,915	474	326
b St. Catherine	56	77	103	172	193	NA	196	272	382	174	1,625	265	649
c (1a + 1b)	405	442	293	622	742	325	544	272	511	384	4,540	739	975
2 Rural Parishes**	177	193	193	335	313	NA	594	409	952	778	3,944	774	775
3 Jamaica (1c + 2)	582	635	957	957	1,055	325	1,138	681	1,463	1,162	8,484	1,513	1,750

Source: Building Activity in Jamaica, 1961-1965 and 1965-1972, Department of Statistics, Jamaica.

* This data is largely urban and deals mainly with the "building limits" around main towns for which building permits were granted.

** 1961-65 data included St. Mary, St. James, Manchester and Clarendon figures only.

TABLE A7.02

Government House Construction Performance by Type of Housing Program,
1963-1972

TYPE OF PROGRAM	Number of Dwellings Completed									
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Kingston/St. Andrew	-	-	-	-	69	512	190	-	-	-
Slum Clearance and Rehousing	203	327	165	180	-	72	-	-	63	142
Government Housing Scheme - Urban	-	-	-	-	-	-	-	-	56	-
United States A.I.D. Programme	-	-	-	16	334	-	-	-	-	-
Owner/Occupier	228	385	239	332	422	288	370	454	380	255
Indigent Housing	514	664	352	498	255	44	15	26	187	354
Farm Housing	570	906	655	553	437	369	141	287	91	-
Government Housing Scheme - Rural	240	213	274	424	306	51	390	463	396	432
Aided Self Help	-	-	31	-	59	-	-	-	-	-
Assistance to Housing Co-operatives	-	-	25	-	10	16	-	20	209	20
Land Reform Programme	-	-	-	-	63	2	-	-	-	-
Flora Flood Sufferers Rehabilitation	-	-	208	-	22	-	-	-	-	-
Hayes Cornpiece	100	72	-	12	-	-	-	-	-	-
Fisherman Housing	-	-	-	31	-	-	-	-	-	-
TOTALS	1,855	2,567	1,949	2,046	1,977	1,354	1,106	1,250	1,382	1,203

Source: Building Activity in Jamaica, 1961-1965 and 1965-1972, Department of Statistics, Jamaica.

TABLE A7.03

Dwellings Completed by Private Housing Developers Under the Mortgage Insurance Law 1961 - 1972

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
1 Number of Dwellings Completed	1325	721	141	408	1597	299	915	563	396	1178	322	259
2 Total Floor Area ('000 sq. ft.)	1204	1012	201	512	992	249	485	563	320	991	321	220
3 Average Floor Area per Dwelling (sq. ft.)	909	1403	1424	1403	621	833	530	1000	806	841	998	848
4 Total Cost of Holding* (J\$'000)	NA	NA	NA	NA	NA	NA	3281	4995	2589	7774	2415	NA
5 Total Cost of Dwelling (J\$'000)	NA	NA	NA	NA	NA	NA	2721	3689	1934	6087	1735	NA
6 Average Cost of Holding (J\$'000)	NA	NA	NA	NA	NA	NA	3586	8872	6537	6599	7500	NA
7 Average Cost of Dwelling (J\$'000)	NA	NA	NA	NA	NA	NA	2974	6553	4880	5168	5389	NA
8 Average Cost of Holding (J\$ per sq.ft.)	NA	NA	NA	NA	NA	NA	6.77	8.87	8.10	7.85	7.52	NA
9 Average Cost of Dwelling (J\$ per sq.ft.)	NA	NA	NA	NA	NA	NA	5.62	6.55	6.05	6.14	5.40	NA
10 Average Dwelling Cost as Percentage (%) of Average Holding Cost	NA	NA	NA	NA	NA	NA	83	74	75	78	72	NA

* Holding = Dwelling + Land

Source: Computed from Building Activity in Jamaica 1961-65 and Building Activity in Jamaica 1965-1972, Department of Statistics, Jamaica.

