

SETTLEMENT UPGRADING IN KENYA:

**THE CASE FOR ENVIRONMENTAL PLANNING
AND MANAGEMENT STRATEGIES**

Michael M. Majale

Centre for Architectural Research and Development Overseas

Department of Architecture

Faculty of Law, Environment and Social Sciences

University of Newcastle upon Tyne

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*To the Memory of
My Late Grandmother
Mrs Florence Grace Swai*

SETTLEMENT UPGRADING IN KENYA:

THE CASE FOR ENVIRONMENTAL PLANNING AND MANAGEMENT STRATEGIES

Abstract

Environmental degradation from problems of the 'Brown Agenda' is an everyday reality in Kenya's rapidly growing urban centres; and it is the low-income majority who are most affected. Deficient water supply and sanitation, inadequate solid waste disposal, and poor drainage are among the foremost problems that characterize informal settlements in which indigent urbanites are compelled to live. Analysis of environmental problems at settlement and household level can provide vital information about the appraisive environmental perceptions and cognitions of inhabitants of informal settlements, as well as their satisfaction with the infrastructural services to which they have access and their housing conditions, in general. Such information is essential to the formulation of apposite strategies for sustainable improvement of environmental conditions in informal settlements.

Based largely on a comprehensive review of theoretical perspectives on the urban housing question in the South, international policy responses and experiences with settlement upgrading, this thesis seeks a better understanding of the socioeconomic and physio-environmental dynamics of urban low-income informal settlements and the formulation and implementation of upgrading policies. A comparative analysis of two *majengos* in Kenya—one of which has been upgraded while the other has not—serves to contextualize the study.

The central thesis in the present study is that settlement upgrading is the most rational approach to improving the residential circumstances of the urban poor majority in Kenya. Applying a fundamentally liberal approach, the development of pragmatic opportunities is discussed, and pursuable policies and programmes, which are realistic and implementable, for effective environmental planning and management of urban low-income informal settlements in Kenya are proposed.

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Chapter One

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1.1 Introduction

This introductory chapter, the *Prologue*, opens with some prefatory comments about real world research—specifically policy and housing research—and some remarks about the objectives and findings of the *Urban Housing Survey 1983: Basic Report* (RoK, 1986a) and the *Kenya Population Census 1989. Analytical Report: Volume X—Housing* (RoK, n.d.). A succinct statement of the cardinal issue that the present thesis aims to address follows. The key research questions and objectives of the study are thereafter specified, and the significance of the research for theory and policy elaborated. The conceptual and personal basis of the study are also elucidated. Finally, the structure of the dissertation is outlined.

1.2 Real World Research: Policy and Housing Research

Colin Robson, in his monograph entitled *Real World Research*, posits that the proposition for emphasis on real world research is "as much about an attitude of mind as an invitation to come out of the laboratory closet" (Robson, 1993:10). This, he expounds, is reflected in a number of dichotomies which advance, for instance, pure or basic research rather than applied research, or theoretical research as opposed to policy research.

Theoretical research is concerned primarily with causal processes and explanations. The factors (or variables) considered are frequently purely theoretical or abstract constructs for which operational definitions and indicators are developed. The intended audience for theoretical research is mainly academics. Contrariwise, the ultimate concern of policy research is knowledge for action. Policy research encompasses a greater diversity of research, including theoretical research in many cases, and descriptive research, as well as reviews of how existing policy is working, extending sometimes into formal evaluation research. The intended audience for policy research includes policy-makers, decision-takers, client groups, etc. (Hakim, 1987). The two main distinguishing features between policy research and theoretical research, as identified by Hakim (1987:172) are:

first, an emphasis on the substantive or practical importance of research results rather than on merely 'statistically significant' findings, and second, a multi-disciplinary approach which in turn leads to the eclectic and catholic use of any and all research designs which might prove helpful in answering the questions posed.

Policy research, if well designed, can not only be of value to those concerned with determining policy, but may also be of interest to one or more academic disciplines (Robson, 1993).

The fundamental concern of development policy in the South is how to improve the living standards of the vast majority of the population who earn less than the average per capita income. There is need, therefore, to focus policy interest on interest groups, i.e., on specific sectors of the population, particularly on poverty bands and subsistence groups (Ward, 1993). Indeed,

development policy and analysis have come to rely increasingly on primary research at the community or household level (Devereux and Hoddinott, 1992a).

Practically all key official indicators in the South, however, are based on arithmetic mean estimates; consequently, major policy issues concerned with poverty, underemployment and generally unregistered informal activities are imperfectly understood. Researchers consequently face critical problems in studying the marginal groups—the poor, unemployed and underemployed, inadequately-housed or unsheltered, illiterate, malnourished, diseased, etc.—in whom policy-makers should be most interested, as they are rarely identified or included in any official records or surveys (Ward, 1993). Moreover, with the masses of people living in deplorable and unquantified social conditions, the nature of social problems in the South is more intractable than in the North, and creates major difficulties for social inquiry (Bulmer, 1993a).

There are well-established disciplinary divides of housing research, but it is principally concerned with the interaction of housing outcomes, processes and influences and broader social, economic and political systems. An economic interest arises with respect to investment and consumption; and, since housing both reflects and shapes social trends influencing individual opportunities and societal well-being, sociology and social policy have had a lot to comment about housing systems and policies. Housing issues may also feature in the agendas of politicians and the electorate because management and investment in housing raise important issues about the roles and styles of community, city-level and national governance (MacLennan and Bannister, 1995).

The deficiencies of focusing research on particular segments of housing markets, especially in order to understand and explain processes of urban development and as a guide to policy, have however become evident. To provide the basis for housing policies which address the needs of all income groups and which focus public sector resources on sector-wide policies rather than, or in addition to, specific projects, research must endeavour to understand urban housing markets more generally, both at national and city levels (Rakodi, 1992a).

The Urban Housing Survey of Kenya (RoK, 1986a) was undertaken to evaluate the effectiveness of a number of policies, strategies and programmes aimed at alleviating housing problems that the Government had adopted.¹ The main strategies included sites and services and settlement upgrading, and rental and tenant purchase housing.² It was also intended to provide accurate information and statistical data on the housing need that would streamline procedures and

¹ The Survey was conducted by the Central Bureau of statistics of the Ministry of Economic Planning and National Development and the Housing Department of the Ministry of Works, Housing and Physical Planning.

² All these types of projects were included in the first, second and third urban programmes financed jointly by the World Bank and the Government, and the small towns and private sector programmes financed with loans from USAID (RoK, 1986).

mechanisms for the planning and implementation of future housing programmes and projects. Specifically, the stated objectives of the survey were as follows (RoK, 1986a:2):

- To provide information on characteristics of urban housing stock in terms of quality, value and quantity.
- To improve the existing data regarding the demand for and supply of housing to facilitate the preparation of future housing projection and programmes.
- To make estimates on affordability and willingness of people to pay for these houses and services and hence measure the actual demand.
- To determine the percentage of each input to the overall cost of housing.

The *Urban Housing Survey 1983: Basic Report* (RoK, 1986a), a product of the survey, was patently deficient as it did not contain fundamental information and statistical data on housing essential for comprehensive policy formulation. In particular, it failed to underline the housing situation of low-income majority subsisting in informal settlements which are proliferating at an alarming rate in Kenya's rapidly growing urban centres.

Perhaps even more unfortunate, were the results of the 1989 Population And Housing Census, carried out on a *de facto* basis to determine: "the size, composition and distribution of the population; the levels and trends of fertility, mortality, migration and urbanisation; and **to obtain information on housing**, education, and employment" (RoK, n.d.:xi, emphasis mine). Hence, the *Kenya Population Census 1989. Analytical Report: Volume X—Housing* (RoK, n.d.), which presents analysis of data on housing conditions and amenities collected during the 1989 census, failed to redress most of the deficiencies of the *Urban Housing Survey 1983: Basic Report*, which was a primary reason for its compilation!

Factual knowledge of housing is a requisite, but insufficient, condition for effective housing policies and practices. Discernment of the diversity of housing-related conditions in different urban centres is also obligatory, and there is further need to formulate policies and conduct research which is sensitive to locally specific circumstances (Blauw and Deben, 1989). As regards improvement strategies for urban low-income informal settlements, appropriate solutions require more environmental awareness than more conventional but expensive alternatives (McGranahan, 1993).

1.3 The Issue in Brief

Urban poverty is not only a matter of individual income: it is part of the physical and spatial arrangement of urban settlements. And housing represents a highly conspicuous dimension of

urban poverty (Gilbert and Gugler, 1992; McKee, 1994; Roberts, 1978; Smith, 1996). The urban housing situation in the overwhelming majority of countries in the South, including Kenya, is deficient in the extreme, not only quantitatively but also qualitatively. The housing circumstances have been precipitated by the rapid urbanization which the countries have undergone, and primarily affect poor, disadvantaged and vulnerable groups who constitute a considerable proportion of the urban population in the South.

The urban poor in the plurality of Southern cities and large towns, including those in Kenya, are thus constrained to seeking accommodation in what are variously referred to as unplanned/ illegal/ extralegal/ squatter/ informal/ spontaneous/ unauthorized settlements, shanty towns or slums, and also by a host of other names in different countries. While these terms may be highly appropriate in a number of cases, they may also be potentially delusive in others. Nevertheless, the diverse nomenclature used is indicative of a paramount feature of such residential areas which have developed in different cultures and political contexts, and which are also the most ubiquitous manifestation of the phenomenal rate of urbanization in the South, namely their extreme heterogeneity with respect to formation, physical fabric and inhabitants (Potter, 1985).

Much of the scholarly endeavour to analyse the housing conditions of the urban poor in the South has focused on typologies of urban low-income settlements, identification of settlement characteristics, and generalization of apposite strategies to deal with the problems, as noted by Hwang (1987). Most of the earlier work was, however, either based on experience in the North or propounded in the Latin American context.³ Some literary application has continued to address the characteristics of urban low-income informal residential neighbourhoods and their classification (e.g., Burgess, 1985; Salas, 1988; Yeh, 1987), although, in many cases, the economic, social and political characteristics have been studied in isolation from the wider urban system (Rakodi, 1992a). But there still remains a dearth of information relating to sub-Saharan Africa, mainly because, as O'Connor (1983) observes, informal settlements used to be relatively uncommon in the region.

The notion of "self-help" which has long been considered typical of informal settlements which provide poor urban dwellers in the South with affordable alternatives to conventional low-income public housing is now being increasingly criticized for being a misrepresentation of reality, an inappropriate basis for housing strategies for the majority of urban households, and ideologically dubious (Rakodi, 1992a). Under the conventional "international approaches" to addressing the housing problems of the urban poor in the South in the form of site-and-services, settlement upgrading and reformulation of building and planning standards, it is predicted that if

³ See, for example, Leeds (1969; 1974), Lewis (1966), Mangin (1967), Peattie (1974); Stokes (1962), and Turner (1967; 1968; 1969a; 1969b; 1972).

upgrading interventions are introduced households will, through self-help, improve their dwelling conditions and, ultimately, the overall environment of the settlement. This however presupposes that the households concerned are owner-occupiers. But as an increasing number of writers have noted (Hardoy and Satterthwaite, 1989, Gilbert, 1983; 1987; 1993b; Gilbert *et al.*, 1997; Harms, 1997; Kumar, 1992), the actual situation is that, increasingly, in numerous informal settlements in Southern cities, the ratio of tenants to landlords has risen considerably in recent years.

The vast majority of informal settlements in Kenya are, in point of fact, characterized by wide-scale commercialization and landlordism. The commodification of housing by not only large scale producers in the formal sector but also petty capitalists in the informal sector, which has supplanted traditional self-help initiatives in informal settlements and transformed housing development therein, has been documented by several observers (Amis, 1984; 1987; 1988; 1990b; 1996; Chana and Morrison, 1973; Etherton, 1971; Hake, 1977; Lamba, 1994; Macoloo, 1988; 1994b; Majale, 1985; 1993; MDC, 1993; Memon, 1982; Morrison, 1974; Racki *et al.*, 1974; Ross, 1973; Syagga and Malombe, 1995; Syagga *et al.*, 1989). Other studies evince an amalgamation of small and larger-scale landlordism in some informal settlements (Andreasen, 1989; Moughtin *et al.*, 1992).

The prevalent commercialization and landlordism in informal settlements in Kenya is in contradistinction to the Turnerian notion of self-build (Turner, 1967; 1968; 1969; 1976), in which the urban poor are also seen as the true planners and builders of cities. Rather, this thesis holds, the development and proliferation of informal settlements is more consistent with Marxist theories and perspectives of the urban economy and housing expounded by Rod Burgess (1977; 1978; 1982; 1985a; 1992) and others (Connolly, 1982; Gilbert, 1986; Harms, 1982; Ward, 1982c), whereby capitalist societies see in self-help housing systems "the economic and ideological means necessary for the maintenance of the status quo and the general conditions for capitalist development" (Burgess, 1982:57).

It is not only urban poverty and the inability of the Government to meet the low-income housing demand that are responsible for the rapid expansion of rental housing in informal settlements in Kenya: strong socio-economic/political/market forces also underlie the housing demand and supply mechanisms in the major urban centres. In Nairobi, in particular, political backing and access to formal sector credit have enabled large-scale capital to supersede local small-scale landlordism in informal settlements. Thus, this thesis further holds that, given the prevailing economic situation and budgetary constraints, as well as the social and political circumstances, the urban poor in Kenya will, of necessity, have to live in rental accommodation in informal settlements for the foreseeable future. Hence critical measures have to be taken to address their housing plight.

Settlement upgrading along with site-and-service projects have been presented as "the prime instruments for improving the housing conditions of the urban poor" (UNCHS, 1987a:179). But the orthodox paradigm of settlement upgrading which assumes owner-occupation, as mentioned above, has definite limitations in the Kenyan context for it ill-matches the situation in the plurality of informal settlements in which a majority of residents are tenants. If the residential circumstances of the urban poor in Kenya are to be improved through settlement upgrading, there is critical need for reconceptualization in the fields of applied research, policy formulation and future planning for urban low-income housing development.

Traditional planning approaches which have been practised in Kenya have excluded informal settlements where the urban poor majority in Kenya reside. It is therefore imperative that they be replaced by realistic urban management approaches. It is the contention of this thesis that through innovative approaches to urban management, housing in informal settlements, which falls outside the category of formal housing as it does not conform to existing planning regulations and building by-laws, can be regularized so that it can make a recognized contribution to the housing stock.

The study proposes to demonstrate that the upgrading of (rental) housing in informal settlements, through the implementation of appropriate environmental planning and management strategies, represents the most pragmatic approach that can currently be adopted to improve the housing situation of the urban poor in Kenya.⁴ In sum, the study will set out to accomplish this through an appraisal of the urban housing situation in Kenya (Chapter Two); a review of the development of informal settlements as a pervasive phenomenon in urban areas in the South (Chapter Three); a comprehensive discussion of settlement upgrading as a strategy for improving the housing conditions of the urban poor compelled to live in informal settlements in the South (Chapter Four); an analysis of housing and environmental conditions in two informal settlements—one of which has benefited from upgrading interventions while the other has not—in two urban centres in Kenya (Chapter Six and Seven); and, finally; recommendations for housing policy and an agenda for action (Chapter Eight).

