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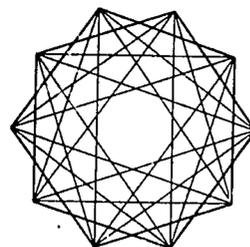
PLANNING AND
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MEETING HOUSING NEEDS

IN SRI LANKA:

A STRATEGY FOR THE FUTURE

October 1982



P A D C O

AN INTERNATIONAL COLLABORATIVE FORMED TO
PROVIDE GOVERNMENTS AND PRIVATE CLIENTS IN
AFRICA, ASIA, LATIN AMERICA AND THE NEAR EAST
WITH INTEGRATED RESEARCH, PLANNING AND MANAGEMENT
SERVICES FOR URBAN AND RURAL DEVELOPMENT

**MEETING HOUSING NEEDS IN SRI LANKA:
A STRATEGY FOR THE FUTURE**

**Prepared for
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C.**

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I. HOUSING NEEDS

A. A Review of the Results of the 1981 Census of Housing and Population

1. **Population versus Housing Stock: 1971-1981** - The picture of the population of Sri Lanka in relation to its existing housing stock that is given in the preliminary release of the 1981 Census of Population and Housing is an encouraging one, both in relation to improvements and additions to existing housing stock and in lower rates of population growth. The following Tables 1 and 2 give a picture of the changes that have taken place during the inter-censal period.

A comparison of the growth of population with the increase in housing stock from 1971 to 1981 shows that the increase in housing stock has exceeded the growth of population. In Sri Lanka as a whole population increased by 17.0 percent between the Censuses of 1971 and 1981 while the number of occupied housing units increased by 26.8 percent.

The urban sector¹ showed a much higher increase in housing stock (21.0 percent) compared to a population increase of 12.2 percent. In the rural sector too the increase in occupied housing units was 33.7 percent compared to the population increase of 23.1 percent.

In the estate sector, however, population declined by 17.7 percent while the number of occupied housing units declined by 8.5 percent. Hence, an improvement in the housing stock position in relation to population has taken place between 1971 and 1981 in all the sectors.

Historically, there was also an improvement in the 1971-1981 period versus the previous inter-censal period, 1963-1971. While the population of Sri Lanka as a whole grew 23 percent from 1963 to 1971, the housing stock grew by only 13 percent.

The improvement in the housing stock *vis a vis* the increase in population is also reflected in the increase in the number of units occupied by one household only: 92.4 percent in 1971 versus 95.2 percent in 1981, and to some extent by a general decline in the occupancy rate, 5.2 persons per unit in 1981 as against 5.6 in 1971. The census notes that these declines are also due to decline in fertility during the period as well as to increase in housing stock. The following section details important changes in the composition of the housing stock that have taken place during the inter-censal period.

2. **Composition of Housing Stock: 1971-1981** - Not only has there been a quantitative improvement in the housing stock since 1971, but there has also been a qualitative improvement in most areas as well. For the country as a whole, Table 3 shows that the permanent housing stock has increased by almost 400,000 units, the percentage going from 35.4 percent in 1971 to 41.8 percent

¹ An urban area is defined in the Census as all Municipal Urban and Town Council Areas.

TABLE 1

GROWTH OF POPULATION AND HOUSING BY SECTORS, 1971-1981

<u>Sector</u>	Population		Occupied Housing Units	
	<u>1971</u>	<u>1981</u>	<u>1971</u>	<u>1981</u>
All Sectors	12,689,897	14,850,001	2,217,478	2,811,406
Urban Sector	2,848,116	3,194,879	421,155	509,459
Rural Sector	8,707,455	10,721,671	1,558,765	2,084,496
Estate Sector	1,134,326	933,451	237,558	217,451

Source: Census of Population & Housing, Sri Lanka - 1981, Housing Tables, Preliminary Release No. 3, June 1982.

TABLE 2

RATES OF INCREASE AND GROWTH OF POPULATION
AND HOUSING BY SECTORS, 1971 - 1981

<u>Sector</u>	Population		Occupied Housing Units	
	<u>% Increase</u>	<u>% Increase Per Year</u>	<u>% Increase</u>	<u>% Increase Per Year</u>
All Sectors	17.0	1.6	26.8	2.4
Urban Sector	12.2	1.2	21.0	1.9
Rural Sector	23.1	2.1	33.7	3.0
Estate Sector	-17.7	-1.9	-8.5	-.88

Source: Census of Population & Housing, Sri Lanka - 1981, Housing Tables, Preliminary Release No. 3, June 1982.

TABLE 3
DISTRIBUTION OF OCCUPIED HOUSING UNITS BY TYPE BY SECTORS

		1971		1981	
		Number	%	Number	%
All Sectors:	Total	2,217,478	100.0	2,811,406	100.0
	Permanent	785,949	35.4	1,173,995	41.8
	Semi-Permanent	1,271,232	57.3	1,457,329	51.8
	Improvised	160,297	7.2	180,078	6.4
Urban Sector:	Total	421,155	100.0	509,459	100.0
	Permanent	264,787	62.9	346,623	68.0
	Semi-Permanent	118,368	28.1	124,013	24.3
	Improvised	38,000	9.0	38,820	7.6
Rural Sector:	Total	1,558,765	100.0	2,084,496	100.0
	Permanent	492,700	31.6	776,450	37.2
	Semi-Permanent	950,252	61.0	1,168,549	56.1
	Improvised	115,813	7.4	139,496	6.7
Estate Sector:	Total	237,558	100.0	217,451	100.0
	Permanent	28,462	12.0	50,922	23.4
	Semi-Permanent	202,612	85.3	164,767	75.8
	Improvised	6,484	2.7	1,762	0.8

Source: Census of Population & Housing, Sri Lanka - 1981, Housing Tables, Preliminary Release No. 3, June 1982.

in 1981. This increase is reflected in all sectors; urban, rural and estate, while the percentage of semi-permanent and improvised stock² has decreased in all sectors as well.