A8.0 Changes in Wages in Major Industrial Sectors
and in Cost of Living, 1966-1974, and Selected
Labour Force Statistics

TABLE A8.01 Average Percentage Increase in Wages in Major Industrial Sectors and Government
1966 - 1975

SECTOR	Average Percentage Change									
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
1 Manufacturing	9.3	11.1	12.7	13.1	21.7	18.4	18.8	26.3	42.2	NA
2 Mining	8.0	8.0	18.0	-	-	21.8	-	50.4	-	NA
3 Building and Construction	12.5	8.0	-	16.0	-	20.0	-	25.0	-	77*
4 Transportation Storage and Communication	10.7	9.1	9.4	10.4	20.0	15.4	22.5	18.9	35.7	NA
5 Electricity Gas and Water	NA	NA	NA	NA	NA	15.0	-	25.0	35.3	NA
6 Commerce	13.8	10.0	9.9	13.4	18.0	14.1	15.0	20.9	38.0	NA
7 Other Services	NA	NA	NA	NA	NA	NA	19.7	35.0	35.8	NA
8 Government	6.6	12.8	8.5	NA	NA	NA	NA	NA	NA	NA

Source: Reports and Statements of Accounts 1966-1974, Bank of Jamaica, Kingston, Jamaica, refers to unionized labour force only (except government).

* Estimate obtained by author from a Jamaican quantity surveying firm, based on Joint Industrial Council Award in 1975 (84% unskilled and 72% skilled).

TABLE A8.02

Percentage Change in Mean Annual Consumer Price Indices (All Items and Housing)
By Region, 1968 - 1972 (January 1967 = 100)

	1966	1967	1968	1969	1970	1971	1972	1973	1974
Kingston Area:									
All Items	NA	NA	6.0	6.2	9.7	6.7	5.9	19.2	27.2
Housing	NA	NA	3.5	6.8	7.3	4.5	4.1	13.6	16.2
Rural Areas:									
All Items	NA	NA	6.0	4.9	10.5	7.1	5.5	19.9	32.9
Housing	NA	NA	7.1	3.3	6.2	4.6	-4.0	-4.3	23.6

Source: Economic Surveys Jamaica 1968-1973, National Planning Agency, Kingston, Jamaica.
Reports and Statements of Accounts 1966-1974, Bank of Jamaica, Kingston, Jamaica.

TABLE A8.03 Labour Force Employed and Unemployed by Region (Numerical and Percentage) 1972 - 1974

REGION	April 1972			April 1973			April 1974		
	Total	Employed	Unemployed	Total	Employed	Unemployed	Total	Employed	Unemployed
1	344,200	263,300	80,900	346,400	271,100	75,300	358,000	278,000	80,000
2	438,500	334,900	103,600	464,300	366,400	97,900	462,000	364,000	98,000
3 Jamaica	782,700	598,200	184,500	810,700	637,500	173,200	820,000	642,000	178,000
Percentages									
1	100	76	24	100	78	22	100	78	22
2	100	76	24	100	79	21	100	79	21
3 Jamaica	100	76	24	100	79	21	100	78	22
Percentages									
1	44	44	44	43	43	43	44	43	45
2	56	56	56	57	57	57	56	57	55
3 Jamaica	100	100	100	100	100	100	100	100	100

Source: Computed from The Labour Force 1974, Department of Statistics, Jamaica.

TABLE A8.04

Distribution of the Labour Force and Unemployment Rate
by Industrial Classification 1972 - 1974

	Distribution of Labour Force 1972 - 1974						Unemployment Rate		
	Percentage						Percentage		
	April 1972	April 1973	April 1974	April 1972	April 1973	April 1974	April 1972	April 1973	April 1974
1 Agriculture, Forestry, Fishing and Mining	217,100	227,000	245,000	28	28	30	5.5	4.7	5.2
2 Manufacture	92,400	94,100	98,800	12	12	12	15.1	16.1	17.6
3 Construction and Installation	50,000	53,200	52,000	6	7	6	22.5	25.4	23.2
4 Transport, Communications and Public Utilities	29,000	30,500	32,300	4	4	4	11.9	9.8	12.3
5 Commerce	87,000	101,400	91,200	11	13	11	10.8	10.1	13.2
6 Other Services	139,800	155,900	154,000	18	19	19	28.2	31.2	30.8
7 Public Administration	74,200	83,200	81,500	9	10	10	9.4	16.4	14.3
8 Industry Not Specified	10,700	9,500	7,100	1	1	1	56.5	27.0	36.7
9 TOTAL CLASSIFIABLE LABOUR FORCE	700,500	754,800	761,900	89	93	93	14.6	15.5	15.7
10 TOTAL LABOUR FORCE	782,700	810,700	820,000	100	100	100	23.6	21.4	21.7

Source: Adapted from The Labour Force 1974, Department of Statistics, Jamaica.

A9.0 Construction Cost Estimates

This appendix presents construction cost data for selected private and government housing projects. These data also include house types and sizes. Tables A9.03 and A9.04 present the cost estimates for self-help construction discussed in Section 4.3.