1.4 Key Research Questions and Objectives

The present study seeks to shed new light on a question of fundamental and long-standing interest to urbanists in general: How can the residential circumstances of the inadequately housed urban poor in the South be improved? The research will hence address itself to a series of themes focused on informal settlements which house the urban poor in the plurality of countries in the South, including Kenya.

⁴ An earlier study conducted by the author (Majale, 1985) found that settlement upgrading was a practicable approach which could help alleviate the housing problem of lower income groups in Nairobi.

The objectives of the study may be specified through the following key questions:

- (i) What are the current international responses to the urban housing issue in the South; in particular, to the ubiquitous phenomenon of urban low-income informal settlements?
- (ii) What is the *status quo* of urban housing in Kenya (vis-à-vis, urban housing policy, need/demand, and supply); in particular, in so far as housing for the low-income urban majority is concerned?
- (iii) What are the (socioeconomic/physio-environmental) characteristics of urban low-income informal settlements in Kenya, and to what extent are they relevant to upgrading interventions?
- (iv) Are householders in informal settlements satisfied with the housing and basic infrastructure to which they presently have access?
- (v) Are the appraisive environmental perceptions and cognitions of owner and tenant householders in informal settlements similar, and are they equally (dis)satisfied with their prevailing residential circumstances?

The objectives of the study can thus be framed as follows:

- (i) To present an overview of international policy responses to the urban housing issue in the South.
- (ii) To provide an overview of the urban housing situation in Kenya, especially the housing circumstances of the low-income majority.
- (iii) To provide insight into the present state of housing, infrastructure and environmental conditions in urban low-income informal settlements in Kenya, and the residents' perceptions of the environment.
- (iv) To set forth a (methodological) proposal of classificatory analysis of urban low-income informal settlements in Kenya that can provide a more systematic basis for strategy formulation, programme options and project design than subjective judgement, and inform the implementation of upgrading interventions.
- (v) To make recommendations for urban housing policy, and legislation and standards for housing and infrastructure; and also to propose planning and management structures that

better ensure that the objectives of upgrading through the provision of environmental infrastructure in urban low-income informal settlements are met.

The study is also intended to illustrate the utility of follow-up studies of upgrading projects.

1.5 Justification and Significance of the Study

In complex policy arenas, such as low-income housing, like other researchers (Marshall and Rossman, 1995), this author believes that information is required to assist policy makers understand the problem, identify areas they can influence, and see the implications of policy intervention in real life. Approaches to policy analysis which involve appropriate research methods can benefit policy formulation in a number of ways, including the following: (i) they can identify the unanticipated outcomes of policies; (ii) they can help "debug" policy—they find inherent inconsistencies and conflicts in policies; (iii) they can identify how policies are changed as they are implemented in various levels; and (iv) they can help find the "natural solutions" to problems—the solutions that people devise without policy intervention (Marshall, 1987, cited in Marshall and Rossman, 1992).

Government policy has long held that the urban housing deficit should be solved by market mechanisms. This policy which is promoted by bilateral and multilateral aid agencies, includes the recognition and ultimate legitimization of informal settlements that will facilitate the operation of the informal private sector therein (Amis, 1988). Hence, there are several questions concerning the implementation of settlement upgrading in Kenya that need to be researched in a real-world setting. There are also certain subtleties of the policy implementation process that need to be investigated to understand fully what is happening. Findings from material research can clarify important issues, describe implementation processes, and identify constraints to more effective policy outcomes.

The recent increase in empirical studies of informal settlements makes this an apposite time to reflect on what has already been researched, what has been learned and what gaps remain. Given the prevailing state of affairs in which the overwhelming majority of low-income households live in single rooms rented in informal settlements which are proliferating rapidly in Kenya's main urban centres, it is imperative to understand the actual residential circumstances of those who live in these neighbourhoods. Indeed, these are rarely understood by those charged with the responsibility of formulating policies that apply to the development of informal settlements.

A central argument of the present thesis is that optimal upgrading interventions cannot be devised without a clear understanding of the characteristics of the informal settlements. Without such studies the formulation of improvement strategies for informal settlements will remain

uninformed, and upgrading will be dependent on conjectural notions of informal settlements. Ultimately, the study intends to make recommendations for purposes of policy formulation, and programme and project choice, which will be more "technical, objective and informed, and less subjective, political and ideological" (Willis and Tipple, 1991:258).

1.5.1 Significance for Theory

The fact that such a large population can subsist and grow under conditions of extreme deprivation in Kenya's cities and secondary towns has important implications for the development of urban low-income housing. The proliferation of informal settlements providing rental accommodation in the form of one-room dwellings with a minimum of environmental infrastructure indicates that these forms of residential areas are successful and respond to some sort of objective social need in the absence of any other viable alternative.

Thus far, however, studies of informal settlements in Kenya have been primarily concerned with the location and characteristics (housing conditions, infrastructure and services, access, facilities, organizations, and economic activities and sources of income) of informal settlements, and/or socioeconomic characteristics of residents (Lamba, 1994; Malombe, 1993; MDC, 1993; Nduati, 1989; Syagga and Malombe, 1995; Syagga *et al.*, 1989).

The development of theory occurs by incremental advances and small contributions to knowledge through well-conceptualized and well-conducted research (Marshall and Rossman, 1995). The present study is intended to fill in some of the gaps in the literature and also shed new light on informal settlements in Kenya, thereby contributing to the expansion of previous theory. The present study will expand the research base by incorporating a physio-environmental dimension, and expand our understanding of the characteristics of urban low-income informal settlements in Kenya. Because the data collection is in a different setting, with a different population, and at a different time, the study will certainly contribute to fundamental knowledge about informal settlements in Kenya. The analysis and presentation of data on the relationship between tenure status (owner/tenant) and levels of satisfaction with environmental infrastructure in an upgraded and a non-upgraded *majengo* will not only contribute to the foundational literature on informal settlements, but also will more finely tune theoretical propositions for settlement upgrading. The analysis of how owner and tenant householders' satisfaction with the infrastructural services to which they have access and their appraisive environmental perceptions and cognitions, and the identification of the advantages and drawbacks of particular environments is not only novel, but also insightful.

The study is thus intended to present some alternative views of various issues which are central to the theory and practice of settlement upgrading. Although small-scale research, which is

indeed what the present study represents, has its limitations, "it is also able to make a significant contribution to understudied areas" (Blaxter *et al.*, 1996).

1.5.2 Significance for Policy and Practice

As mentioned above, the vast majority of poor urban households in Kenya are presently accommodated in rented one-room dwellings in informal settlements that are proliferating at an unprecedented rate in the main urban centres. While the phenomenon of urban low-income informal settlements is by no means unique to Kenya, the prevalent capitalist rental market operating within informal settlements probably is. The long-run dynamics of the commercialization of informal settlements and the market mechanisms that have transformed the urban low-income housing market have significant implications for policy. The existence of a predominantly tenant population in informal settlements is of a particular import to the formulation of:

comprehensive housing policies with respect to urban housing, slum upgrading, improving infrastructure for informal housing, and reconstruction of the dilapidated residential infrastructure in urban areas. (RoK, 1997:166)

The study is intended also to provide a better understanding of tenant households' perception of living conditions in informal settlements, their satisfaction with the basic infrastructure to which they have access, and their priorities with regard to environmental upgrading of the settlements in which they live.

Research in low-income housing has featured consistently in Government housing policy and strategies (RoK, 1987). Informed experts have similarly reiterated the need for further research in the area of informal settlements (Malombe, 1995; 1996). The present study responds to some of these calls. Certainly, the study is not intended to be simply another "scholastic exercise in conceptual clarification" (Cornelius, 1974:13), and it is hoped it will not be dismissed as such, because a better understanding of informal settlements is crucial for the formulation of more appropriate policies and strategies.

1.6 Conceptual and Personal Basis of the Study

The conceptual and personal basis for this study first developed between 1983 and 1985, when I was pursuing a postgraduate degree in the Department of Urban and Regional Planning at the University of Nairobi. A study of Pumwani, the *majengo* in Nairobi, that I undertook marked the beginning of my interest in the residential circumstances of the low-income majority in Kenya's rapidly growing urban areas. My interest in low-income housing grew considerably when I was

subsequently employed in the Housing and Building Research Institute (HABRI) at the University of Nairobi.⁵

The present study was largely conceived as an extension of the findings of the above study, and is a reflection of my personal and professional interests. In the present research thesis, I was interested in employing my experience as a research fellow (architect-planner) in addressing a number of issues with respect to environmental planning for urban low-income informal settlements in Kenya. The questions for research in the present thesis originated from real-world observations and dilemmas, and have developed from the interplay of my own direct experience, tacit theories, and evolving scholarly interests. The study was conducted from an interactionist perspective utilizing a range of methods, which are elaborated in Chapter Six (*Research Design and Methodology*). In this manner, I was able to exploit my personal experience as a research fellow with my sociological experience of informal settlements. It was my intention to extend not only my earlier work in this field, but also to make a contribution, albeit humble, to policy research on settlement upgrading and environmental planning and management of urban low income informal settlements in Kenya.

1.7 Structure of the Thesis

The main body of the dissertation is structured into eight chapters which have been ordered to follow broadly the philosophy of ends and means. Two appendices are also included. The first—*Appendix One: The Urban Housing Situation in the South*—is actually fundamental to the thesis and should as such be regarded as an integral part of the text.

As outlined in the Introduction, this preliminary chapter begins with a brief mention of real world research—specifically policy and housing research—and some remarks about two national housing surveys that have been undertaken in Kenya. The cardinal issue that the thesis aims to address is elaborated, the key questions that the research will address are enumerated and the objectives of the study are specified. The need for the present research is justified, and the significance of the study for theory as well as policy and practice is spelt out.

Chapter Two, *The Urban Housing Situation in Kenya*, presents the context within which settlement upgrading and environmental planning and management strategies are considered as a pragmatic approach to improving the residential circumstances of the urban poor in informal settlements in Kenya. Urbanization and demographic trends and the *status quo* of rural and urban poverty in Kenya are examined, and urban housing need, demand and supply are

⁵I joined HABRI, which was formerly known as the Housing Research and Development Unit (HRDU), as a Junior Research Fellow (Architect-planner) in November, 1985.

evaluated. Government policy responses to the urban housing question (both prior to and after independence) are reviewed; the constraints to an effective urban housing supply elaborated; and the performance of the formal housing sector appraised. The chapter concludes with a brief mention of the informal sector and its role in the supply of housing for the urban poor in Kenya.

The themes discussed in Chapter Three and Four (as well as in Appendix One) are intended primarily as a grounding for the substantive discussions in the latter chapters. Chapter Three opens with a brief look at housing and urban poverty in the South, followed by an overview of the development of the phenomenon of informal settlements in the South. A review of some of the concepts, theses and classificatory analyses of informal settlements in the South that have been advanced follows, together with various improvement strategies in terms of theoretical perspectives and operational relevance. Chapter Three also examines cursorily various studies of informal settlements in Kenya that have been undertaken and concludes with a proposal for classificatory analysis of urban low-income informal settlements in Kenya

Chapter Four—*Settlement Upgrading: The Pragmatic Solution?*—is not intended to give a full account of the emergence of settlement upgrading policies and a comprehensive assessment of their success in improving the residential circumstances of the urban poor in the South. Rather it reviews the theory and concepts of upgrading, and then presents, using comparative evidence from various countries in the South to reduce the danger of parochialism, issues and experience in settlement upgrading. The chapter closes with but a few remarks about settlement upgrading in Kenya, this because settlement upgrading has not been widely adopted as a strategy for improving the housing and environmental conditions in informal settlements which are proliferating in Kenya's cities and secondary towns.

Chapter Five explains and rationalizes the research design, methodology and execution.

Chapters Six and Seven constitute the basis for much of the original contribution of the present thesis. Chapter Six comprises chiefly of a comparative study of the quality of houses and dwelling units in two informal settlements in Kenya, Swahili Village in Machakos and Bondeni in Nakuru, and of the socioeconomic characteristics of owner and tenant households in the two neighbourhoods. The former *majengo* has been upgraded while the later has not. The attention in Chapter Seven is focused on a comparative analysis of owner and tenant households' access to, and (dis)satisfaction with, basic infrastructure and services in the two *majengos*; their appraisive environmental perceptions and cognitions are also evaluated. As such, Chapter Seven is designed to investigate whether the implementation of the upgrading project in Bondeni has had any significant impact on environmental conditions and the residential circumstances of owner and tenant households within that settlement, and whether they are better-off than their opposite numbers in Swahili Village which has not benefited from any upgrading interventions.

Chapter Eight winds up the reasoning for settlement upgrading and, more specifically, the case for environmental planning and management strategies as the most pragmatic approach to ameliorating the residential circumstances of the urban poor compelled to live in informal settlements in Kenya. The implications of the study's findings for future policy and strategy formulation and project design aimed at improving housing and environmental conditions in informal settlement are articulated, and an agenda for action is expounded. Gaps which may open up avenues for fruitful future research are also highlighted

Appendix One presents a brief exposition of urbanization in the South and the consequent urban housing situation. The evolution of self-help housing theories is examined and the self-help debate reviewed. International policy responses to the urban housing question are discussed; with particular emphasis on the development of World Bank housing policies as well as the continuum of United Nations Conferences and evolution of United Nations agencies' principles, strategies and programmes relating to human settlements. Much of the discussion in Appendix One is of fundamental relevance to most chapters in the main body of the thesis.

Throughout the dissertation, footnotes are opportunely used in order to (i) provide additional information and details which, if placed in the body of the dissertation, would disrupt the flow of its arguments and (ii) to cross-reference information (thus reducing to a minimum the need for repeating information in different chapters/sections).

Chapter Two

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2.1 Introduction

A paramount problem in the majority of cities and large towns in sub-Saharan Africa is presently that of housing, particularly for the urban poor. The primary cause of this plight has been the rapid rate of urbanization and the scale and speed of urban population increase. Although Africa remains the least urbanized region in the world, with only 30% of its population presently living in urban areas, the trend in that direction has been extremely rapid (UNCHS, 1987a; Stren and White, 1989). Most of the countries with the fastest growing populations are now in Africa, and the annual population growth rate for the whole region is estimated to be 4.5% (UNCHS, 1996a). Growth rates of over 2.2% per annum, equivalent to more than a doubling of population every 35 years, are expected to continue until after 2020 (UNCHS 1987a). In the year 2000, Africa's urban population will constitute 42% of the continent's total (Towfighi, 1987), and over 52% of the continent's population will live in towns and cities by the year 2020 (UNCHS, 1987a).

Kenya, too, is characterized by the dynamic situation of rapid urban population growth and unprecedented rates of urbanization.¹ Manifold factors have been cited for this phenomenon, including the relaxation of restrictions on internal migration on attainment of independence and subsequent strong rural-urban migratory movements, the diminishing supply of arable land, and a multiplicity of factors falling under the general rubric of "bright city lights" (i.e. wage employment, government services, and other modern amenities) (Morisson, 1974:227). This course has been prevalent for several decades, and it does not look like reversing in the immediate future.