The data on water supply, however, is an exception to the overall trend, showing little or no improvement over 1971. There has been a decrease in the availability of piped water in the estate sector which has not been off-set by the small increases in the urban and rural sectors. As a result, the number of units with piped water has decreased from 20.1 percent to 17.3 percent as shown in Table 4. The main source of drinking water is still from wells.

TABLE 4
PERCENTAGE DISTRIBUTION OF OCCUPIED HOUSING UNITS BY SOURCE OF
WATER SUPPLY BY SECTORS - 1971 AND 1981

Source	All Sectors		Urban Sector		Rural Sector		Estate Sector	
	<u>1971</u>	<u>1981</u>	<u>1971</u>	<u>1981</u>	<u>1971</u>	<u>1981</u>	<u>1971</u>	<u>1981</u>
Piped water on tap	20.1	17.3	45.3	46.5	4.8	5.1	74.7	65.6
Well	68.8	73.1	50.5	48.7	81.9	84.5	15.4	20.4
River, Tank or other source	8.9	7.0	2.0	1.1	11.0	8.5	7.3	5.8
Not Stated	<u>2.3</u>	<u>2.7</u>	<u>2.1</u>	<u>3.7</u>	<u>2.3</u>	<u>1.9</u>	<u>2.1</u>	<u>8.1</u>
TOTAL	<u>100.0</u>	<u>100.0</u>						

Source: Census of Population & Housing, Sri Lanka - 1981, Housing Tables, Preliminary Release No. 3, June 1982.

² Annex I gives a detailed description of the types of building materials used in the definition of permanent, semi-permanent, and improvised housing by sector.

Another area which indicates the quality of the residential environment is the access to sanitary facilities. Units with exclusive use of a toilet have increased overall and in the urban and rural sectors (see Table 5). Only in the estate sector was there a slight decrease in the percentage of units with exclusive use of toilets and a substantial increase in the number of units without toilet facilities.

TABLE 5

PERCENTAGE DISTRIBUTION OF HOUSING UNITS BY TOILET FACILITIES BY
SECTORS - 1971 AND 1981

Sector	Total	Toilet for Exclusive Use		Shared Toilet		No Toilet (Including Not Stated)	
		<u>1971</u>	<u>1981</u>	<u>1971</u>	<u>1981</u>	<u>1971</u>	<u>1981</u>
All Sectors	100.0	45.5	53.0	19.0	13.6	35.5	33.4
Urban Sector	100.0	48.9	56.8	30.7	23.5	20.4	19.8
Rural Sector	100.0	48.5	55.5	9.0	7.9	42.5	36.5
Estate Sector	100.0	20.5	18.4	63.9	45.1	15.6	36.6

Source: Census of Population & Housing, Sri Lanka - 1981, Housing Tables, Preliminary Release No. 3, June 1982.

Qualitative improvements were also achieved in housing occupancy and number of rooms per unit. In addition to the increase in units occupied by only one family, the average number of rooms per housing unit increased from 2.24 in 1971 to 2.47 in 1981. While the quality and number of permanent housing units has increased, more attention needs to be given to improving water supply and sanitation facilities in all housing sectors, particularly in urban areas.

B. Projection of Housing Needs

It was seen from the summary analysis of housing census data that Sri Lanka is not only housing its people more rapidly than population growth, but also that with respect to 1971, it is housing them in better quality structures. Since housing stock also increased more rapidly than population from 1953 to 1963 and subsequently relapsed from 1963 to 1971, the question now is whether the country can continue the 1971 to 1981 trend and how.

In order to attempt to answer this question, while at the same time setting the stage for an analysis of present programs and future trends, an estimate of housing needs by urban and rural sectors³ was undertaken. Given the fact that the Government's present program will be terminating next year and thinking is presently being done in developing a rational approach to future housing needs, it was felt that such an exercise was timely. It must be emphasized, however, that the estimates of housing needs contained Table 6 were based on the current (1981) situation as well as the anticipated growth of population and housing stock. Since both are subject to housing policies and investment patterns of the future, the figures should not be regarded as rigid estimates of future housing requirements. As mentioned above, they are primarily intended to serve as analytical aids for future housing planning and programming. In fact, once more detailed and finalized census figures are available, a more thorough estimate should be undertaken.

The principal assumptions for the projections in Table 6 are as follows:

1. New Demand

- Urban - An urban population growth rate of 1.5 percent per year versus 1.2 percent per year from 1971 to 1981 was assumed. While urbanization in Sri Lanka has been historically low (the urban population actually dropped from 22.4 percent in 1971 to 21.5 percent in 1981 versus 21.3 percent in 1946), a slightly higher growth rate was assumed based on the revival of the urban economy (e.g., the Free Trade Zone) and the ease of transportation to urban areas. To the extent that this rate is high, the estimates are conservative. The projected urban occupancy rate was taken as 6 persons per unit versus 6.3 per unit in 1981.
- Rural - Rural population growth was taken as 2.0 percent versus 2.1 percent from 1971 to 1981, thus, assuming a slight rural-urban migration. The projected occupancy rate was taken as 5 persons per unit versus 5.1 in 1981.

2. Replacement Requirements

- Urban - Replacement of losses to stock due to obsolescence (units built before 1920) and natural disasters was assumed to be 1

³ The estate sector was not included due to its small proportion of overall stock and the fact that it is not the subject of the Ministry of Local Government, Housing and Construction's program.