TABLE A9.01

Conventionally Built Housing Projects Constructed by West Indies Home Contractors, 1968-1975*

PROJECT	Year Built	Number of Units	Number of Bedrooms	Floor Area Sq.Ft.	Cost	Cost Price	Selling	Selling Price
					Price per Unit	per Sq.Ft. of Floor Area J\$/Sq.Ft.	Price per Unit J\$	per Sq.Ft. of Unit Floor Area J\$/Sq.Ft.
Independence City Phase I	1968	992	2-B	669	NA	NA	5,456	8.16
			3-B	998	NA	NA	7,448	7.46
Edgewater (70 percent in First Phase)	1970-71	689	3-B	1,214	NA	NA	13,492	11.11
	1972		3-B	1,214	NA	NA	14,800	12.19
Independence City Phase II	1972	169	2-B	669	NA	NA	7,150	10.69
Bridgeport (Haciendas)	1973	1,354	2-B	832	NA	NA	NA	NA
			3-B	1,364	NA	NA	17,850	13.09
Passage Fort	1975	1,193	2-B	669	NA	NA	12,787	19.11
Waterford (Scheduled for Completion in 1976)	1975-76	3,725	2-B	470	NA	NA	9,179	19.53

* Information obtained by author from the contractors in December, 1975. The contractors are, by far, the largest private housing developers in Jamaica. They use a large panel precasting system. All units except Waterford had carports.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE A9.02

Selected Conventionally Built Government Housing Projects, 1969-1975*

PROJECT	Year Built	Number of Units	Number of Bedrooms	Floor Area Sq.Ft.	Cost Price per Unit	Cost Price per Sq.Ft. of Unit Floor Area J\$/Sq.Ft.	Selling Price per Unit J\$	Selling Price per Sq.Ft. of Unit Floor Area J\$/Sq.Ft.
NA	1969	NA	2-B	421	3,549	8.43	NA	NA
NA	1970	NA	2-B	440	4,026	9.15	NA	NA
NA	1971	NA	2-B	426	4,359	10.23	NA	NA
NA	1972	NA	2-B	530	6,595	12.44	NA	NA
NA	1973	NA	2-B	443	5,342	12.06	NA	NA
NA	1974	NA	2-B	504	7,206	14.30	NA	NA
NA	1975	NA	NA****	610	10,095	16.57	NA	NA
Trench Town** Phase 6	1975	NA	2-B 2-B	481 636	5,996 8,301	12.46 13.05	NA NA	NA NA
Trench Town** Phase 7	1975	NA	2-B	504	7,354	14.59	NA	NA
Stadium Gardens***	1975	NA	2-B 3-B	610 824	10,072 13,493	16.51 16.37	NA NA	NA NA

* Information obtained by author from a Jamaican firm of quantity surveyors in December, 1975. These units are of conventional concrete block construction with corrugated aluminium sheet roofs.

** Excludes 1975 Labour Award. Project under construction.

*** Includes 1975 Labour Award. Project not yet under construction.

**** Appears to be a 2-B unit similar to Stadium Gardens.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE A9.03 Sites and Services Cost Estimates (per Unit, December, 1975)
**

		J\$
1. Residential Infrastructure Costs (Source: World Bank Report [11].).		
a) Average Assignable Infrastructure Cost per Unit J\$690		
Average Infrastructure Cost per Lot, say:		900
Adjusted Upwards for Inflation [J\$(690X1.3)=J\$897]		
2. On-Lot Development Cost (2 Core) (Source: World Bank Report [11].).		
a) Option 1	Cost J\$	
Services and Connections and Party Wall	550	
Materials for Core, Shelter and Enclosure	<u>620</u>	
Total	1,170	
Total Adjusted for Inflation, say: [J\$(1,170X1.3)=J\$1,521]		1,500
b) Option 2	Cost J\$	
Services, Connections and Party Wall	550	
Core	380	
Materials for Shelter and Enclosure	<u>490</u>	
Total	1,420	
Total Adjusted for Inflation, say: [J\$(1,420X1.3)=J\$1,846]		1,850

continued.....