The present chapter begins with a summary account of the pattern of urbanization in Kenya, and the prevailing rural and urban poverty. An analysis of the demographic dimension of the urban housing challenge in Kenya—in terms of housing need, demand and supply—is presented, followed by a review of housing policies, strategies and programmes that have been formulated and adopted to address the urban housing issue. The constraints to an effective supply of low-income urban housing are elaborated, along with the legal and regulatory framework within which urban housing development takes place. The performance of the formal housing sector in supplying housing for the urban low-income majority is appraised and, finally, the informal sector and its role in the provision of housing for the urban poor in Kenya is mentioned briefly.

2.2. Urbanization and Demographic Trends in Kenya

The earliest official estimate of the indigenous population in Kenya was made in 1897 by Sir Arthur Hardinge, who numbered it at 2.5 million. Reliable data on urban growth, however, date

¹The paradox, according to the Economic Survey 1996 (RoK, 1996), is that despite the rapid rate of urbanization, the proportion of the urban population remains small—Kenya remains one of the least urbanized countries in sub-Saharan Africa.

Table 2.1: Distribution of urban centres by number and population size, 1948-1989

SIZE OF URBAN POPULATION	1948	1962	1969	1979	1989
100,000+	1	2	2	3	6
20,000 - 99,999	1	2	2	13	21
10,000 - 19,999	2	3	7	11	19
5,000 - 9,999	3	11	11	22	32
2,000 - 4,999	10	16	25	42	61
Total	17	34	47	91	139
Total urban population ('000s)	276	671	1,080	2,309	3,864
Percentage of Total population	5.1	7.8	9.9	15.1	18.0

Source: Economic Survey 1996 (RoK, 1996:37)

back to the population census conducted in 1948, which defined an urban centre as a gazetted settlement with a minimum of 2000 inhabitants.² The census evinced that 5.1% of the country's population lived in 17 urban centres. By 1962, the number of urban centres had doubled to 34, and the urban population increased to 7.8% of the total population. The annual average urban growth rate from 1948 to 1962 was 6.3%.

In 1963, Kenya attained its independence: the restrictions imposed on the indigenous population by the colonial government were lifted, and a rapid rise in rural-urban migration ensued. This is reflected in subsequent annual rates of urban population increase. The share of urban population rose from 7.8% in 1962 to 9.9% in 1969 to 15.1% in 1979; and in 1989 it increased to 18.0% living in 139 urban centres (RoK, 1996).³

Discrepant projections for the urban population to the year 2000 and beyond have been made. According to Central Bureau of Statistics estimates (1985), the urban population in the year 2000 will be 11.4 million. Alternatively, Sessional Paper No. 1 of 1986 (RoK, 1986b) gives urban projections based on two growth rates: low (7.1% per annum) and high (8.0% per annum). In the event of the former, the urban population will rise to 8.9 million in the year 2000, while in the case of the latter it will reach 10.21 million. The Urban Housing Survey 1983 (UHS) (RoK, 1986a) estimates the urban population in 2000 at 5.15 million, while the 1997-2001 Development Plan projects that in 2001 it will be 7.4 million.

The most alarming aspect of urban population growth in Kenya is its rapidity rather than the relative sizes of the urban and rural populations (RoK, 1986a).⁴ According to the UHS, the primary factors to which the population growth can be imputed are:

²The traditional characteristics of an urban settlement are a population above a stipulated size, a high density of population, and a predominance of non-agricultural activities (Mohan, 1994). During the 40 years of Kenya's census history (1948-1989), the definition of the minimum population for an urban area has remained 2,000 persons (RoK, 1996).

³See Obudho (1993a) for a more detailed exposition of the urbanization process in Kenya.

Table 2.2: Indicators of Kenya's population structure and projections

	1979 (Census)	1989 (Census)	1995 (Estimates)	2001 (Projected)
Total population (millions)	16.2	23.2	27.5	31.9
Growth rate (% p.a.)	3.9	3.4	2.9	2.5
Average population density (per sq. km)	26	37	43	49.9
Urban population (millions)	2.3	3.9	5.3	7.4
Total fertility rate	7.8	6.7	5.4	4.8

Source: National Development Plan 1997-2001 (RoK, 1997:131)

- *Natural population growth*: Available data is inadequate for purposes of accurate analysis of urban demographic trends, but the urban growth rate is considered to be less than that in rural areas due to lower birth rates. Urban mortality figures, however, are also lower, hence the positive contribution to the natural population growth rates.
- *Rural-urban migration*: Rapid urban population growth is, latterly, believed to have been caused primarily by rural-urban migration.⁵ But direct empirical evidence to support this presumption is lacking.
- *Boundary expansion*: Urban centres are delimited by boundaries specified by local authorities. These boundaries have sometimes had to be revised because population expansion, desire to generate additional income or need to supply additional services to people. Hitherto rural populations are thus brought into local authorities' jurisdictions; hence the increase in urban population.
- *Emergence of new market centres*⁶: As a result of the above factors, an increasing number of market centres are evolving with a concomitant increase in urban population; market centres with appropriate infrastructure are Kenya's fastest growing urban centres.

The urban population was initially concentrated in the two largest urban centres: Nairobi, the capital and primate city, and Mombasa, the principal port. Statistical evidence, however, indicates that the intermediate towns are now also growing rapidly. Indeed, the development of urban centres constitutes a principal component of the Government's policy of achieving a rural-urban balance of development through an even dispersion of economic and developmental activities in all parts of the country based on a spatial dimensions approach (RoK, 1994).⁷ The

⁴Lamba (1994) contends that the focus on population growth obscures other more important issues. While the exceptionally high population growth rate and the uncontrolled growth of Nairobi are a legitimate concern, inappropriate emphasis on population growth conveniently diverts attention from issues of equity and social justice.

⁵According to earlier estimates, rural-urban migration accounted for approximately 60% of the total growth of urban population (Erkelens, 1991). The 1994-1996 Development Plan (RoK, 1994) likewise attributes the rapid urban population growth to a continuing high rate of rural-urban migration.

⁶In order to ensure a more equitable and rational geographical distribution of infrastructural facilities and social services in terms of population distribution over the country, the Government formulated a pattern of Designated Service Centres. In increasing order of importance these are: a local centre for a catchment population of 5,000; a market centre for 15,000; a rural centre for 40,000-50,000; and an urban centre for 120,000-150,000 (Ministry of Lands and Settlements, 1978).

⁷A number of policies, under various designations such as "growth centre", "gateway town", "service centre" and "rural trade and production centre" policies, have been adopted since independence. The District Focus for Rural Development Strategy (RoK, 1984) was purposed not only

accelerated urban population growth rate has led to a corresponding increase in demand for urban services. But the supply of urban services has not kept pace with the increasing need in most urban centres. Accessibility to employment, commercial and social services, and other urban facilities has also been affected by the rapid urban change.

While capital requirements have increased with the expanding urban population, approved public expenditures have represented an absolute decline in available resources per urban resident (Syagga, 1991; 1992a). Thus, in recent years, there has been a total imbalance between the rapid urban population growth rate and the supply of urban services and amenities. Services that are particularly inadequate include low-income housing, water supply, sewerage, solid waste disposal, health care, education and transportation.

The administration of urban areas is, for the most part, the responsibility of the Ministry of Local Government and the local authorities. Within the Kenyan framework, the Ministry has the primary responsibility of overseeing the operation and financing of the local authorities. It is also required to disseminate and interpret central government policies to local authorities, in addition to giving them technical assistance. The Ministry has progressively moved from playing a regulatory role to one of actually supporting and strengthening the local authorities in the development process.

2.3 Rural and Urban Poverty in Kenya

The standard of living in Kenya, at least in the main urban centres, is relatively high compared to the average of other sub-Saharan African countries.⁸ But prevalent poverty, high unemployment,⁹ and the growing income inequality make the country one of economic, as well as geographic, diversity (Todaro, 1992). In economic and development terms, the early 1990s marked the worst period in Kenya's history. Real GDP growth declined from 4.3% in 1990 to 2.1% in 1991 and was almost zero in 1992 and 1993. This poor performance is imputable to several factors including: structural rigidities, lack of monetary discipline, non-reinforcement of banking regulations, and reduced donor assistance, as well as drought. However, real GDP grew by 3% and an estimated 5% in 1994 and 1995 respectively. While favourable weather certainly helped, the economy additionally benefited from the Government's reforms. Although the nation

to arrest concentration of the urban population in the major urban centres by diverting emphasis towards the intensified growth of secondary towns and smaller urban centres, but also to decentralize economic planning to the 44 administrative units within the country designated as districts.

⁸Certainly, in the early 1980s, Kenya's social indicators were evidently more favourable than those of most countries in the region, and there was further progress. However, many indicators stagnated in the early 1990s. (Pape, 1996; World Bank, 1996).

⁹Todaro (1992) notes that with an unemployment rate already at 30% and rising population, Kenya faces the major onus of employing its burgeoning labour force in the 1990s. Yet only 10% of seekers obtain jobs in the modern industrial sector. The remainder must work in the agricultural sector (the principal economic sector) where wages are low and opportunities are scarce; find jobs in the self-employed sector; or join the masses of the unemployed. Interestingly, he makes no mention of the informal sector.

realized some improvement in its social indicators, the lack of sustained per capita income growth resulted in continued poverty for an increasing number. Moreover, benefits of good health and education did not accrue to all (Pape, 1996; World Bank, 1996).

Approximately 50% of Kenya's rural population and 30% of urban dwellers live in absolute poverty—unable to meet their minimum requirements for food and essential non-food items.¹⁰ While this proportion has remained relatively constant in recent years, the rise in the overall number of 'absolute' poor is daunting. So too is the extent of the poverty: the gap between the minimum needs of the poor and their actual disposable income has increased radically. The persistent disparities between rural and urban areas,¹¹ and between the poor and the non-poor,¹² are a paramount consequence of the urbanization process the country has undergone. The rural poor are predominantly subsistence farmers¹³ and households that derive their income mostly from the informal sector; the urban poor are either unemployed or engaged in the informal sector. The primary cause of continued income poverty in Kenya is the absence of sustained per capita income growth due to low investment and an inefficient parastatal sector (Pape, 1996; World Bank, 1996).

2.4 Housing Need, Demand and Supply

Although it is customary to preface discussions on housing in the South with some overall assessment of needs, and most analyses of housing problems have been carried out to satisfy housing needs, various writers have highlighted the disadvantages in this approach.¹⁴ The computation of these needs usually involves demographic data on population growth rates and household formation, together with an assessment of existent dwelling units in terms of their numbers, size, condition and facilities.¹⁵ Data of this nature, however, are usually unreliable and, whilst relatively easy to compile, provide very little useful information. Moreover, the

¹⁰Citing a World Bank report released in May 1997, Redfern (1997) affirms that Kenya has one of the highest rates of people living in absolute poverty: 50.2% of all Kenyan's live on less than US \$1 a day in real purchasing terms.

¹¹O'Connor (1991) observes that there is far more rural poverty than urban poverty in sub-Saharan Africa since 70% to 75% of the population lives in a rural environment and average incomes are higher in urban areas. However, urban poverty is increasing at a faster rate as the urban population is increasing by 5% to 7% a year, compared with an average of 2% in the rural areas, and because urban incomes are falling in real terms. Moreover, people are more aware of poverty in urban areas because affluence is visible close by.

¹²According to a World Bank report (released in 1997) cited by Redfern (1997), Kenya has the second highest gap between rich and poor in the world. The richest 10% of the population have 47.7% of national income compared to only 1.2% for the poorest 10%. Only Brazil has a bigger income gap: the top 10% control 51.3% of the wealth. Countries in the North (e.g. US, Britain and France) return figures of 20-25%.

¹³Ironically, the majority of the rural poor live in the central and western parts of the country which have the highest agricultural potential. For many years there was adequate land, but demographic trends have finally started to take their toll. The size of land holding has decreased continuously, in many instances reaching levels which are no longer capable of sustaining a household (Pape, 1996).

¹⁴See, for example, Drakakis-Smith (1981; 1988) and Rakodi (1992).

¹⁵However, Merret (1984:319) contends that: "the concept of housing need has become a muddled pool as a result of so many writers using the term in different, inconsistent and ambiguous ways". UN (1976, cited by Rakodi (1992) defines housing need to include demographic, replacement and vacancy elements. Alternatively, Jørgensen (1977:27) holds that housing need is best defined "like the need for nutrition – in objective physical terms and expressed as an average or a minimum for an individual or a family".

Table 2.3: Summary of housing needs (1983-2000) by urban category

<u>CITY/TOWN</u>	<u>HOUSING NEED</u>	<u>YEAR</u>		
	<u>FACTOR</u>	<u>1983-1988</u>	<u>1989-1990</u>	<u>1991-2000</u>
NAIROBI	New population	70, 440	32,810	187,020
	Depreciation	26, 395	10,558	52,790
	In-adequates	17,715	7,086	35,431
	Total	114,550	50,454	275,241
MOMBASA	New population	13,300	5,800	33,700
	Depreciation	18,915	7,566	37,830
	In-adequates	1,286	514	2,572
	Total	33,501	13,880	74,102
KISUMU	New population	8,240	2,910	17,000
	Depreciation	1,325	530	2,650
	In-adequates	8,868	3,547	17,737
	Total	18,433	6,987	37,387
MEDIAN TOWNS	New population	31,028	14,828	91,314
	Depreciation	6,755	2,702	13,510
	In-adequates	6,991	2,796	13,981
	Total	44,774	20,326	118,805
OTHER TOWNS	New population	36,845	17,559	96,071
	Depreciation	9,685	3,874	19,370
	In-adequates	11,430	4,572	22,861
	Total	57,960	26,005	138,302
ALL TOWNS	Total	269,218	117,652	643,837

Source: Urban Housing Survey 1983 Basic Report (RoK, 1986:25)

calculation of housing needs, by whatever method, produces estimates that are so daunting in relation to the physical and fiscal capacities of most Southern countries, that housing investment is discouraged rather than encouraged (Drakakis-Smith, 1981). Hence, in recent project planning and research, the focus has been on assessing effective demand for housing (Rakodi, 1992).

2.4.1 Need

The UHS affirms that housing need may be interpreted in several ways but, for purposes of the report, defines housing 'need' simply as:

the total number of dwelling units required by a given population without any reference to their ability to afford (RoK, 1986:16)

The UHS elaborates that housing need comprises several heterogeneous elements, including: (a) the need emanating from net additions to the population whether through natural increase or migration; (b) the need emanating from obsolescence or demolition of dwelling units; and (c) the backlog of housing need comprising of people who are either inadequately housed or without housing of any kind at the present time.

Table 2.4: New and total number of urban and rural households for 1995-2000, indicating ascertained housing needs

	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
<i>URBAN</i>						
New	105,000	112,000	120,000	126,000	140,000	150,000
Total	1,582,000	1,694,000	1,814,000	1,940,000	2,080,000	2,230,000
<i>RURAL</i>						
New	108,000	107,000	107,000	106,000	104,000	102,000
Total	4,055,000	4,162,000	4,269,000	4,375,000	4,479,000	4,581,000
<i>NATIONAL</i>						
New	213,000	219,000	227,000	232,000	244,000	252,000
Total	5,637,000	5,856,000	6,083,000	6,315,000	6,559,000	6,811,000

Source: After Erkelens, 1991

Noting that several models are available for assessing housing need, the UHS adopts a simple one for purposes of the report, based on the assumption that new housing units are required to cater for new households; replace depreciating units; and replace the existing inadequate stock. It points out, however, that additional contributory factors which should be included in the assessment of housing needs have been omitted in the model presented in the report, including overcrowding and upgradable dwelling units (Table 2.3).