TABLE 6

ESTIMATED HOUSING NEEDS BY SECTOR

ANNUALLY: 1983-1987, TOTAL: 1988-1992

<u>SECTOR</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>TOTAL 1983-87</u>	<u>TOTAL 1988-92</u>	<u>TOTAL 1983-92</u>
1. URBAN								
a. New Demand	31,473	31,945	32,424	32,910	33,404	162,156	172,100	334,256
b. Replacement	5,290	5,391	5,493	5,597	5,703	27,474	30,000	57,474
c. Backlog	<u>8,552</u>	<u>8,552</u>	<u>8,552</u>	<u>8,552</u>	<u>8,552</u>	<u>42,760</u>	<u>43,000</u>	<u>85,760</u>
ANNUAL NEEDS	45,315	45,888	46,469	47,059	47,659	232,390	245,100	477,490
2. RURAL								
a. New Demand	61,035	62,255	63,500	64,770	66,066	317,626	343,811	661,437
b. Replacement	22,114	22,778	23,461	24,165	24,890	117,408	136,000	253,408
c. Backlog	<u>12,055</u>	<u>12,055</u>	<u>12,055</u>	<u>12,055</u>	<u>12,055</u>	<u>60,275</u>	<u>60,000</u>	<u>120,275</u>
ANNUAL NEEDS	95,204	97,088	99,016	100,990	103,011	495,309	539,811	1,035,120
3. TOTAL NEEDS	<u>140,519</u>	<u>142,976</u>	<u>145,485</u>	<u>148,049</u>	<u>150,670</u>	<u>727,699</u>	<u>784,911</u>	<u>1,512,610</u>

Source: PADCO Estimate, September 1982.

percent of the stock per year with the stock growing at the 1971-1981 inter-censal rate of 1.9 percent per year.

- Rural - One percent of stock per year was also taken for rural areas with the stock growing at 3 percent per year; i.e., the 1971-1981 inter-censal rate.

3. Backlog

- Urban and Rural - The backlog in both sectors was taken to be the total amount of improvised units (urban - 38,820; rural - 139,496), and the reduction of overcrowding to achieve a ratio of one household per unit (urban - 46,693; rural - 101,611). The time frame to achieve these goals was taken as 10 years in the urban sector and 20 years in the rural sector.

Based on the foregoing assumption, Table 6 shows the projected housing needs annually from 1983 to 1987 and for the five year period 1988 to 1992. Total needs over the 10 year period are estimated to be 1,512,510 with about 1,035,120 or roughly 68 percent of the need in the rural sector. This is largely due to the higher population growth in the rural sector, the larger number of houses requiring replacement, and a larger number of households sharing units. In the urban sector, roughly 46,500 units on the average are required per year from 1983 to 1987, while about 99,000 are required annually in the rural sector. These figures can be compared with the estimates of the Marga Institute of an average need of 36,400 units per year in the urban sector and 96,000 units in the rural sector from 1972 to 1980. On the other hand, Kingsley, in studies for the Colombo Master Plan, estimated an average of 50,000 and 100,000 units required in the urban and rural sector, respectively, to the year 2000.

C. Housing Production, 1977 - 1982

1. Public Sector - On the supply side, Table 7 shows the progress by sub-program of the official 1977-82 100,000 unit public housing program. It can be seen that up to the end of August 1982 some 35,000 units were completed under all programs with another 22,175 still under construction. In addition, there have been 18,990 housing loans granted (versus a target of 14,000) up to late 1980 when the program was discontinued. Further, it was learned that, due to a lack of funds, no new schemes will be started but all funds will go towards completion of present projects. If this remains the case, it can be seen from Table 7 that, including housing loans, a shortfall of some 24,000 units will occur under the 100,000 unit program.

A more detailed review of the three main Government programs, i.e., Direct Construction, Aided Self-Help, and Slum and Shanty Upgrading, is contained in the separate Program Evaluation Paper. Suffice it to say here that due to massive cost over-runs and heavy subsidies, primarily in the

TABLE 7

PUBLIC HOUSING PROGRAM

<u>PROGRAM</u>		<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982 (End of August)</u>	<u>TOTALS</u>
Direct Construction	Completed	1,680	2,701	2,789	2,364(a)	471	10,005
	Under Construction	3,360	7,588	10,000	4,482	4,011	
Aided Self Help	Completed	-	537	2,896	1,417	1,496	6,346
	Under Construction	809	10,421	10,464	9,740	9,539	
Model Villages	Completed	25	1,268	3,467	4,201	1,367	10,328
	Under Construction	248	7,724	7,029	3,340	4,449	
Fisheries	Completed	-	-	377	529	523	1,429
	Under Construction	-	270	1,362	858	356	
Electoral Houses	Completed	840 (5 houses)	1,680 (10 houses)	3,360 (20 houses)	330 (30 houses)	660	6,870
	Under Construction	-	-	-	4,710 (30 houses)	3,020	
Total	Completed	2,545	6,186	12,889	5,841	4,517	34,978(b)
	Under Construction	4,417	26,003	28,855	23,130	22,175	
Total Construction							57,153
Housing Loans(c)							18,990
							<u>76,143</u>

Note: (a) Difference of 3,154 due to schemes shown as under construction in 1980 being dropped.

(b) This total figure only includes completed houses in completed schemes. It does not include completed houses in ongoing schemes. The absolute figures of completed houses in both completed and ongoing schemes is approximately 36,403. (Including ASH, M.V., Fisheries and Electoral Houses.)

(c) Discontinued in 1980.

Source: National Housing Development Authority.

Direct Construction Program, the Government in its 1982-86 Public Investment Plan states that priority will be given to aided self-help, sites and services and slum upgrading programs while direct construction and urban development ". . . will largely be left to the private sector." Further, during the same period, Government investment in housing, construction and urban development will be held below five percent of the capital budget (versus 13 percent in 1979). Given the past production figures of the private and public sectors as shown in Table 9, leaving most of the production to the private sector would seem to be the most effective manner to achieve housing goals. The following section contains a short analysis of the growing capacity of the formal private sector while Annex II gives a description of house-building processes found in the informal sector.

2. **Private Sector** - During the early 1970's, few opportunities were available for private building contractors in Sri Lanka. Many contractors went out of business and those remaining usually lacked equipment and experienced personnel to handle large construction projects. As a result, when the present administration assumed office and announced an ambitious construction program for redevelopment, there were justifiable concerns about the ability of the private sector to meet the needs. As a result of five years of stimulation and growth, it is now the conclusion of Government and private officials that the private construction sector has responded well to the needs and will remain strong as long as continued work opportunities are available. Three areas have been investigated to give an indication of the strength of the private construction sector.