TABLE A9.03
(Continued)

		J\$
2. c)	Option 3	Cost J\$
	Services, Connections and Party Wall	550
	Core	380
	Shelter	620
	Materials for Enclosure	<u>250</u>
	Total	1,800
	Total Adjusted for Inflation, say: [J\$(1,800X1.3)=J\$2,340]	2,350
3.	Room Extension Materials Cost*	
a)	First Bedroom [120 sq.ft. at J\$5* per sq.ft. = J\$600]	600
b)	Second Bedroom [120 sq.ft. at J\$4* per sq.ft. = J\$480]	480
c)	Third Bedroom [100 sq.ft. at J\$4* per sq.ft. = J\$400]	400
4.	Land Costs per Lot (Source: World Bank Report [11, p.15].).	
	Average Land Volume per Acre = J\$17,000	
	Assuming 15 Lots per Acre Gross Average Lot Cost J\$(17,000÷15)=J\$1,133	
	Average Lot Cost Adjusted for Inflation, say: [J\$(1,133X1.3)=J\$1,473]	1,500

* Based on information obtained by author from Jamaican Quantity Surveying Firm, December, 1975.

** Inflation adjustment by author.

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

TABLE A9.04 Sites and Services Cost Estimates (per unit, December, 1975)

OPTION (2 Core)	Description	Cost Estimates	J\$
1	Infrastructure, Basic Serviced Lot and Party Wall Are Contracted Conventionally. Materials Loan Provided for Self-Help Construction of Core, Enclosed Shelter, and Room Extensions.	Infrastructure	900
		Core and Enclosed Shelter	1,500
		Land	1,500
		<u>Total (Studio --ST)</u>	<u>3,900</u>
		One Bedroom Unit (1-B)	4,500
		Two Bedroom Unit (2-B)	4,980
		Three Bedroom Unit (3-B)	5,380
2	Infrastructure, Basic Serviced Lot, Party Wall and Core Are Contracted Conventionally. Materials Loan Provided for Self-Help Construction of Enclosed Shelter and Room Extensions.	Infrastructure	900
		Core and Enclosed Shelter	1,850
		Land	1,500
		<u>Total (Studio --ST)</u>	<u>4,250</u>
		One Bedroom Unit (1-B)	4,850
		Two Bedroom Unit (2-B)	5,330
		Three Bedroom Unit (3-B)	5,730
3	Infrastructure, Basic Serviced Lot, Party Wall, Core and Shelter are Contracted Conventionally. Materials Loan Provided for Enclosing Shelter and Room Extensions.	Infrastructure	900
		Core and Enclosed Shelter	2,350
		Land	1,500
		<u>Total (Studio --ST)</u>	<u>4,750</u>
		One Bedroom Unit (1-B)	5,350
		Two Bedroom Unit (2-B)	5,830
		Three Bedroom Unit (3-B)	6,230

Currency equivalents: US\$1.00=J\$0.91, J\$1.00=US\$1.10.

A10.0 Gross Fixed Capital Formation in Residential Construction

In this appendix we try to estimate gross fixed capital formation in residential construction. These estimates are exclusive of land development which takes place without simultaneous housing construction. Three estimates were developed, all based on forward projections of GDP (see Section 5.0, Table 5.02). All estimates sought to evaluate GDP growth in constant 1975 figures so that we could compare our estimates on capital formation with our estimates of capital costs (Section 4.3).

Alternative 1. This alternative is based on the 1960-1974 rates of growth shown in Table 5.01B. The 1975 figure is estimated using the current 1960-1974 growth rates. This 1975 figure is then projected using the figure for constant GDP growth rates, 1960-1974. This procedure yields figures for 1976-1985 in constant, though crude, terms.

Alternative 2. This procedure is the same as Alternative 2, with the exception that the 1969-1974 rates of GDP growth are used.

Alternative 3. The previous estimates (Alternatives 1 and 2) do not correct for the fact that when the base year is changed from 1960 to 1975, the average annual rates of growth arrived at using the 1970 base change. This alternative attempts to make the correction. We go about this by trying to project the GDP deflator forward to 1976. We do this by assessing the percentage changes in the implicit annual GDP deflators over the period 1960-1974. Using a regression model we then project these percentage changes to 1985 and develop a series of GDP deflators calculated on a 1975 base of 100. A current value projection of GDP is then estimated up to 1985 and the deflators used to translate these current estimates to constant 1975 Jamaican dollars. The estimate of gross fixed residential capital formation yielded using this alternative is much lower than Alternative 1, but we believe that it is more realistic. In computing the above, the 1973 and 1974 data had to be thrown out of the regression model. The model indicated that if the levels of inflation which occurred in those two years were to continue, real GDP would decline over the period instead of grow. The effect of this on housing construction would be disastrous. We can only conclude that if this

recent inflation were to continue, the problem of housing policy formulation would become insoluble.

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