Alternatively, Erkelens (1991:51) in his formulation of an assessment model for housing needs and demand in Kenya, holds that the determining factors include socio-economic, cultural and climatological circumstances. These factors constitute the basis for "felt needs", which are based on the requirements of individuals. Felt needs exist independently of the market and the government and, for the lower-income groups, are commonly below the level of the "ascertained needs", which are established by third parties like governments in order to ensure certain minimum acceptable standards. Building legislation, including housing standards, is based on ascertained needs (Erkelens, 1991). Table 2.4 gives Erkelens's estimates of ascertained housing needs for 1995 to 2000. These can be compared to the annual housing needs presented in the 1997-2001 Development Plan (RoK, 1997:165).

The main deficiency in the use of simple estimates of housing need in housing policy formulation is that they do not take into consideration resource availability at either the national or individual level.¹⁶ Defining housing need in terms of normative planning standards unrelated to the cost of housing thus means, in most cases, that at both the national and urban level the supply of acceptable units can never be sufficient in volume to satisfy total estimated need, while at the

¹⁶Indeed, the 1989-1993 Development Plan (RoK, 1989) affirms that experience gained through the implementation of housing development schemes indicate that a rationale for low cost housing based on the principal of 'housing needs' rather than ability to afford a house has resulted in higher income groups acquiring ownership instead of intended beneficiaries.

Table 2.5: Annual housing needs and investments in 1997 and 2001

		<u>1997</u>	<u>2001</u>
Units:	Urban	101,500	127,700
	Rural	287,400	303,600
	Total	388,900	431,300
New units (000s): ^a	Urban	96,600	123,200
	Rural	234,000	25,500
	Total	330,600	378,700
Investments (Kshs Billion): ^b	Urban	27,620	39,040
	Rural	32,760	38,660
	Total	60,380,	77,700
Formal Finance (Kshs Billion): ^c	Urban	16,570	23,420
	Rural	13,110	15,460
	Total	29.67	38,890
Infrastructure Investments (Kshs Billion):	Urban	3,350	26,180
	Rural	22,840	25,470
	Total	26,180	29,700
Notes: a-New units only: gross densities of 1,500 per hectare are assumed b-1995 prices c-Assumes 60% investment from formal sources in urban areas			

Source: After 1997-2001 Development Plan (RoK, 1997:165)

individual level numerous urban households cannot afford to pay for the housing units provided (Rakodi, 1992).

2.4.2 Demand

As mentioned above, there has been an increasing tendency away from 'need'-oriented calculations to those based on 'demand' owing to the liabilities inherent in the former. Effective demand is related principally to an ability to pay for the commodities offered and is determined by factors such as housing prices and construction rates, and household income and expenditure patterns.¹⁷ If these computations were used primarily as a basis for identifying the differing requirements of various socioeconomic groups, then this would be of utility in the decision-making process. Unfortunately experience does not corroborate this—effective demand is more frequently used as a justification for directing public housing towards the middle income groups in order to avoid rental deficits (Drakakis-Smith, 1981). The original and still the most common estimates of effective demand are based on "rule of thumb" methods in which it is assumed that urban households can afford to pay a certain proportion of their income for housing.¹⁸ Again, the deficiencies of this approach have been gradually recognized (Rakodi, 1992).

¹⁷The World Bank (1993) elaborates that housing demand is determined by demographic conditions, such as the rate of urbanization and new household formation, and additionally by macroeconomic conditions that affect household incomes. It is further influenced by property rights, by the availability of housing finance, and by government fiscal policies, such as taxation and subsidies, especially those subsidies targeted for the poor. The housing industry and its circle of actors (realtors, developers, lending institutions, contractors, manufacturers, suppliers, etc.) are primarily concerned with the effective demand for housing (Harms, 1972).

¹⁸Most low-income housing projects are designed around a formula which relates housing costs to beneficiary incomes (Lee, 1985). It has usually been assumed by the World Bank and most other housing institutions that a household can or should spend a maximum of between 15% and 25% of their income—a proportion within this range has frequently been used as a guideline in the estimation of project affordability (see

The UHS (RoK, 1986a:26) defines housing demand simply as "housing 'need' coupled with willingness and ability to pay", maintaining that the definition underscores the importance of correlating the proportion of monthly income that most households are not only willing, but also are able to spend on housing.¹⁹ It further holds, at the expense of over simplification, that details on three factors are required for a proper understanding of housing demand: (i) household income; (ii) proportion of income devoted to housing; (iii) monthly cost of housing. Knowledge of housing demand is essential not only at the project design level, but especially at the level of national housing policy.

"Effective demand", as defined by Erkelens (1991:52) in his housing needs and demand assessment model for Kenya, is "demand at existing prices which can be met"; willingness and the ability to pay for housing are mainly dependent upon income and other factors. Effective demand is thus economically determined—when people have more to spend, they will demand housing of a higher standard.²⁰

In addition to the usual market determinants, the demand for housing in Kenya is affected by several special conditions, including: (i) the urban population growth rate; (ii) the great housing deficit; and (iii) the pattern of income distribution whereby conventional housing is beyond the affordability of most households (RoK, 1970). The present housing situation mitigates against the majority of the urban population. Over 40% of Nairobi's residents cannot afford a minimum conventional dwelling, while up to 80% of the inhabitants in other urban centres with less resources than Nairobi are marginalized in obtaining access to housing and other services (Syagga and Malombe, 1995).

While housing needs can be stated in fairly definite terms, it is more difficult to estimate effective demand for new housing as this depends on the prices at which houses can be

Chapter Four) (Bamberger *et al.*, 1982). Laquian (1983) confirms that although housing designers have traditionally believed that, on average, low-income housing participants can devote 20-25% of their monthly income to housing, in practice, ratios ranging from 8-50% have been found in a number of projects. England and Alnwick (1985) confirm the formulation of housing policy and programmes in Kenya based on the assumption that households can afford 20-30% of their income for housing. Guidelines produced by the National Housing Corporation in 1976 similarly assumed that 20% of income may be used for housing, and the World Bank-funded Second Urban Project in Kenya was based on the assumption that housing will take up 30% of income. Regarding this, the UHS remarks that the use of a universal proportion (20% to 25%) of a household's income as being the amount they would be willing to spend on housing is not well supported by empirical evidence. It has been found to vary significantly, commonly ranging between 10% and 50%, depending on such variables as the general level of national development, income, the relative cost of housing and whether the units are owner-occupied or rented. The UHS consequently advises against the use of a single rule of thumb of affordability as a basis for establishing project standards, project costs and project beneficiaries. See also Lee (1985) for a detailed discussion on misinterpretation of affordability, and England and Alnwick (1982) for an analysis of how much low-income households can afford for housing.

¹⁹Jørgensen (1977) asserts that, rather than need expressed in some physical terms, it is the ability and desire of individuals to change their existent housing situation, i.e., demand, that can be measured. He adds that to say "demand" is "need" expressed in terms of purchasing power is simplistic and does not suffice for those concerned with economic and physical development plans.

²⁰World Bank (1993) affirms that spending for housing, like that for most other commodities, increases with household income in every urban society.

constructed, and on the ability and willingness of people to pay those prices or the corresponding rents (RoK, 1970).²¹

The prevailing urban housing deficiency represents a market in disequilibrium, where supply falls far short of demand. Housing demand is repressed and biased because incomes are low and their distribution inequitable. Housing investors respond to this repressed demand by not investing in low-income housing, unless incentives to producers and suppliers make such investments more attractive (Sennik, 1991). Certainly, in the context of a slow increase in housing development, demand for housing in the major urban centres has raised rents to exorbitant levels (RoK, 1994).

2.4.3 Supply

Housing supply is affected by the availability of resources, including urban land, infrastructure, and building materials. It is likewise affected by the organization of the construction industry, the availability of skilled and productive construction labour, and the degree of dependence on imports. Both the demand and supply sides of housing are affected by policy, regulatory and institutional conditions (World Bank, 1993).

Drakakis-Smith (1988), however, cautions that it would be wrong to examine housing in the South solely in econometric terms of demand and supply. Strong social and political forces shape both sides of what is infrequently a simple equation: e.g., the demand for housing cannot be equated with needs, even within the same city. Housing demand can be articulated through market forces and possibly even elicit some sort of governmental response. Housing needs, on the other hand, are considerably more difficult to define and relate to the establishment of standards of habitation which may not be linked to income and the affordability of alternatives.

2.5 Housing Policy, National Housing Strategy and Programmes

2.5.1 Government Policy Responses

The formulation of a rational, comprehensive and co-ordinated housing policy and an institutional framework to facilitate housing delivery for all income groups are fundamental requisites for any country aspiring to address the problem of a housing deficit. In the absence of such an explicit policy, there will be no framework within which housing priorities and related development needs can be defined and this will impede the formulation and implementation of housing programmes. The establishment of effective organization and processes for the

²¹In relation to this, Turner (1976:95) underlines the importance of distinguishing between three kinds of housing demand: "The differences between what households *can* do and what they *will* do is so great, especially within lower income sectors, that distinctions must be made between effective, pent-up and potential demands, and the non-market demand or, competition, for public housing." Pent-up demands are those which could be released, or become effective, if households had access to existing options at prices that are commensurate with costs and income.

formulation of housing policies is consequently of paramount importance and should be a prime objective of any agency responsible for housing delivery.

National housing policies in the South show considerable variation in terms of specific objectives owing to many factors, including economic conditions, social and political pressures, and the existing housing stock.²² Still, just as it has been possible to distinguish the primary causal factors of poor housing conditions in any country, so has it been possible to identify certain objectives which are crucial to any national housing policy. These are summarized by Ligale (1977) as:

- (i) housing production for the lower income group as a priority;
- (ii) the opportunity for low-income households to own houses;
- (iii) a housing programme offering reasonable choice of environment;
- (iv) a sound financing policy as well as encouragement of savings;
- (v) an effective construction industry striving towards a reduction of construction costs;
- (vi) a reasonable programme for prevention as well as rehousing of squatters; and
- (vii) enforceable rent controls or their repeal.

Despite notable progress in most fields of national development, housing remains an elusive matter and a paramount challenge to the Government. The formulation and implementation of housing policy has been unable to keep pace with the demand, thereby resulting in huge housing deficits (RoK, 1979; Syagga, 1989; Macoloo, 1992). We will now discuss the housing policy of Kenya in some detail.

2.5.2 Evolution of Housing Policy in Kenya

Manifold perspectives of the urban housing problem in the South can be found in the literature, including the following which Macoloo (1988:161) maintains have significantly influenced housing policy formulation and implementation in Kenya:

- (i) the urban housing problem is caused by rural-urban migration, and the solution apparently lies in curbing this population relocation;
- (ii) the problem lies with the effects of inflation and global economic recession which have resulted in financial emasculation of local authorities; and
- (iii) the scarcity of suitable land for urban housing is a major cause of the problem.

²²Jagun (1989) contends that many housing policies in various political systems are seen in the form of legislation and regulations without any conceptualization of what these legal requirements fully imply. This position is true of virtually all Southern countries and makes housing policy objectives difficult to achieve.

Stren (1972) also argues that, because the economic structure changed less rapidly than the political system from the 1950s to the beginning of the '70s, continuity in housing policy was more marked than innovation.

2.5.3 Housing Policy and Programmes Prior to Independence

Housing policy in the interwar years

During the interwar period the government's approach to the problems of the indigenous urban population was essentially administrative: the objectives were maintaining law and order, ensuring the collection of tax, and keeping in contact with the shifting migrant population. Prevalent attitudes during the period were that the only Africans who should be permitted to live in towns were those who had come for "the legitimate purposes of employment or trade" (Stren, 1972:58). Not all the work of the administration could, however, be subsumed under the maintenance goals alone. Thus, in 1930, the system of land tenure whereby Africans in Mombasa could be evicted and rendered homeless, should the land be required by the owners for other purposes, was noted with alarm. Other problems were also discussed, including the high rate of tax which African householders were expected to pay. Although the administration assumed the main responsibility for African affairs in Mombasa, it often took the advice of the public health authorities, who were always concerned with insanitary and overcrowded conditions in the African areas. Indeed, a constant preoccupation of the health authorities in all towns was the prevention of plague, and it was frequently argued that the low standards of housing were the cause of rat-borne disease. But despite the growing concern of many officials to improve African urban conditions, an explicit policy did not begin to emerge until the post-war period (Stren, 1972).

The government's failure to address African urban problems resulted in a series of strikes in Mombasa in mid-1939. A Commission of Inquiry with wide terms of reference was subsequently appointed and identified three genuine grievances (Stren, 1972:60): (i) the inadequacy of pre-strike wages for housing and living expenses; (ii) the low earnings of casual labourers; and (iii) large numbers of irregularly employed or unemployed men. Of these, housing was given the greatest attention. The Commission analyzed the problem from three aspects—living conditions, wage levels and cost of living, and employers' legal obligations. No attempt was made to address specifically the question of sub-standard wages as this would have threatened the whole economic structure of the colony. Instead, employers were reminded of their legal obligations to provide housing or a housing allowance for all lower paid workers. The inauguration of a public housing scheme for the labourers of smaller employers was also advocated (Stren, 1972).

The war and post war years

Stren (1972) observes that it is commonly submitted that the colonial regimes were reluctant to discontinue a system which did not permit Africans full participation in urban life. But as early as 1939, it was being suggested that the 'better type' of indigenous worker should be encouraged in Nairobi, and accommodation provided for him and his family. Two years later, it was recommended that: local authorities provide housing at sub-economic rents; the legal obligations of employers to the workers be more strictly enforced; there be provision for Africans to build in town in temporary materials; and semi-rural 'garden villages' outside the municipality where the worker and his wife could cultivate a small plot be established.

Before the end of 1942, a Central Housing Board and a special fund to make loans to local authorities were established. A new Housing Ordinance became law in December, 1943 which gave high priority to African urban housing. It was however realized that it would probably be impossible to construct 'reasonable housing' unless some form of subsidization was adopted. With the principle of government responsibility for African urban housing embodied in the administrative machinery, future public decisions would deal with more specific issues, such as subsidies and house types and standards (Stren, 1972).

A report published in early 1949 stressed the importance of economic housing, encouraging Africans to acquire their own homes, and the physical planning of residential areas to minimize the distance and expense of travelling to work. Two memoranda later the same year dealt with some of the administrative issues that might be involved in a reorientation of policy, including: the appropriate term of lease on government land (decided at 33 years); the division of responsibility between the central government, municipalities and employers; and appropriate building standards. A central assumption was that, with some exceptions, Africans were not town dwellers; thus housing would continue to be the responsibility of the public sector and accommodation would have to be subsidized (Stren, 1972).