- **Number of Contracting Firms** - In 1979 the Sri Lanka Chamber of Commerce worked with the Government to set up the Sri Lanka Construction Consortium which would provide design and construction consultants for Government projects. Contracts were by direct negotiation. In 1979, there were about 50 firms registered with the organization; by the end of 1980, 417 firms were registered. (Table 8). As would be expected, the larger firms are concentrated around Colombo but over 80 percent of the small firms (category D) are outside of Colombo, distributed in most areas of the island.
- The MLGHC has recently decided that the construction industry is sufficiently well established to discontinue using negotiated contracts through the Consortium and to award future contracts through the normal tendering procedures. The Ministry has recently started registry of construction firms to be used for future projects. As of September 1982, the following number of firms were registered.

<u>CATEGORY</u>	<u>NO. OF FIRMS</u>
Works over Rs. 10 million	10
Works between Rs. 5 - 10 million	25
Works below Rs. 5 million	130

TABLE 8
CONSTRUCTION FIRMS REGISTERED WITH THE
SRI LANKA CONSTRUCTION CONSORTIUM
(OCTOBER 1980)

	<u>Sri Lanka</u>	<u>Colombo Area</u>	<u>Other Areas</u>
CATEGORY A Works over Rs. 5 million	27	21	6
CATEGORY B Works not exceeding Rs. 5 million	45	27	18
CATEGORY C Works not exceeding Rs. 1.5 million	101	31	70
CATEGORY D Works not exceeding Rs. 750,000	<u>244</u>	<u>43</u>	<u>201</u>
TOTALS	<u>417</u>	<u>122</u>	<u>295</u>

Source: Sri Lanka Construction Consortium.

- **Employment in the Construction Sector** - Data from the Labor Force and Socio-Economic Survey conducted in 1980-81 indicate a substantial increase in employment by the construction sector. While the total labor force increased by 29.8 percent from 1971 to 1981, the employment in the construction sector increased by over 120 percent. Of the major industrial divisions, this was the highest percent increase except for the relatively small Mining and Quarrying sector. The Statistics Department of the Central Bank of Ceylon also indicates that major increases in construction employment have occurred after 1977. The increase in construction employees registered under the Employees' Provident Fund increased less than 2 percent per year from 1973 to 1977 but increased 4.6 percent in 1978 to 53.6 percent in 1979.

- **Private Sector Housing Production** - While the construction industry was originally stimulated by government contracts, data from the 1981 Census of Population & Housing indicates that private housing construction was also stimulated. Annual production of permanent and semi-permanent housing⁴ from 1977 to 1981 is estimated in Table 9 as the difference between total production and public sector production. Because of discrepancies found in the census tables, the total production figures were adjusted downward to correspond more closely with the total increase in housing stock. As can be seen from the table, production by the private sector increased steadily from 1977 to 1981, resulting in slightly over 7 units produced by the private sector for each housing unit produced by the public sector over the five year period. It should also be noted that almost all housing provided through Government programs was built by private contractors. Most importantly, however, Table 9 shows that heavy Government subsidies (estimated at Rs.3.5 billion at the end of 1981) were received only by a small minority of families (about 12 percent) while the vast majority of households, rich and poor, paid the full cost (sometimes using sweat equity) for their houses and if financed, financed them at market rates.

II. POSSIBLE HOUSING STRATEGY

Before outlining a possible future housing strategy for Sri Lanka, it is perhaps beneficial to highlight the major points made in the previous section and in the separate Program Evaluation Paper.

- The country's housing stock is improving both quantitatively vis-a-vis population growth and qualitatively vis-a-vis permanent construction.
- There is still a large scale housing need cum effective demand in both urban and rural sectors.
- While impressive for the number of units it has produced, the public sector effort has not begun to meet housing needs.
- The private sector has experienced rapid growth since 1978, has substantial capacity, and has produced roughly 88 percent of the total housing built since 1977.
- The informal sector in the form of shanty construction and improvement is active and it has been demonstrated that its resources can be mobilized and channelled into the building of decent housing and viable communities. (See Annex II)
- Present Government shelter programs have a rural bias and are primarily concerned with producing units.

⁴ The production of "improvised" units was not corrected.

TABLE 9
PRIVATE HOUSING PRODUCTION 1977 - 1981

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>TOTALS</u>
1. Total Production of Permanent and Semi-Permanent Houses	57,414	71,195	88,417	89,566	96,456(a)	403,048
2. Housing Production By GOSL Programs	-	2,545	6,186	12,889	8,841	30,461
3. Government Housing Loans	4,239	9,086	5,555	112	-	18,992
4. Total Public Sector Production	4,239	11,631	11,741	13,001	8,841	49,453
5. Total Private Sector Production	53,175	59,564	76,676	76,565	87,615	353,595

(a) Projected for full year from census estimate.

Source: PADCO estimates based on the Census of Population and Housing, Sri Lanka - 1981.
Ministry of Local Government, Housing and Construction.

- In spite of Government and NGO attempts, there is no effective program or programs meeting the needs of the urban poor.
- The present urban housing program is a classic example of high standard-high subsidy public housing and will continue to drain the budget through 1983.
- Affordability of housing is not a factor in the present programs (except in some of the urban housing schemes which are unaffordable by the urban poor).
- Much of the urban poor can often afford more than present monthly payments under present Government programs.
- There is a lack of a formal coordination and communication mechanism within the public sector and between the public and private sectors.

If the team had stayed a longer time, perhaps more problems in the sector would have come to light. Key Government officials, however, are fully aware of the foregoing issues and have formed a Policy Committee to deal with them pursuant to formulating a housing policy and program for 1983 to 1987. The following quotes from some of the papers submitted to the Committee give an idea of the candid thinking occurring among its members:

"Why have the current housing programmes, by and large, failed in providing housing solutions for different income groups? It is now widely accepted that especially the urban programmes were found to be unaffordable by the poorer income groups. Very often the distinction between need and demand for housing does not appear to have been grasped adequately and therefore the result was an excessively heavy subsidy burden on the State. Sometimes even such subsidies did not enable the poorer income groups to gain access to this housing. In fact, the urban programme seems to be a classic instance of the failure of contractor built conventional public housing in Third World situations.