By 1950 it was apparent that a comprehensive reappraisal of African urban housing policy was needed. Until this time most public housing was sub-economic,²³ but unless wages rose significantly, economic rents on dwellings built to 'reasonable standards' would be unaffordable by Africans. The Vasey Report proposed that, while subsidies would be necessary in the short term, the government should encourage African-owned housing instead of only rental schemes. The report was planned as a guideline for the development of new housing schemes given the constraints imposed by a lack of African capital resources, existing planning by-laws and standards, and experience elsewhere. The report suggested that an area be set aside in every

²³The rents paid by African tenants did not meet the combined fixed and recurrent costs born by the authorities.

urban centre for African housing, and zoned for employer-built, private, or public housing schemes. Those who were granted land by the government should be allowed a 40 year lease, which could be extended an additional 25 years if the land was not needed for other purposes. Rents on the land should be minimal, and maintenance the responsibility of the occupier, although special public health regulations would be applied. Loans and arrangements to cheapen the cost of materials for those building their own dwellings were encouraged. Where it was necessary to allow construction in temporary materials, a permanent concrete plinth should be required, and at the end of ten years building in permanent materials should be insisted upon (Stren, 1972).

By the mid-1950s, the elements of a national housing policy that would persist had been largely established. In its broadest aspect this policy had stabilization and labour efficiency as its principal goals: to realize these objectives the government looked to increased family housing, neighbourhood planning, economic rents, higher wage levels, improved social amenities, and residual controls over urban migration. As part of the cognitive map of local and national officials, the elements of this policy provided a context and an evaluative framework for diverse schemes (Stren, 1972).

Early colonial attitudes towards housing of the African population were characterized by restrictive rural-urban migration measures which permitted only the actual labour force into towns, i.e. a majority of single males. There was no comprehensive housing policy formulated to serve the interests of these indigenous urban dwellers; the men were regarded as transient migrants who had come to supply much-needed labour, leaving their families in the rural areas to which they would return. The only official document relating to housing provision was the Employment Ordinance which required that employers provide either proper housing for their employees or for the rental of proper housing accommodation.²⁴ Most housing constructed during this time was thus in keeping with the colonial government policy which promoted single room unit construction for the temporary male residents, known as 'bedspace' or 'bachelor' accommodation, with common facilities (Njau, 1977; Obudho and Aduwo, 1989; Malombe, 1992).

In the early 1940s, there was a growing problem of housing in urban areas which the authorities could not ignore. A Central Housing Board (CHB) was consequently created in 1943 to address the matter; it aimed at promoting house ownership in addition to local authority rental housing. In the late 1950s the Royal Commission Report led to a change in population policy towards the

²⁴There was no definition of 'proper' accommodation in the Ordinance, nor mention of how the requirements would be enforced. Many employers complied with the legal obligation by offering accommodation allowances to their employees. A few, including the Government, local authorities and parastatal organizations constructed some housing, mostly in the form of single room dwelling units (Obudho and Aduwo, 1989).

stabilization of Africans in urban areas. The CHB was thus very active in providing housing to consolidate Africans by making them property owners; this marked the beginning of the provision of public rental housing in the major urban centres (Njau, 1977; Malombe, 1992).

Another significant aspect of housing policy before independence was the development of informal settlements. These settlements emerged primarily due to the shortage of housing for urban dwellers, and were initially developed mainly by individual households (Malombe, 1992). However, Obudho and Aduwo (1992) maintain that squatting and the development of informal settlements in Kenya are the result of broader colonial and post-colonial economic structures which developed both the formal and informal rural and formal and informal urban spatial structures.

2.5.4 Housing Policy and Programmes after Independence

The advent of Independence in 1963 found an already existing housing problem in Kenya.²⁵ Recognizing the gravity of the predicament, the new Government commissioned a United Nations mission in 1964 to evaluate short- and long-term housing needs, and prepare guidelines upon which a comprehensive housing policy could be formulated within the framework of economic and social development planning. The report (Bloomberg and Abrams, 1965:3) affirmed that the country was experiencing "a serious housing problem, particularly in its cities", as a result of:

... migration to cities from rural areas; the pressures of overcrowding and housing shortage; a lack of capital with which to build houses and disparities between what the average urban family can pay for the shelter and the cost of producing it. (Bloomberg and Abrams, 1965:1)

Subsequent to the publication of the report, the first comprehensive housing policy for Kenya was enunciated in Sessional Paper Number 5 of 1966/67 entitled "Housing Policy for Kenya" (RoK, 1966). It pronounced, *inter alia*, that the Government would adopt a policy of organizing, in collaboration with local authorities, a programme purposed to develop housing projects which would provide essential housing and a healthy environment to urban dwellers at the least possible cost to occupants. Also endorsed were recommendations for the establishment of a national housing authority to co-ordinate housing programmes, in particular those relating to local authorities (Majale, 1985). Low-income urban housing was a primary consideration of the policy.²⁶ Specifically, it stated:

²⁵ By most indices Kenya experienced an economic slump between 1957 and 1965, during which time the rate of gross capital formation fell. This is patently reflected in the decline in private building construction in the main towns; public schemes did not offset the inability of the private sector to provide housing during this period (Stren, 1972). In accordance with laws of supply and demand, rents also spiralled (Macooloo, 1988).

²⁶ Rural housing was left to the initiative of individual households.

If towns are not to develop into slums and centres of ill-health and evil social conditions, low income urban housing and slum clearance must continue to form the major part of the nation's housing programme . . . (RoK, 1966:7).

In 1966, in accordance with the recommendations of Sessional Paper Number 5, the Government created a separate Ministry of Housing to formulate future housing policy, while the National Housing Corporation (NHC) was established in 1967 as the executive arm of the Government through which all public funds for housing would be channelled. The Housing Finance Company of Kenya (HFCK) was also instituted in 1967 to provide funds for middle and high income mortgage housing whether developed by NHC or other private developers. The Housing Research and Development Unit (HRDU)²⁷ of the University of Nairobi was likewise founded in 1967 to carry out research on technical, economic and social aspects of housing. Also constituted in 1967 was the Rent Restriction Tribunal (Majale, 1985; Syagga, 1989).

2.5.5 Housing Policy, Strategies and Programmes in Development Plans

2.5.5.1 1964-1970 Development Plan

No priorities regarding urban housing were detailed in the First National Development Plan in independent Kenya. However, the focus on the issues of migrant shifts from rural areas and the inability of the populace to secure urban housing of reasonable quality and quantity was indicative of the Government's concern with the matter. Despite the Government's cognizance of the financial constraints of the urban poor, it discouraged any form of subsidy in housing development. The Plan acknowledged that the public finance for housing in the order required to keep pace with the urban increase in population was not available. Alternative ways in which adequate housing could be provided were however identified: (i) the per capita cost of housing had to be reduced substantially—site and service schemes and self-help housing were recommended in this respect; and (ii) as much capital as possible had to be induced from the private sector.²⁸ The housing co-operative society was also cited as an auspicious method of channelling private savings into housing investment.

2.5.5.2 1970-1974 Development Plan

In recognition of housing's strategic role in ameliorating living conditions and improving the country's economic performance, the Government declared:

The prime objective of Government policy in housing is to move towards a situation where every family in Kenya will live in a decent home, whether privately built or state-sponsored, which provides at least the basic standards of health, privacy and security. (RoK, 1970:513)

²⁷Now known as Housing and Building Research Institute (HABRI).

²⁸The Plan noted that site and service and self-help schemes were both methods of doing this (RoK, 1964).

The Plan, however, acknowledged that even with a sustained maximum effort in planning, finance and administration, combined with rapid increase in residential construction, it was improbable that the objective would ever be realized. It further recognized that until the fundamental problem of inadequate incomes of multitudinous households was alleviated, decent housing—along with the additional elements of minimally adequate standard of living—would remain beyond the reach of most of the population. Still, the Government's stated housing policy was to utilize all available resources in a manner to achieve the maximum possible improvement in the housing stock over the Plan period. This was to be achieved through, *inter alia*: the introduction and expansion of programmes for promoting housing; loans to local authorities for housing development; direct construction of housing where local authorities could not undertake it; pilot schemes; participation in the financing of private housing; assistance to companies undertaking employee housing projects; improvement in housing design, with emphasis on the utilization of local materials; and research into housing markets and constraints on supply, especially in finance, the contracting and building industry, and in building codes (RoK, 1994).

2.5.5.3 1974-1979 Development Plan

The Plan affirmed the Government's intention to streamline the design and construction of housing through the adoption of Government-determined standards. Also advocated was action against the proliferation of urban informal settlements and slum eradication through resettlement and improvement of sub-standard housing. Mainly due to careful analysis, political sensitivity, and the intervention of international aid agencies such as the World Bank, informal settlements were officially acknowledged, and it was stated that they would not be demolished without alternative accommodation for residents being provided. The Government also markedly departed from providing completed housing units to providing incremental site and services schemes in addition to settlement upgrading programmes.

2.5.5.4 1979-1983 Development Plan

The Plan affirmed that despite notable progress in urban housing development, it remained a significant challenge to the Government; the extreme housing deficit, overcrowding, and proliferating informal settlements patently manifested this predicament. The deficiencies in infrastructure provision that characterized these settlements created an unacceptably low standard of environment.

Carrying forward several unattained objectives of the previous plan period, the Government specifically aimed to: (i) increase the urban housing stock to meet the demand resulting from urban population growth; (ii) meet the existing urban housing deficit; (iii) ensure that housing produced benefited the lowest income groups in particular; and (iv) maintain a healthful and safe environment. The Plan noted that although site and service schemes were one way of alleviating the low-income housing problem, many people objected to them on social or cultural grounds;

the urban housing programme however also included an upgrading programme aimed specifically to improve the standard of dwellings in informal settlements. While appreciating that rent levels should be determined by market forces, the stated Government policy was to preclude the exploitation of tenants through extortionate charges and unjustified evictions by unscrupulous landlords. Rent levels were thus to kept under review and some measure of rent control imposed; but it was recognized that ultimately the solution to high rents was increasing the housing stock, and rent policy would accordingly be geared towards this end.

2.5.5.5 1984-1988 Development Plan

The primary objective of the Government's housing policy remained the provision of adequate shelter for all. In light of past impediments to shelter delivery efforts and the need to mobilize domestic resources for equitable development, the main policies and objectives were: (i) to promote self-help housing construction; (ii) to formulate and adopt realistic, performance-oriented building standards, particularly for low-cost housing; (iii) to intensify research on and use of local building materials and construction techniques; (iv) to promote the development of flats for sale through revised legislation; (v) to safeguard the interests of tenants and landlords through the regulatory framework; and (vi) to explore the feasibility of instituting a housing levy whereby employers contribute towards a Consolidated Housing Fund. Site and service schemes and settlement upgrading remained the principal strategies for providing housing for the low-income majority, together with civil servants' housing, co-operative housing and private sector participation.

2.5.5.6 1989-1993 Development Plan

The Plan affirmed that the provision of decent housing for every household remained a long term objective of the Government. Various strategies and programmes aimed at achieving this goal had thus been adopted, including: individual housing development, tenant purchase schemes, rental accommodation, and settlement upgrading. The Government had concomitantly been working towards the elimination of various constraints to urban housing development, including: rapid growth of urban population; availability of land; inappropriate building by-laws and standards; cost of building materials and construction finance; and inadequate financing mechanisms. During the Plan period, the Government aimed to: (i) ensure the mobilization of more funds for housing development; (ii) address the problems of scarcity and cost of urban land, as well as insecurity of tenure; (iii) ensure the provision of basic infrastructure through the local authorities; (iv) review laws and regulations impeding housing development, and existing rent policies which have discouraged housing development.

2.5.5.7 1994-1996 Development Plan²⁹

The Plan enumerated various measures aimed at addressing the growing housing deficit: (i) upgradation of informal settlements; (ii) mobilization of finance; (iii) establishment of a monitoring and evaluation mechanism; and (iv) dissemination of low-cost building by-laws and planning regulations. The Plan affirmed that the GSS would continue to constitute a strong basis for Government action in the pursuit of adequate shelter for all, and more emphasis would be placed on the creation of an effective regulatory framework and the provision of essential public infrastructure and social services. Also, in the Plan, the theme of which is 'Resource Mobilization for Sustainable Development', the Government proclaimed it will take the following steps required to launch and guide Kenya's transition to sustainable development (RoK, 1994:172):

- the assessment of environment and development conditions; linkages and trends will be established and made operational during the Plan period;
- environment will be incorporated into the mandates of all major and economic sectoral agencies;
- environment will be integrated into key economic and sectoral policies, plans and decision-making;
- environmental and equity impact assessments will be built into the approval process for new policies and projects;
- environmental laws will be streamlined, strengthened and enforced;
- the use of economic incentives and disincentives will become central to policy formulation and decision making at all levels of Government;
- special reports will be issued on progress made and needed for achieving sustainable development.

2.5.5.8 1997-2001 Development Plan

The Plan identifies finance as a major constraint to an effective urban housing supply. Additional constraints include: (i) local authority by-laws, obsolete building regulations and zoning laws that make housing costly and abet non-adherence to regulations; (ii) lack of adequate infrastructure to facilitate private sector involvement; (iii) scarcity of suitable land, especially serviced land; (iv) lack of comprehensive land use and housing policy as well as limited community participation in planning; and (v) limited institutional capacity in both central

²⁹The period covered by National Development Plans was reduced from five to three years in accordance with the revised budgeting procedures of the new Public Investment Programme. The shorter time frame was said to be additionally advantageous in that overall Government policy would be reviewed more frequently and be able to respond more rapidly and flexibly to the escalating scale and pace of change in the 1990s. The overall theme of the Plan, "Resource Mobilization for Sustainable Development", affirmed the Government's commitment to addressing key environment and development issues and launched Kenya's transition to sustainable development (RoK, 1994:39).

Government ministries and Local Authorities. In addition, adequate co-ordination of actors often leads to duplication of efforts.

The Plan recognizes the policy implications of these constraints, and that visionary and comprehensive action will be necessary on several fronts, including: financing, land issues, technological aspects, and environmental issues. Comprehensive policies with respect to urban housing, slum upgrading, improving infrastructure for informal housing, and rehabilitation of urban residential infrastructure will also be essential.

A plan of action aimed at addressing the above constraints and realizing the twin goals of adequate shelter for all and sustainable human settlements in an urbanizing Kenya was formulated by the Government in 1995. Prepared in consultation with the local authorities, the private sector, NGOs, CBOs and other stakeholders in the shelter and human settlements sector, the plan constituted Kenya's contribution to Habitat II. It incorporates support programmes for capacity building, enhanced participation of communities and civic engagement, and will provide the basis for addressing shelter related issues. Policies relating to specific problem areas outlined in the Plan (RoK, 1997:167) are as follows:

- As infrastructure provision threatens to be a persistent constraint to upgrading shelter: (i) the MPW&H will formulate a comprehensive long term plan for upgrading all slums and squatter settlements in major municipalities; (ii) the MLG, in conjunction with Local Authorities, will produce a plan of action to rehabilitate dilapidated residential infrastructure as well as guidelines to boost rates to cover subsequent maintenance costs; (iii) a comprehensive plan to upgrade the infrastructure in informal but permanent housing estates in the major towns will be prepared by the MLG, MPW&H and the relevant Local Authorities. These plans of action will all be in place by January 1998.
- To address problems relating to land: (i) the MLS will review and revise procedures for providing and transferring title deeds in urban areas to expedite the process; (ii) the MoF will consider tax reforms to reduce speculative land purchases; (iii) the MLG will review zoning laws and land use regulations in all municipalities to ensure conformity to market conditions; and (iv) urban development will be integrated with the servicing of urban land.
- As want of a comprehensive land use and housing policy has been a major limitation to planning, the MPW&H and the MLS will formulate a comprehensive plan incorporating needs for rural-urban balance, industrialization and urbanization during the first two years of the Plan.
- To overcome the constraint of inadequate institutional capacity at both central and local Government level in the implementation of shelter policies: (i) the regulatory framework will be reviewed by 1998 in order to promote private sector participation, and the public sector will likewise be re-organized to allow NGOs and CBOs to fill in institutional gaps;

- (ii) productivity-based remuneration and improved training will be introduced to enhance the productivity of employees, in addition to explicit rules and procedures to assist personnel carry out their duties.
- To address the environmental impacts of shelter provision, the National Action Plan's policies with respect to legislation, institutional framework and linkages will be incorporated in all housing policy documents.

It is anticipated that the combined impact of the implementation of these measures will improve incentives for the private sector to mobilize resources and to invest in the housing sector (RoK, 1997).

Government housing policy has been subject to considerable revision in subsequent Development Plans. The following consistent aspects of its execution however are especially noteworthy (RoK, 1987):

- Government has consistently defined its role as assisting the lowest income households to obtain adequate shelter.³⁰
- While some attention has been given to upgrading and expanding the housing stock in rural areas, government efforts have primarily been directed to urban areas.
- The private sector has been consistently called upon to participate in housing provision for the low income urban majority.

Within the general housing policy framework, there has been a significant evolution which has included the following amendments: (a) greater rationalization of public delivery of housing; (b) increased concentration of resources on the lowest income group; (c) stronger emphasis on cost recovery (poor performance notwithstanding); (d) more emphasis on smaller urban centres; (e) enhanced encouragement of private participation in the development of formal sector low cost housing; and (f) demonstrations in donor-assisted projects of greater responsibility of Local Authorities for defining appropriate housing interventions (RoK, 1987).

2.5.6 National Housing Strategy for Kenya 1987-2000

Housing programmes designed to benefit the urban poor majority, especially those residing in informal settlements, can only be successful if formulated within a comprehensive shelter strategy which defines priorities, makes provision for resource allocations and integrates the various sectoral components and programmes. Thus essentials for an integrated shelter strategy include: (i) clear policy objectives; (ii) an understanding of shelter conditions and housing

³⁰The 1989-1993 Plan (RoK, 1989:24) elaborates: "The adequacy of housing is determined not only by the shelter and contiguous facilities it provides but also by the entire system of supportive and facilitative infrastructure and services, including accessibility to the work place and social facilities and amenities".

markets at national and local levels; (iii) a perception of the interrelationships between components of the shelter programme and of the way in which the overall results are affected by the deficiencies in any one component; and (iv) the capacity to mobilize resources so that they will be readily available when required (UNCHS, n.d.:38).

Various strategies and programmes aimed at alleviating the acute shortage of housing in urban areas have been adopted by the Government since Independence in 1963. The present National Housing Strategy (RoK, 1987) was formulated with the objective of producing a concrete plan of action for the period 1987-2000 by which the public and private sectors working together with the international community would be able to produce a significant volume of housing, infrastructure, and community facilities of acceptable quality. The major principles guiding the formulation and implementation of the Strategy include:

- The achievement of the maximum addition to the stock of acceptable housing;
- The targeting of the lower income groups as the focus of Government actions;
- The exploitation and promotion of the resources of the informal sector to contribute more to the production of acceptable housing.

Although high-level political sponsorship in initiating the strategy development process is pivotal to a successful outcome, the strategy process failed to mobilize and benefit from direction and endorsement at the political level due, in part, to time constraints.³¹ Nevertheless, the Strategy has constituted the basis for subsequent policy development. An enabling approach in which public-sector resources are to be utilized to remove constraints which are preventing the total and effective mobilization of community, non-governmental and private resources is specified in the strategy document.

2.6 Institutional Framework

The existence of appropriate institutional arrangements is essential to the formulation, implementation, monitoring and evaluation of shelter policies. In Kenya, the institutional arrangement is defined through a framework of public and private agencies, whose work is supplemented by efforts of international agencies, NGOs and CBOs. In the absence of effective co-ordination of all these agencies, their proliferation may in itself be an impediment to making housing accessible to the poor due to negative externalities such as inter-agency conflicts (Macoloo, 1994).

³¹The Strategy was formulated within a constricted framework so that it could be presented at the Tenth Session of the United Nations Commission on Human Settlements in 1987 (the International Year of Shelter for the Homeless).

The development of housing in Kenya is organized through three different government agencies: (i) the Ministry of Public Works and Housing; (ii) the National Housing Corporation, which is under the Ministry of Public Works and Housing; and (iii) local authorities. The Ministry is responsible for the development and administration of Government housing policy and programmes; with the exception of civil servant pool (rental) housing, it does not directly execute any actual housing development.(RoK, 1987).

Funding for housing development comes from national appropriations in the form of loans and external assistance, and has ordinarily been channelled through the NHC. Nevertheless, the local authorities remain the principal actors in the housing domain. Local authorities, in conjunction with the District Health Officer, control building and sub-division standards applicable in their jurisdiction. In the largest urban centres, they manage their own project development, while in the smaller ones the NHC undertakes this task on their behalf. Local authorities are also eligible to apply for loans from the Local Government Loans Authority (LGLA) to enable them to improve services in their areas of jurisdiction. They assume control of projects developed by the NHC (both rental and site-and-service schemes), and are responsible for collecting rents and mortgage payments which are subsequently used to pay off NHC project loans. They are likewise responsible for the maintenance of completed projects—which they have had great difficulty in managing. All housing development with Government funds is implemented with considerable subsidies—both below market interest rates on loans and low or no charges for land.³² Moreover, costs for local authority owned and managed rental housing are determined on a historical basis³³ and are commonly well below market rates for comparable units. While local authorities have been quite sedulous in collection of rents, they have been less successful in recovering costs for projects built for owner occupancy (RoK, 1987).

Land administration is under the authority of the Commissioner of Lands, who heads the Land Department in the Ministry of Lands and Settlement. The Commissioner administers the alienation of land for housing development, the registration of titles and deeds; and oversees valuation for fiscal purposes. Responsibility for land use control and town planning is shared between the Commissioner and the Director of Physical Planning at the national and local levels.³⁴ Responsibility for urban infrastructure and services lies principally with the local authorities and the relevant Ministry which operates water supply and sewerage networks in urban centres where these are not operated by the local authorities (RoK, 1987).

³²Where donor funds are involved, interest rates are based on borrowing terms and are higher, but are nevertheless below market levels (RoK, 1987).

³³For this reason, rents can vary significantly between housing projects depending on when they were constructed (RoK, 1987).

³⁴Nairobi and Mombasa have their own planning departments, while the Physical Planning department provides assistance to other local authorities.

2.7 Constraints to an Effective Housing Supply

The human settlements conditions of most Kenyans, especially in urban areas, have deteriorated in the last few years. This has been largely due to the economic hardships and rapid population growth, coupled with increased rural-urban migration, with which the country has been confronted. Moreover, both Government and private sector expenditure on housing have reduced significantly. These factors, among others, have constrained the provision of adequate housing considerably, resulting in the proliferation of informal settlements in most urban areas. A progressive increase in construction costs has further contributed to the observed overall insignificant increase in housing units completed by both public and private developers (RoK, 1994).³⁵

The six major components in the housing process are: land, finance, the construction industry/labour, building materials, infrastructure, and the legal and regulatory framework. Supply-side distortions arise mainly from policies affecting these inputs (Tipple, 1994b; World Bank, 1993). Indeed, the most apparent constraints to the supply of low-income-housing identified in the 1994-1996 Plan (RoK, 1994) are: difficulties in access to land; lack of credit facilities; anachronistic building standards and regulations; and lack of information on innovative building technologies for inexpensive and affordable housing.³⁶

2.7.1 Land

The provision of adequate land for housing and other economic and social needs is the essential challenge facing urban administrators (Earthscan, 1983). Land is widely recognized as the principal component in housing provision, whether for the rich or poor. For conventional housing markets it is commonly the single largest cost factor, whilst for the poor, obtaining tenure has long been considered to be their foremost priority. This assumption has been the fundamental precept on which numerous low-cost housing programmes have been founded and have foundered (Drakakis-Smith, 1988). If maximum potential delivery of affordable housing for all urban households and methodical industrial and commercial development are to be realized, it is imperative that urban land markets operate efficiently, and that constraints to such systematic development are removed. However, urban land development issues are highly complex both in theory and practice due to interdependencies, specificity of locational advantage, transfer costs and market imperfections (Ondiege, 1992).³⁷

³⁵At the same time, the 1994-1996 Plan (RoK, 1994) maintains that the municipalities, National Housing Corporation (NHC) and private developers have played a pivotal role in increasing the urban housing stock.

³⁶The 1994-1996 Plan observes that women are all the more affected by these constraints.

³⁷Yahya (1988) conversely holds that land transactions and land prices are a good barometer of a city's prosperity and general well-being, and further maintains that the related phenomena and processes are easy to study, measure and record.

The 1994-1996 Plan affirms that land is not only a fundamental factor of production, but also finite in size; it therefore requires proper planning and management. The inelasticity in supply of urban land has made it a major constraint in urban housing development.³⁸ The 1979-1983 Plan (RoK, 1979:171) summarizes the situation:

One of the biggest problems facing housing development in urban areas concerns land. The servicing of urban land and the whole mechanism of urban land assembly is proceeding at a very slow pace . . . In particular, the shortage of land with minimum services for low-cost housing is a major bottleneck to the production of authorized housing.

Prospective developers with the requisite finance have indeed failed to acquire land (Etherton, 1971; RoK, 1983; 1986).

2.7.1.1 Land Tenure, Land Administration and Land Use Planning

Provision of suitable land being a fundamental factor in housing development, different systems of land ownership have significant implications. Land in Kenya can be held under three categories of rights: freehold land, leasehold land and customary rights.³⁹ Freehold land confers absolute title to the owner subject to legislative restrictions,⁴⁰ while leases for urban land are limited to a maximum of 99 years.⁴¹ Customary rights, based on communal ownership and sharing, exist for land held in trust by county councils for various tribes. The tenurial system confers rights of ownership which have to be compensated for if land has to be acquired for public purposes. The institutional framework for land acquisition is well established at both the national and local government levels (UNCHS, 1985a).

Although success has been achieved in the area of survey and mapping, little has been achieved in textual data management for land administration and registration.⁴² Still, available information indicates that public land reserves are diminishing rapidly and have almost been exhausted in urban areas.⁴³ Public acquisition of land for housing development has proved to be

³⁸Contrarily, Jørgensen (1977) contends that land as a factor of production of housing is not a major constraint anywhere. Although it may be costly and its location less than ideal, technically this can be solved even in extreme cases of congestion as Hong Kong, Singapore and New York. Hardoy and Satterthwaite (1989:101) similarly assert: "In most cities there is no lack of underdeveloped or partially developed land on which low-income housing -sites could be developed. . . ." Jones and Ward (1994) similarly affirm that land is quite freely available, albeit through illegal modes of acquisition.

³⁹The land-tenure system in Kenya appears to have evolved out of the initial superimposition of a settler economy over a territory in which various tenures and land laws already existed, and the subsequent need to transform a former colony into a modern state where land and other resources are controlled by indigenous peoples (UNCHS, 1985a).

⁴⁰Pertinent legislation includes the Land Control Act, Cap. 302 of 1967; the Land Acquisition Act, Cap. 295 of 1968; the Land Planning Act, Cap. 303 of 1968; and local building Codes.

⁴¹Urban leases impose restrictive conditions on transfer, sale, subletting or any other form of disposal of land; they restrict subdivision to uneconomic sizes; make the provision of services on subdivision mandatory; and require compliance with building codes and development within a specified period.

⁴²World Bank (1993) notes that while land transactions occur for residential home development on a large scale in cities of sub-Saharan Africa, governments have developed little capacity for recording these transactions. Moreover, they are hardly able to issue and register titles to these land holdings, or to appropriate revenue for needed urban infrastructural development from these land assets.

a costly and protracted method of making residential land available. Complex legislation and procedures relating to subdivisions, registration and planning approval, in addition to inadequate resources and personnel have constrained public agencies from meeting the demand for new urban residential land, and generally impeded various development activities (RoK, 1994). Due to the great demand for land for urban development, most plots are allocated unsurveyed; hence the development of illegal subdivisions and predominance of uncontrolled and autonomous land development practices (Karirah, 1993).

2.7.1.2 Urban Land Use Policy and Management

Land use policy in Kenya relates to a regulatory framework that governs the rights and obligations of landowners together with guidelines to ensure optimum utilization of available land in both rural and urban areas. The Government's strategy towards this object is to ensure that all land is planned, surveyed, adjudicated (where applicable) and registered with a view to issuance of titles. This provides security of tenure and encourages investment in and development of land which, in turn, leads to increased productivity, general rise in economic growth, higher incomes and improved standards of living. Considerable progress has been made in this respect using various policy instruments, such as the designation of 'Growth Centres', 'Service Centres' and 'Rural Trade Centres' (RoK, 1994; 1997)

As the success of the above policies is contingent upon the preparation of Land Use and Physical Development Plans, the 1994-1996 Plan (RoK, 1994:111) proposed to address the following constraints: inadequacies in planning information and data; lack of prompt provision of infrastructure to facilitate ready development of planned areas; and lack of statutory powers to enforce the implementation of physical development plans. In the light of these constraints and in order to eliminate impediments to the implementation of an effective land policy, the Government will create an enabling environment involving all interrelated agencies to promote efficient land management; direct all resources at its disposal to key areas that act as growth poles for development; and review policy initiatives that may have constrained private sector investment.

2.7.1.3 Land for Residential Use and Low Cost Housing

The situation with respect to land is particularly complex and increasing the supply of land for residential development for the lower income groups appears especially challenging. The problem of inadequate supply of serviced land is probably the greatest constraint to expanded production. The principle problems are (RoK, 1987):

⁴³According to the UHS, 24.5% of residential plots in urban areas are leased to the holders by the Government while 55% are in private ownership; the remaining 20.5% of residential plots are held under different land tenure systems (trust land, coastal land tenure system, and squatting). These figures indicate that the Government has no effective control over most of the urban land. However, the UHS advises that these figures should be used with caution as the majority of the respondents were not able to differentiate leasehold and ownership with certainty.

- The diminishing supply of public land within urban areas, which has been the main source of land for government-sponsored projects for lower income households. Also the sale of public land alienated for private development (for higher income use) at prices well below the prevalent market values.
- The legal machinery governing the development of land for housing development.⁴⁴
- Administrative and related resource constraints.