"It is also evident from our performance in the past, that even with resource allocation of this scale, we have failed to make a dent in the problem of housing. It must be admitted that even the 100,000 houses programmed, though undoubtedly the most remarkable achievement in the history of public housing production in this country, has not made a significant contribution to reverse the worsening problem of housing.

"The magnitude of the problem of housing, therefore, demands a completely new approach in the selection of strategies and programmes. The new housing policy should, therefore:

- (a) be designed to increase the capacity of the people to find their own solutions to their problems of shelter;
- (b) be designed to maximise the benefits of investment that has been already made on the existing housing stock;
- (c) should cover public, private as well as informal sectors;
- (d) be viable and implementable; and
- (e) be alive to political realities.

"Next there is the all important factor of affordability, which will have to determine the kind of programmes to a very great extent. Here too, more reliable information than is available at present may be collected through the same sample survey conducted to assess needs."

Given this type of thinking occurring among Government officials, this section is an attempt to give some direction to the strategy formulation process by suggesting types of possible programs and outlining an overall program mix for 1983 to 1987.

A. Types of Programs

1. Urban Sector - As stated in the section on Investment Criteria in the 1982-86 Public Investment Plan ". . . the admission of new projects into the investment programme will be on the basis of strict economic criteria." The Plan goes on to say:

"As a general rule each project must represent the least cost approach to fulfilling the need envisaged and must answer the test of a satisfactory financial rate of return/social and economic rate of return. High capital and . . . heavy building commitments . . . will be deemphasized."

TABLE 10

PROJECTED LEVELS OF URBAN FAMILY INCOME 1983 - 1987

INCOME GROUPS

<u>Quintile</u>	<u>1980 Income Distribution</u>	<u>Average Growth Rate (%) (a)</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
0 - 20%	0 - 482	13.7	0 - 708	0 - 805	0 - 915	0 - 1,040	0 - 1,182
20 - 40%	483 - 909	14.6	709 - 1,368	806 - 1,568	916 - 1,797	1,041 - 2,059	1,183 - 2,360
40 - 60%	910 - 1,391	14.7	1,369 - 2,099	1,569 - 2,407	1,798 - 2,761	2,060 - 3,167	2,361 - 3,633
60 - 80%	1,392 - 2,033	15.6	2,100 - 3,140	2,408 - 3,630	2,762 - 4,196	3,168 - 4,851	3,634 - 5,608
80 - 100%	2,034+	21.4	3,141+	3,631+	4,197+	4,852+	5,609+

(a) Income growth rates based on those from 1973 - 1978 as stated in Economic Review, April 1982, p. 24.

Source: USAID, Shelter Sector Assessment, January 1981, p. 39.

Consumer Finance Survey, 1978, Central Bank of Ceylon.

TABLE 11

URBAN: RANGES OF SHELTER SOLUTIONS BASED ON AMOUNTS AVAILABLE FOR HOUSING

<u>INCOME QUINTILE</u>	<u>1983 INCOME GROUPS</u>	<u>PERCENTAGE OF INCOME FOR HOUSING</u>	<u>MONTHLY AMOUNTS AVAILABLE FOR HOUSING</u>	<u>PERCENTAGE RATES/YEARS OF CAPITALIZATION</u>	<u>TOTAL CAPITAL AMOUNTS</u>	<u>POSSIBLE SOLUTIONS</u>
0 - 20%	0 - 700	10%	35 - 70	3%/30	8,300 - 16,600	1, 2, 3
20 - 40%	701 - 1,370	12%	84 - 164	6%/30	14,000 - 27,400	1, 2, 3, 4
40 - 60%	1,371 - 2,100	15%	205 - 315	9%/25	24,400 - 37,500	1, 2, 3, 4
60 - 80%	2,101 - 3,140	20%	420 - 628	12%/25	40,000 - 59,600	1, 2, 3, 4, 5
80 - 100%	3,140+	25%+	785+	15%/20	59,600+	All

Source: PADCO Estimate, September 1982.

TABLE 12

POSSIBLE LOW INCOME URBAN PROGRAM SOLUTIONS

<u>TYPE OF SOLUTION</u>	<u>ESTIMATED COST</u> <u>(Rs.)</u>
1. Site with communal services	7,000
2. Fully serviced site	14,000
3. No. 1 with shell house	16,000
4. No. 2 with core house	28,000
5. No. 2 with L4 house	41,000
6. No. 2 with M2 house	60,000

Descriptions

1. Access - laterite pathway, water - public stand pipes, sanitation - public toilets.
2. Access - laterite street, water - individual connection, sanitation - individual water seal toilet with septic tank.
3. Shell house of 300 ft.² floor with roof on columns - no walls.
4. Core house 225 ft.² two rooms plus kitchen.
5. L4 house 430 ft.² hall, 2 bedrooms, kitchen.
6. M2 house 570 ft.² hall, 3 bedrooms, kitchen, bathroom.

Source: PADCO Estimate, September 1982.

Based on these criteria and the findings of the previous section, Tables 10 to 12 and Tables 13 to 15 present a least cost approach to a low income, self-financing urban and rural shelter program.

Taking the Committee Paper quote that affordability will have to determine the type of programs at face value, Table 10 is a projection of urban family incomes by quintile from 1983 to 1987. The table is based on a 1980 family income distribution contained in the USAID SSA which in turn was updated from the 1978 Central Bank of Ceylon Consumer Finance Survey. Since more recent data was unavailable to the team, this table should be updated as soon as the Census data on family income and expenditures is available (expected before the end of the year). Based on Table 10, Table 11 calculates affordable packages of shelter solutions based on capitalizing amounts available for housing assuming various interest rates and percentages of income spent on housing. Table 12 lists and describes the possible solutions affordable by the various income groups. It is based on various costs as estimated by the team but does not include land costs as they vary widely from location to location. Thus, unless they are recovered in the future as incomes increase, i.e., on a shared-equity basis, land costs are an up-front capital subsidy.