Within the policy framework of sustainable growth and development, the optimum utilization of the scarce land resource is essential. The 1994-1996 Plan (RoK, 1994:100) recognizes that this can only be realized through formulation of policy guidelines to ensure, *inter alia*:

- accurate development planning, land surveys and registration to enable developers to initiate viable projects;
- transfer and change of user between competing uses of land to harmonize with development objectives;
- provision of infrastructural services to facilitate faster socio-economic development;
- subdivision of private land in rural and urban areas in accordance with the laid down planning standards and regulations; and
- regular and systematic review of planning standards and regulations.

As land for housing programmes needs to be identified and reserved for future housing development, where Government land is available, it will be reserved for future development of low-cost housing. Titles will subsequently be issued to the NHC, NGOs and other agencies engaged in low-cost housing and research, in order to secure it for future low cost housing development (RoK, 1994).

2.7.1.4 Informal Land Markets for Housing Development

As far as the provision of land for housing the urban poor is concerned, informal systems have performed immeasurably better than legal systems (Van der Linden, 1994). Certainly in Kenya, informal land markets generally represent the only means by which the urban poor can gain access to land for housing. The arrangements and processes involved in the informal land markets take diverse forms, but are primarily non-commercial arrangements which involve no costs, such as settlements on customary lands.⁴⁵ Informal commercial arrangements involve

⁴⁴The legal machinery to enforce stipulated planning regulations is lacking. For example, there is no provision to prosecute a developer who contravenes land use standards and regulations under the existent Land Planning Act (RoK, 1968). Moreover, the Government is unable to collect land revenue due to inadequate machinery to prosecute defaulters (RoK, 1994).

⁴⁵In several Southern cities for which detailed research has been undertaken on informal land markets, the non-commercial land markets are in decline while the informal commercial land markets are expanding rapidly. Many researches evidence the increasing commercialization of informal land markets as urban economies and populations grow (UNCHS, 1996).

illegal transactions and do not conform to regulations.⁴⁶ It is in these informal processes and arrangements that most problems exist, including the illegal sales of public land; substandard land divisions where the plots are sold on a hire-purchase basis; land rentals; and land fragmentation in existent settlements (Karirah, 1993).⁴⁷

As informal land transactions and housing development continue unabated in urban centres in Kenya, the emerging pattern of land development is the generic *ad hoc* type resulting in informal settlements. Transactions involved in land acquisition through informal land markets typically do not involve transfer of legal instruments of ownership. Consequently, problems arise when local authority intervention in the settlements is necessitated for reasons of development control or public health risks from lack of services and overcrowding (Karirah, 1993).

2.7.2 Access to Urban Services and Infrastructure

The rapid growth of the urban population has generated a concomitant increase in demand for urban services. The supply of urban services has not, however, paralleled the increasing need in most urban centres.⁴⁸ The deficiency of water and sanitation services and lack of other infrastructural services such as road networks has greatly affected the economic and social fluidity of the urban centres. There is, thus, urgent need for rehabilitation and expansion of such services and facilities to improve the human settlements environment (RoK, 1989; 1994).

Accessibility to basic urban services by the urban poor has been constrained by a number of economic, social, administrative and political factors. Income is the most important factor in shaping the housing situation in any country. The amount of housing and related services that households can afford is determined by the per capita income and its distribution among households, along with the price of the housing itself. In Kenya, the urban poor majority are incapable of paying for urban services because of their inadequate incomes.

The Government asserts that the adequacy of housing is determined not only by the shelter and contiguous facilities it provides but also by the entire system of supportive and facilitative

⁴⁶The illegal land system serves diverse powerful vested interests—including in many instances politicians and real estate companies (UNCHS, 1996). In Kenya, the allocation of informal building rights provides access to a lucrative source of capital accumulation and is a major resource controlled by the local administration. These rights are informal rather than legal and represent an assurance of protection from demolition for individual allottees. As the legality of this allocation process is at best disputable, political patronage within the public administration and wider political system is cardinal (Amis, 1984).

⁴⁷Prodger (1998) affirms that, over the last three decades, in a constantly changing political environment, the institutions responsible for managing land in most Southern countries have failed to keep pace with the conflicting demands of sustainable development and a growing population, urbanization, agriculture and conservation. In many cases, this has reached the point where the escalation of activity in the informal land market is proving a major constraint to economic development, resulting in increased vulnerability of those without formal rights to the land.

⁴⁸According to the National Housing Strategy (RoK, 1987), given the fact that at least 60% of newly developed urban housing units do not have adequate infrastructure services and that there is a one-third deficit in total units developed, then the number of dwellings receiving adequate services each year must more than double.

infrastructure and services, including accessibility to employment opportunities and social facilities and amenities. Accessibility to basic urban services by the urban poor has been constrained by various economic, social, administrative and political factors. Income is the most important factor in shaping the housing situation in any country. The amount of housing and related services that households can afford is determined by the per capita income and its distribution among households, along with the price of the housing itself. The urban poor majority are unable to pay for urban services because of their meagre incomes. While they may generally be able to construct new dwellings, they lack the capacity to provide all the related infrastructure (RoK, 1986; 1989; 1994).

The provision of urban infrastructure has traditionally been almost exclusively the concern of the Central Government. While local authorities are also involved, the major part of their investments is channelled through the Local Government Loans Authority (LGLA). As mentioned above, as urban population grows, capital requirements generally increase at least proportionately, if not faster. However, approved public expenditures have represented absolute decline in available resources and therefore a more marked decrease in investment per urban resident. Moreover, unduly high Government standards have resulted in exorbitant costs; the unrealistic standards would require unsustainable subsidies to enable the lower income groups to access them. As a result, higher income groups have benefited from projects originally targeted for the urban poor (Bubba and Lamba, 1991; RoK, 1986; Syagga, 1989; Syagga, *et al.*, 1989).

The Government stated policy is to provide "Water for All by the Year 2000". Current estimates, however, indicate that 75% and 50% of the urban and rural population respectively have access to safe drinking water. In both cases, water supply remains inadequate for domestic, industrial and commercial uses (RoK, 1997).

The National Housing Strategy (RoK, 1987:20) identifies several interrelated constraints to the provision of urban infrastructure:

- Local authorities lack adequate finances for extending infrastructure networks to the degree required.⁴⁹
- Standards applying to both subdivisions and buildings are excessively high for the housing developed under them to be afforded by lower income households.
- Planning and budgeting of capital works, including maintenance, is constrained by inadequate procedures and personnel. Cost control of infrastructure projects is a further problem.

⁴⁹Despite successfully collecting water, rental and other charges on occasion, the funds are not allocated to system maintenance and expansion, but rather are diverted to meet other expenditure requirements. Consequently, loans acquired from the LGLA are not repaid.

- Subdivision standards set by the Local Authority are typically too stringent for low income developments, and local authorities have been largely inflexible in deviating from them.

Despite the recognition of infrastructure as public services for which the central or local governments are responsible, it is evident that public finance source alone will not be adequate to meet the high level of investment in infrastructure services. With a view to generating adequate funds and lowering the cost of service provision, the Government has adopted policy options geared towards mobilization of increased local resources; charging of market prices for services provided; and adoption of more appropriate and cost effective standards in the development, operation and maintenance of water supply, sewerage works and roads in urban areas. In order to maximize available funds, resources will be concentrated on those projects which offer lower construction and maintenance costs per beneficiary. This will necessitate the adoption of more appropriate standards that reflect the relative scarcity of capital and the trade-off between lower capital costs and higher maintenance costs later (Mairura, 1992; Syagga, 1991).

2.7.3 The Building Materials and Construction Industry

The construction industry contributes significantly to the socio-economic development process in most countries (UNCHS, 1996). It is unique in its capacity to facilitate development by providing directly for human needs or stimulating investment, or by generating employment, which can accomplish these objectives (Moavenzadeh, 1987). It is particularly important for absorbing unskilled labour, giving work to the lowest income sector in the economy (Tipple, 1994a). The establishment of a close relationship between construction activity and economic growth has demonstrated how pivotal construction can be in the process of growth and development (UNCHS/ILO, 1995).⁵⁰ A number of aspects of the organization of the residential construction and building materials industry can have significant implications for the cost of housing and the responsiveness of the supply system (World Bank, 1993). An efficient and effective building materials and construction industry is a prerequisite for efficient implementation of the housing programme; in turn, the efficiency with which the latter can be implemented will have a positive impact on the former. However, over the years, the sector has been increasingly constrained in its capacity to meet housing needs, especially those of lower income households (RoK, 1979).

The building materials and construction industry in Kenya plays a critical role in the development of the economy. The sector creates investment opportunities for Government, firms and individuals, in addition to providing basic infrastructure such as water and sewerage, housing and roads required for the development of other sectors. In terms of employment generation, the

⁵⁰However, it has likewise led to some debate as to whether investment in construction is the cause, or merely the effect of economic growth (UNCHS/ILO, 1995).

Table 2.6: Annual percentage increase in building and construction cost indices*, 1993-1995

	<u>MATERIAL</u>			<u>LABOUR</u>			<u>TOTAL COST</u>		
	<u>1993</u>	<u>1994</u>	<u>1995[†]</u>	<u>1993</u>	<u>1994</u>	<u>1995[†]</u>	<u>1993</u>	<u>1994</u>	<u>1995[†]</u>
Residential Buildings	58.5	3.8	14.3	22.3	15.3	32.2	52.8	5.2	16.7
Non-Residential Buildings	72.0	3.9	6.4	22.3	15.3	32.2	61.9	5.6	10.8
All Buildings	64.7	3.9	10.4	22.3	15.3	32.2	57.0	5.5	13.8
"Other" Construction	52.7	2.0	31.4	22.3	15.3	32.2	40.9	6.5	31.7
TOTAL COST INDEX	61.4	3.4	15.8	22.3	15.3	32.2	51.6	5.8	19.4

* From December to December
† Provisional

Source: Economic Survey 1996 (RoK, 1996:165)

sector provides opportunities from its labour-intensive technologies. In 1992, the sector's performance deteriorated significantly; real GFCF dropped by about 14% due to depressed investment in residential and non-residential buildings.⁵¹ This was imputable to the high cost of building materials and other inputs, high interest rates, coupled with Government financial austerity measures and economic recession in general. However, the sector recorded modest growth in 1995 relative to 1994 (RoK, 1994; CBS, 1996).⁵²

Building materials generally constitute the single largest input into the construction of housing, accounting for up to 80% of the total value of a simple house. In Kenya, building materials comprise approximately 70% of the total construction cost for the improvement of housing, infrastructure and community services (RoK, 1994). Studies in the South have evinced that up to 60% of the materials for all kinds of construction work were imported (Erkelens, 1991).⁵³ In the Umoja II project in Nairobi, supposedly a specially designed low-income housing project, imported materials accounted for 36% of the total material costs (Agevi and Syagga, 1988).

The building materials industry in Kenya, like in many other Southern countries, has a number of inexpedient characteristics. These include a high import content of some products, under-utilization of installed capacities in many of the factories and plants, and requirement of specialized skills to produce the materials. Some of these factories are also costly to maintain

⁵¹Construction plays a dominant role in gross fixed capital formation (GFCF) which includes the outlays of government, industries, and private non-profit institutions for their stock of fixed assets; this includes the infrastructure for essential economic and social activities, such as the provision of safe drinking water, adequate sanitation and power, transportation and communications, educational and health facilities, and facilities for diverse industrial enterprises. Construction and infrastructure generally constitute between 40% and 70% of GFCF in the South. Within the demand for construction, 35% to 40% is for residential stock, 22% to 27% for non residential buildings, and between 35% and 38% for infrastructure. (Moavenzadeh, 1987: UNCHS/ILO, 1995).

⁵²The improved performance was attributable to a number of factors, including the general economic recovery; increased commercial bank loans to building and construction of private enterprises; the significant drop in interest rates during the first half of 1995; the stability of the Kenya Shilling against the major world trading currencies; and increased Government expenditure on road construction activities (CBS, 1996).

⁵³In the Housing Indicators Programme, 18 of the 52 cities considered had imported materials representing more than 20% of the value of residential construction materials (UNCHS, 1996).

owing to specifications for imported parts. the companies are further characterized by constraints of hard currency (Syagga, 1993).

Table 2.6 presents data series on building and construction cost indices between 1993 and 1995. The rise in construction costs in 1995 was attributable to the continued rise in labour and material costs. The prices of materials including fuel, sand and aggregates, were adjusted upwards by the suppliers during the year, contributing to the increase in material costs. Labour costs recorded a rise mainly due to an agreement signed in 1995,⁵⁴ which affected unskilled, semi-skilled and skilled categories of workers (RoK, 1996).

2.7.4 Housing Finance

Next to land and building materials, housing finance is possibly the most important factor in housing production—and may even be considered the most important given that adequate finance can facilitate the purchase of the land and the materials. The extent to which housing finance is available, the terms under which it is available, and the proportion of the population that can obtain it significantly influences not only housing, but also cities (UNCHS, 1996).⁵⁵ In Kenya:

The most obvious constraint to housing development has been the shortage of, and more particularly, inaccessibility to funding for the middle and low income groups even where funds are actually available (RoK, 1989:248).⁵⁶

The housing finance sector comprises a three tier market which is supposed to be served by an elaborate financial system. At the top of the income hierarchy, constituting approximately 5.2% of the total, are households able to afford high quality housing in fully serviced neighbourhoods. The middle income bracket, composed largely of wage and salary earners employed in the public and private sectors and self-employed individuals, comprises about 25% of total households. However, it is not adequately catered for in the housing market and, consequently, encroaches into housing targeted for the lowest income bracket, which consists predominantly of low-income earners in both the formal and informal sector who form nearly 70% of total households (RoK, 1994).⁵⁷

⁵⁴The Collective Bargaining Agreement between the Kenya Association of Building and Civil Engineering Contractors and the Kenya Building, Construction, Timber, Furniture and Allied Industries Employees Union.

⁵⁵However, the question of whether the promotion of housing and housing finance can contribute to economic development is one on which there is no consensus between economists. What is fairly certain is that in most Southern nations housing is accorded a relatively low priority, and international aid agencies provide relatively little finance for investment in housing (Boleat, 1987).

⁵⁶This contradicts Etherton's (1971:79) assertion that: "it is the lack of land, not finance which constrains housing development in Nairobi."

⁵⁷See Renaud (1987) for a parallel analysis of the typical three-tier structure of the housing markets found almost throughout the South which is generated by the difficulty of obtaining finance and other major constraints regarding physical and institutional infrastructure.

Three main sources for financing housing in the public and private sectors in Kenya can be distinguished: formal, quasi-formal and informal financing (Erkelens, 1991).