The set of tables illustrate the following program aspects:

- Using updated income and more accurate cost data, the methodology of working from incomes to arrive at a set of shelter solutions builds in affordability.
- An incremental type of sites and services program can be implemented in urban areas at standards that are affordable by incomes in the lowest quintile of the family income distribution.
- Full recovery of infrastructure and core housing costs can be afforded at nominal or "special" interest rates.

An essential program component that is not contained in the Tables is a housing improvement loan fund at below market interest rates that would allow beneficiaries to upgrade and expand their solutions. Presently only the Electoral Housing Program contains such a provision.

Since the costs of solution type 1 were based on the slum improvement schemes, these standards could also be used in an expanded slum and shanty improvement program combined with a housing loan fund. As mentioned in the Program Evaluation Paper, however, organizational and administrative aspects have to be addressed in order to increase the capacity of the SSD. Similarly, organizational/administrative aspects have to be developed within the NHDA to restructure its urban housing program from one of high subsidy-high standard housing for the few to one of low subsidy-low standard for the many.

2. **Rural Sector** - A similar methodology shown in Tables 13, 14 and 15 was used to illustrate a possible rural housing program. Although standards are already quite low in the government's Rural Housing Program, Table 15 estimates the costs of various serviced sites and core housing solutions which are at even lower standards. In fact, NHDA is already experimenting with a core house solution. Table 14 shows that all of the listed solutions are affordable at the terms shown by families down to the 40th percentile, with most affordable by families in the second quintile. Thus, with a lowering of standards even in the rural areas, it seems programs can be designed that could recover infrastructure and housing costs at nominal interest rates. While a housing loan fund would also be an essential component of this program, it is expected that self-help techniques in materials manufacture and labor would keep improvement/expansion costs low. In this program also, land costs are a subsidy as in the present program. As mentioned above, perhaps as incomes increase, land costs could be recovered on an equity-sharing basis, i.e., the Government recovers its equity in the land by adding it onto monthly payments 10 to 15 years hence, or, in the case of lease-hold, adjusting land rents periodically.

B. Possible Program Mix: 1983 to 1987

Tables 16 and 17 are an attempt to estimate the total average annual capital required to meet the annual housing needs estimated in the first section. Although the data is preliminary and the Team did not have enough time in country to thoroughly investigate costs and obtain updated income distribution data, the tables are, nevertheless, illustrative of the total capital required to satisfy housing needs in the urban and rural sectors. The allocations of needs by income quintile in Table 16, however, is rather arbitrary as is the division of production between the public and private sectors in Table 17. While such allocations should be done in consultation with Government officials and, ideally, based on a housing market study⁵ to distinguish between effective demand and need, the allocations in Table 17 were done keeping in mind the previous production by the urban and rural public and private sectors (Tables 7 and 9), the production ratio of 1 to 7 public to private units, and the estimated average amount that should be available to the sector from the Public Investment Plan 1983 to 1986.

Table 17 shows that to meet total needs, the public sector would have to produce 19,000 units per year - roughly 2.7 times that produced from 1978 to 1982 (not counting housing loans); and the private sector would have to produce 126,500 per year compared to an average of 70,000 per year from 1977 to 1981. If the two sectors maintain past production (77,000 per year), a shortfall of about 5,000 units per year would occur. However, if the public sector completes production of the Urban Housing Program and switches to sites and services/core housing type schemes illustrated in Tables 12 and 15, production could increase substantially. Similarly, production could increase in the private sector if an island-wide loan program were combined with a program to facilitate land assembly, acquisition and development.

⁵ PADCO has recently undertaken work studies in Guatemala and Mauritius in order to estimate the effective demand and paying capacity for low cost solutions such as serviced sites, cane houses, etc.

TABLE 13

PROJECTED LEVELS OF RURAL FAMILY INCOME: 1983-1987

<u>QUINTILE</u>	<u>1980</u>	<u>AVERAGE GROWTH RATE (%)</u>	<u>INCOME GROUPS</u>					
			<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1992</u>
0 - 20%	0 - 346	13.7	0 - 509	0 - 579	0 - 658	0 - 748	0 - 850	0 - 1,615
20 - 40%	347 - 697	14.6	510 - 1,048	580 - 1,201	659 - 1,376	749 - 1,577	851 - 1,807	1,616 - 3,572
40 - 60%	698 - 1,017	14.7	1,049 - 1,535	1,202 - 1,750	1,377 - 2,019	1,578 - 2,316	1,808 - 2,656	3,573 - 5,273
60 - 80%	1,018 - 1,605	15.6	1,536 - 2,479	1,761 - 2,866	2,020 - 3,313	2,317 - 3,830	2,657 - 4,428	5,274 - 9,140
80 - 100%	1,606+	21.4	2,480+	2,867+	3,314+	3,831+	4,429+	9,141+

Sources: USAID, Shelter Sector Assessment, January 1981, p. 39.
Consumer Finance Survey, 1978, Central Bank of Ceylon.

TABLE 14

RURAL: RANGES OR SHELTER SOLUTIONS BASED ON AMOUNTS AVAILABLE FOR HOUSING

<u>Quintile</u>	<u>1983 Income Groups</u>	<u>% of Income for Housing</u>	<u>Monthly Amounts Available for Housing</u>	<u>% Rates/Years or Capitalization</u>	<u>Total Capital Amounts</u>	<u>Possible Solutions</u>
0 - 20%	0 - 509	8%	20 - 40	3%/30	4,750 - 9,500	1,2
20 - 40%	510 - 1,048	10%	51 - 105	6%/30	8,500 - 17,500	1,2,3
40 - 60%	1,049 - 1,535	15%	157 - 230	9%/25	18,700 - 27,400	1,2,3,4
60 - 80%	1,536 - 2,479	20%	307 - 496	12%/25	29,150 - 47,100	A11
80 - 100%	2,480+	25%+	620+	15%/20	48,400+	A11

Source: PADCO Estimate, September 1982.

TABLE 15

POSSIBLE LOW INCOME RURAL PROGRAM SOLUTIONS

<u>TYPE OF SOLUTION</u>	<u>ESTIMATED COST</u> <u>(Rs.)</u>
1. Site with communal services	5,000
2. Site with individual services	10,000
3. No. 1 with shell house	13,500
4. No. 2 with core house	21,500
5. No. 2 with L4 house	32,000
6. No. 2 with M2 house	47,000

Descriptions

1. Access - laterite pathway, water - public well, sanitation - public toilets.
2. Access - laterite street, water - individual well, sanitation - individual water seal toilet with septic tank.
3. Shell house of 300 ft.² floor with roof on columns - no walls.
4. Core house 225 ft.² two rooms plus kitchen.
5. L4 house 430 ft.² hall, 2 bedrooms, kitchen.
6. M2 house 570 ft.² hall, 3 bedrooms, kitchen, bathroom.

Source: PADCO Estimate, September 1982.

TABLE 16

ALLOCATION OF HOUSING NEEDS

Quintile	URBAN			Total	RURAL			Total
	New Demand (32,400/yr.)	Replacement (5,500/yr.)	Backlog (8,552/yr.)		New Demand (63,500/yr.)	Replacement (23,500/yr.)	Backlog (12,000/yr.)	
0 - 20%	6,500	2,500			12,700	10,000		
	<u>6,500</u>	<u>2,500</u>	2,600	14,000	<u>12,700</u>	<u>10,000</u>	4,000	29,700
20 - 40%	6,500	2,000	2,335		12,700	7,500	3,000	
	<u>6,500</u>	<u>2,000</u>	4,935	11,000	<u>12,700</u>	<u>7,500</u>	7,000	24,200
40 - 60%	6,500	1,000	1,300		12,700	6,000	3,000	
	<u>6,500</u>	<u>1,000</u>	1,335	8,500	<u>12,700</u>	<u>6,000</u>	1,050	19,700
60 - 80%	6,500		1,000	6,500	12,700		1,000	12,700
	<u>6,500</u>		1,000	6,500	<u>12,700</u>		<u>1,000</u>	12,700
80 - 100%	6,500			6,500	12,700			12,700
				<u>46,500</u>				<u>12,700</u>
								<u>99,000</u>

Source: PADCO Estimate, September 1982.

TABLE 17

ILLUSTRATIVE ANNUAL HOUSING PROGRAM: 1983-1987

1. URBAN SECTOR

INCOME QUINTILE	AFFORDABLE COST PER UNIT (1985)	AVG. NO. OF UNITS REQUIRED PER YEAR		TOTAL COST (RS. MILLIONS)	
		PUBLIC	PRIVATE (Loans)	PUBLIC	PRIVATE
0 - 20%	17,000	3,000	11,000	51	187
20 - 40%	28,000	2,000	9,000	56	252
40 - 60%	41,000	1,000	7,500	41	308
60 - 80%	67,000	-	6,500	-	436
80 - 100%	80,000+	-	6,500	-	520
SUB-TOTAL		6,000	40,500	148	1,700+

2. RURAL SECTOR

0 - 20%	10,000	7,000	22,700	70	227
20 - 40%	17,000	5,000	19,200	85	326
40 - 60%	30,000	1,000	18,700	30	561
60 - 80%	51,000	-	12,700	-	648
80 - 100%	60,000 +	-	12,700	-	762+
SUB-TOTAL		13,000	86,000	185	2,524+
TOTAL		<u>19,000</u>	<u>126,500</u>	<u>Rs. 333</u>	<u>4,224+</u>

Source: PADCO Estimate, September 1982.

Table 17 also shows that the annual average investment by the public sector (based on costs projected to 1985 at 10 percent per year) is about Rs.333 million. As mentioned previously, however, these costs do not include land. If land cost were introduced, average annual investment would perhaps be nearer to Rs.500 million. This is comparable to the roughly Rs.550 per annum from 1983 to 1986 shown in the Public Investment Plan for Aided Self Help/Electoral Housing, Land Acquisition and Development, and New Projects. Thus, while more in depth study is required, Table 17 taken as a first approximation shows that by lowering costs and decreasing subsidies, it is possible for the public sector to meet a portion of low income shelter needs within planned budget allocations. However, since the major portion of need will continue to be met by the private sector, both formal and informal, this is where public sector funds will have the greatest leverage, i.e., through the provision of land, infrastructure, and financing.

ANNEX I

BASIS OF CLASSIFICATION OF HOUSING UNITS INTO PERMANENT, SEMI-PERMANENT AND IMPROVISED TYPES

<u>Material of Wall</u>	<u>Material of Roof</u>	<u>Material of Floor</u>	<u>Type of Housing Unit</u>
1. Cement blocks, stone, bricks or cabook	Tile, asbestos or metal sheets	Cement or wood	Permanent
2. - do -	- do -	Mud	Semi-Permanent
3. - do -	Cadjan or palmyrah	Cement, wood or mud	Semi-Permanent
4. Mud	Tile, asbestos or metal sheets	Cement	Permanent
5. - do -	- do -	Wood or mud	Semi-Permanent
6. - do -	Cadjan or palmyrah or straw	Cement, wood or mud	Semi-Permanent
7. Wood	Tile, asbestos or metal sheets	Cement, wood or mud	Semi-Permanent
8. - do -	Cadjan or palmyra or straw	Cement	Semi-Permanent
9. - do -	- do -	Wood or mud	Improvised
10. Cadjan, palmyrah or straw	Any material	Any material	Improvised

Source: Census of Population & Housing, Sri Lanka - 1981, Housing Tables, Preliminary Release No. 3, June 1982.

ANNEX II

A. House Building in the Informal Sector

This section briefly examines shanties as being the only part of the urban sector that can truly be said to fall outside the bounds of existing legalities and regulations governing other types of urban housing. Shanties emerged originally as temporary dwellings put up by victims of natural disasters. Over time, new migrants and other homeless people squatted on the land and put up dwellings. Some were able to put up several units and to rent them out to others. Shanties in Colombo are located mostly on low-lying marshy land, on the banks of rivers and canals and on road reservations.

The Slum and Shanty Unit of the UDA estimates that around 125,000 (21.3 percent of the Colombo Municipal Council's 1981 Census population of 585,776) presently live in shanties, with an average occupancy rate of between 6 and 7 persons per unit, i.e., about 20,000 units. This is approximately 52 percent of the 38,820 improvised units in the urban sector island-wide compared to Colombo's 40 percent of the urban population. Table 3 also shows that while the percent of improvised units decreased island-wide from 7.2 percent to 6.4 percent, the absolute number grew by about 20,000. To the extent that the construction of improvised dwellings can be equated with the informal sector, the figures show that the informal sector is quite active, especially in the rural sector.

While a number of very detailed and thorough socio-economic and physical studies of Colombo shanty settlements have been carried out, little is written about the procedure by which people acquire or construct this type of housing, i.e., how much it costs them for building materials, where they obtain them, how they transport them, and where they get the finance or credit required to build. Yet, in planning an upgrading project, it is certainly important to know how much of an investment of time, labor and money these families have already put into resolving their shelter problems. Knowing how they manage their existing housing expenses would presumably give a realistic picture of the affordability of future scheme alternatives and the likelihood of cost recovery.

In order to obtain an idea of the informal construction process, the Team conducted several interviews with settlers in the Kirillapone shanty settlement presently being upgraded by Save the Children. The following are some of the facts that we were able to gather:

1. Source of Typical Shanty Building Materials and Costs
 - Planks - (outer walls, partitions) - used packing crates from Salu Sala, Paper Corporation or Building Materials Corporation; also

surplus, used material from building sites and demolished buildings. Cost: Rs.17.50 per crate, containing 6 4-foot planks. One long-sided wall of a shanty would take 30 6-foot planks (15 planks high).

- Cardboard Cartons - (inner partitions, patching outer walls) - Paper Corporation, Salu Sala. Cost: Rs.1-5 per carton.
- Iron Sheets (roofing) - used tar drums bought from a company and flattened; pieces bought from building sites; odd bits and pieces given by employers. Cost Rs.40 per tar drum (these used to cost Rs.4).
- Cadjan (roofing) - brought into the city for sale from the "coconut triangle" north of Colombo. Costs: Rs.100 - Rs.125 per 100 plaited coconut leaves. Needs replacing every year (although one woman said she had replaced her roof at a cost of Rs.500 four years ago).
- Wattle and Daub (walls) - clay for this type of wall material was formerly dug from the canal bank and cost nothing. This material has not been used in recent construction and appears in the walls on only the older dwellings.
- Hessian gunny sacks - (inner partitions) - these are obtainable from retailers and wholesalers of (for example) rice. Cost: Rs.10 per sack (used to be given away free).
- Miscellaneous Building Materials (old doors, bamboo scaffolding poles, odd bits of wood, used iron window grills and bricks) - obtainable from building sites at various prices. Notices are put up at building sites advising the public that materials are available for sale. Though it was not possible to cost a recently constructed shanty unit, Save the Children staff estimated a sum of Rs.750 - 1,000 per unit. One settler told us she had bought her house four years ago for Rs.600 - this was a relatively small unit, with cadjan roofing and wattle and daub walls. It is surprising to see how little of these building materials can be scavenged or had for free.

2. Transport of Building Materials - As much as possible is transported by the settlers themselves, otherwise handcarts are hired at approximately Rs.10 per load.

3. Rental Expenses - Costs of building or buying a shanty unit have been discussed above. Monthly rentals range from Rs.15-65, and there is often a deposit of Rs.100-200 to pay upon moving in. The tenant is responsible for the maintenance of the unit.

4. Finance and Access to Credit - Very little is known about the intricate workings of the informal credit system. Even the Marga Institute, in

their study of The Informal Sector of Colombo City (1979), was unable to obtain a very clear picture, owing to their informants' reluctance or inability to tell them. However, Marga offers a useful table which is reproduced below:

**PERCENTAGE DISTRIBUTION OF SOURCES OF BORROWINGS
BY INFORMAL SECTOR PARTICIPANTS**

<u>Sources of Borrowings</u>	<u>%</u>
Friends	46.17
Relatives	31.19
Progressional Money Lenders	8.59
Formal Institutions	<u>14.05</u>
TOTAL	100.00

Source: The Informal Sector of Colombo City, Marga Institute, 1979, p.75.

Inhabitants of Kirillapone settlement certainly incur debts: in one case, a young man borrowed Rs.1,000 from a friend at 10 percent per month interest; others borrow at times of illness, deaths and family ceremonies. This affects their ability to pay their monthly loan installments to Save the Children. On the other hand, the woman who bought her house for Rs.600 obtained the money by participating in a "cheettu" - an informal revolving credit association where each member paid in Rs.100 per month and a different member took "the pot" every month. Many people must also borrow to buy their building materials or to pay their initial deposit upon taking a rental unit.

5. **Construction - Timing and Methods** - While the Team was unable to get an idea of how long it would take to assemble the materials to construct a shanty unit, the actual construction itself would not take more than a few days at most. Family members, friends and neighbors help to put up the house.

In conclusion, while this has been a simple sketch of some of the processes involved in the informal building sector, some important points emerge for future examination. Firstly, it is clear that there is a lively market in recycled, used and sub-standard building materials that has come about due to the present demand for housing. As much of these materials are obtained in the formal market (government or private stores), shanty construction is

obviously contributing to the formal economy. It is also clear that considerable time, effort and money is put into shanty construction. The precariousness of shanty dwellers' financial situations, and the non-availability to them of low-interest credit, point to the need to develop realistically affordable shelter alternatives which will not drive them into debt, and the need to develop alternative credit sources at more reasonable interest rates.