- *Formal housing finance systems:* Public sector housing is financed by the Government. Funds from the Treasury are channelled through ministries which in turn direct them to various institutions, including local authorities, the NHC and financial institutions. Private sector financing of housing comes from banks, non-bank financial institutions, employers, savings and credit cooperative societies and individuals. International agencies also provide loans for financing of housing development.⁵⁸
- *Quasi-formal housing finance systems:* Include the provision of finance by a legally constituted body which does not have the characteristics of formal loan, such as employment-related co-operatives, building groups and welfare revolving funds.⁵⁹
- *Informal housing finance systems:*⁶⁰ These involve finance with no legal basis or even written agreements, and include flows of funds within kinship, friendship and employment networks.⁶¹

Fiscal and monetary policies have created rigidities in housing finance market systems and banking regulations that have not only made it difficult for the urban poor to obtain mortgage facilities, but also inhibited prospective developers from obtaining bridging financing for housing development especially for the lower income groups (Syagga, 1991).⁶² There have also been a number of other constraints to the participation of formal financial agencies in housing. These have included: the Banking Act, which authorizes only mortgage finance companies to provide funds for the purchase, improvement or alteration of land; insistence by the Building Society Act that societies lend only on a freehold or leasehold title; unrealistic affordability criteria; and non-compliance with planning and building regulations for the majority of schemes in informal settlements (Agevi, 1991). Other problems confronting housing finance institutions, as identified by Sennik (1991), relate primarily to the age of the institution. The older establishments are relatively liquid and have substantial resources which remain unrequested owing to the inability of potential home buyers to afford the houses available in the market. The newer institutions

⁵⁸These have included: the World Bank group (International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA)); United States Agency for International Development (USAID); and Commonwealth Development Corporation (CDC)

⁵⁹Housing co-operatives that mobilize individuals' finances and labour on a community basis operate within this sector. However, they commonly do not function very successfully (Erkelens, 1991).

⁶⁰See Boleat (1987) for a helpful treatise on formal and informal housing finance systems.

⁶¹Informal and quasi-formal sources of finance can play a significant role in low cost housing development. In the first phase of the Dandora site-and-service project, for example, the former constituted 72% of the funds invested in housing, while the latter accounted for 25% (Agevi, 1991).

⁶²Endeavours to provide access to credit facilities to the lower income groups and others engaged in the informal sector are not unknown. Rural-Urban Credit Finance Company was a non-bank financial institution founded for this purpose, although not specifically for housing finance. But, like a number of similar institutions established at about the same time, the establishment collapsed with ruinous consequences for numerous depositors.

have to maintain a large proportion of their credit by way of liquidity, and thus have limited funds for granting loans.

2.8 Legal and Regulatory Framework for Housing Development in Kenya

Building acts, codes and regulations are the means by which authorities control construction activities for the purpose of ensuring safety and health in the built environment. Similarly, standards and specifications for building materials production and use safeguard quality production of products. These regulatory procedures largely determine the types of building materials, construction techniques and skills to be used in a given construction process (UNCHS, 1996).

2.8.1. Building By-Laws and Planning Regulations

Numerous countries in the South have either inherited or adopted the codes and standards of the North.⁶³ These largely achieved their objectives up to 1939, when urban growth was low. However, after 1950 the situation changed; urban areas grew so rapidly that building regulations were commonly ignored or regarded by most people as inappropriate or irrelevant (Cook, 1984). In most cases, prevailing standards and regulations are thus obsolete and out of context, relating little to the realities of the contemporary South (Drakakis-Smith, 1981). The negative impacts of defects in building codes and standards on the housing situation are manifested by the low quality of building materials and construction techniques utilized in low-income settlements (UNCHS, 1987).

The regulatory framework controlling urban housing development in Kenya was introduced during the colonial era and was fundamentally conceived for a White settler minority. The predominant legislation governing the planning, design and construction of buildings in urban areas is the Building Code of the Republic of Kenya (RoK, 1968).⁶⁴ The Code comprises two distinct local government orders, namely:

- (i) The Local Government (Adoptive By-Laws) (Building) Order 1969, generally referred to as the Grade I By-Laws; and

⁶³Building codes and standards are a by-product of later 19th century European health Acts, the formulation of which was stimulated by the widespread diseases and plagues of the day. Building codes, stipulating minimum basic requirements for the siting, size and construction of residential buildings supported the health acts. By-laws under town planning legislation subsequently extended building control (Cook, 1984).

⁶⁴For a list of additional legislation impacting on urban housing development, particularly for the lower income groups, see Appendix 4.1

- (ii) The Local Government (Adoptive By-Laws) (Grade II Building) Order 1968, commonly referred to as the Grade II By-Laws.⁶⁵

The Code, which is applicable throughout the country, is adoptive and not mandatory. Adoption of by-laws is by resolution of the local authority; adopted by-laws (in this case building by-laws) are effectively the same as if made by the local authority adopting them. As most local authorities have, in fact, adopted these Orders since their promulgation in November 1968, they govern virtually all construction of buildings within urban areas. The Code encompasses most aspects of building, including town planning, siting and space around buildings, internal room dimensions, building materials, water supply, sanitation, drainage, fire precautions as well as approval procedures.

Two specific sets of by-laws which are directly concerned with low-income housing are contained in the Building Code: (i) Scheduled Special Areas and Special Building By-Laws 215-227 of the Grade I By-Laws;⁶⁶ and (ii) Grade II By-Laws.

The Grade II By-Laws assume either no services or only a limited number, and may be adopted by any municipal or county council. The by-laws are applicable to all land within the council's jurisdiction except where otherwise specified by the council following approval from the Commissioner of Lands, and except where Grade I By-Laws are applicable. They control minimum areas of plots and buildings, siting and erection of buildings; and also stipulate minimum space standards for habitable rooms, kitchens, bathrooms and latrines. They further give specifications for the materials and construction of foundations, floors, walls and roofs. The by-laws however permit the use of "temporary" materials, such as mud-and-wattle and adobe blocks for walling, and thatch for roofing. Non-water borne sanitation is likewise permissible, provided particular conditions are complied with. Certain regulations can also be wholly or partially waived by the local authorities, either on advice from the Commissioner of Lands (e.g. plot size and plot coverage in Grade II areas), or on advice from the Public Health authorities (e.g. siting of pit latrines). Scheduling of Grade II areas requires the approval of the Commissioner of Lands.

The regulatory framework is a constraint to low-income housing development for manifold reasons including the following:

⁶⁵Under the provisions of the Local Government Act, the Minister may by Order:-(a) make adoptive by-laws in respect of any matter in which a local authority has power to make by-laws under the Act or any other written law; and (b) specify the extent to which the by-laws may be adopted by any local authority, or class of local authorities.

⁶⁶Clauses 215-227 of the Grade I By-Laws stipulate various specifications for habitable rooms, cooking areas, ablutions, washing areas, latrines and refuse bins.

- The standards, which are a colonial heritage for the most part modelled on British building regulations, are both anachronistic and incongruous within the local context. They are generally inappropriate to the socio-economic status, needs, priorities, resources, aspirations, and cultural values of the majority of the indigenous urban population.
- The standards have simply been imposed in the urban areas, and are consequently not in accord with the local conditions, resources, building traditions, and socio-economic and cultural traits of the indigenous population.
- The standards are not based on a consensus, but rather were purposed to control middle and high income housing development, and thus do not reflect the needs, priorities, preferences and resources of the urban poor majority.
- The standards are unrealistically high and are unaffordable not only by the majority of urban inhabitants, but likewise by the greater number of public agencies involved in housing development.
- The standards are for the most part material-specific rather than performance-oriented and frequently require the use of relatively expensive, imported materials and components, which are sometimes not readily available.
- The imposition of exorbitantly high standards is both a constraint and a disincentive for residents of informal settlements to improve their housing conditions, and also precludes the use of multifarious housing resources.
- Housing that is constructed in compliance with the standards has to go through tedious bureaucratic and statutory procedures.
- There is a dearth of qualified personnel in the public agencies responsible for housing development to ensure that standards are conformed to.
- Strict adherence to existing standards may cause an escalation in costs in the low-income rental housing market, resulting in an increase in overcrowding, gentrification and homelessness.

2.8.2 Undertakings to Revise the Building By-Laws, Planning Regulations. and Housing and Infrastructure Standards

The rationale, exigency and utility of reformulating planning, building and infrastructure standards and statutory requirements which are germane to the local context have been reiterated consistently. Indeed, the 1979-1983 Development Plan (RoK, 1979) noted that the adoption of appropriate standards applicable to urban housing and particularly to low-cost housing remained an unresolved issue. There have since been various endeavours to revise planning, building and infrastructural legislation, regulations and standards.

Table 2.7: Annual housing production in urban areas in recent years

	Assumption A*	Assumption B*
Total "dwellings" produced	40,000	40,000
Total formal production	7,330	14,627
Private formal	1,702	1,702
Civil servant housing	763	763
Other government formal	4,865	12,162
Informal production	32,670	25,373
Informal as percentage of total	82	63

*Assumption A assumes one dwelling unit in each formal sector unit;
*Assumption B assumes an average of 2.5 dwellings per formal unit for selected types of formal units.

Source: National Housing Strategy for Kenya 1987-2000 (RoK, 1987)

The comprehensive study of low cost housing by-laws commissioned by the Government in 1979 with World Bank funding was a paramount effort.⁶⁷ Other noteworthy undertakings include the review of the Town Planning Handbook by the Physical Planning Department, and the adoption of lower planning and building standards by some local authorities in various housing projects.⁶⁸ The Housing Research and Development Unit (which has since been upgraded to the Housing and Building Research Institute) has also produced a number of pertinent research publications

The most significant initiative concerned with the issue of affordable standards to date is "Code '92", as the revised by-laws are popularly referred to. Code '92 comprises the revised Clauses 215-232 of the Grade I By-Laws which cover scheduled special areas and special buildings. The revised by-laws are performance-oriented as opposed to material specific, as was formerly the case. Performance codes afford builders more latitude as they need only meet performance requirements which they can do by any admissible means. It is anticipated that the revised standards will facilitate not only incremental improvement of the existing low-income housing stock, especially in informal settlements, but also the construction of new affordable housing for the urban poor majority. However, concern was expressed that the revised standards were not low enough even before they became legally operational. Their appropriateness to settlement upgrading has likewise been queried (Shelter Forum, 1993).

2.9 Formal Housing Sector Performance

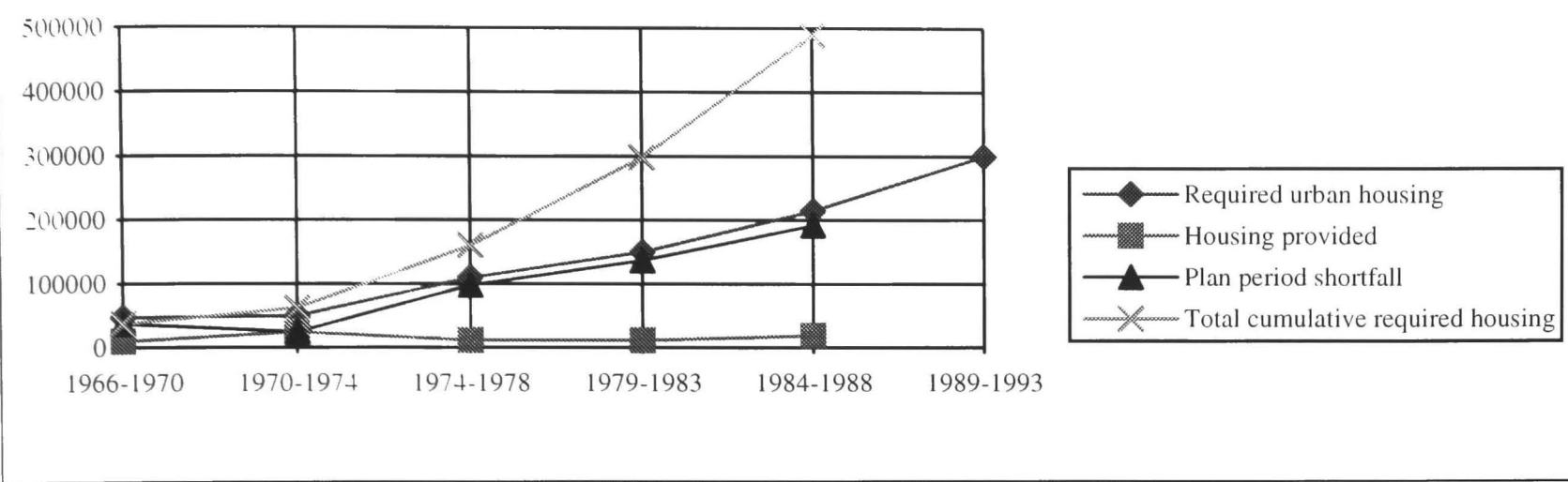
2.9.1 Public Sector

Public sector participation in housing development is not limited to production of housing units; it also includes provision of land and related infrastructure and services. In addition, the

⁶⁷ An Interministerial Committee was subsequently constituted to formalize the modalities of transforming the recommendations into implementable legislation. However, although approved by both President and the Cabinet in 1985, the revised by-laws have yet to be fully implemented.

⁶⁸ A prime instance of the latter is the Umoja II Housing Project in Nairobi funded by USAID in which relaxed standards were applied.

Figure 2.1: Urban housing requirement production in recent years



Government is responsible for the formulation of the regulatory framework for housing development and likewise regulates the fiscal and monetary policies. Most of the housing produced by the formal sector has been developed by public agencies with both local and overseas funding. The principal agencies include the National Housing Corporation (NHC),⁶⁹ local authorities and government ministries that develop institutional and pool housing (RoK, 1987; Syagga *et al.*, 1989; Syagga, 1991).

The greater part of the housing produced with public sector funding has been subsidized with both below market interest rates on loans and minimum or no charges for land.⁷⁰ However, subsidies have commonly failed to reach the intended beneficiaries as the housing authorities have either ignored or been unable to devise procedures and methodologies for identifying and

Table 2.8: Approved and actual Central Government expenditure on housing, 1991/92-1995/96

YEAR	APPROVED	ACTUAL	Approved expenditures as percentage of total development expenditure
1991/92	6.03	9.50	0.55
1992/93	4.16	4.76	1.35
1993/94	28.68	8.96	2.22
1994/94	21.21	8.23	1.24
1995/95*	9.46		0.48

* Provisional
Source: Economic Survey 1996 (RoK, 1996)

⁶⁹See Mutero (1993) for an evaluation of the National Housing Corporation.

⁷⁰For example, local authorities acquire loans from Government particularly for the rental schemes at interest rates of 6.5% with repayment periods of 40 years; market rates of interest are presently up to 23% with maximum repayment periods of 20 years.

Table 2.9: Housing units completed by the National Housing Corporation, 1991-1995

<u>PROVINCE</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995*</u>
Nairobi	2				
Coast	68		23	952	42
North-Eastern	...			66	
Eastern	128				
Central	...	40			
Rift Valley	...	40			
Nyanza	...				
Western	90	102			
TOTAL	288	182	23	1,078	42

* Provisional

N.B. Include upgrading of informal settlement in Nyeri Town (Central Province)

Source: Economic Survey 1996 (RoK, 1996)

allocating the housing to the target groups.⁷¹ Upward filtering has consequently occurred; housing developed for low income groups has evolved into middle income private housing after allocation and thereafter been subject to prevalent market forces.⁷² Ultimately, most public sponsored projects end up being acquired by upper income groups and subsequently rented out at exploitative rates or sold to non-target groups at high profits⁷³ (Macoloo, 1988; Syagga *et al.*, 1989; Sennik, 1991; Syagga, 1991; 1992).

However, while public agencies have been unable to provide adequate housing, the role of the private and community sectors (including NGOs and CBOs) in housing production has been frustrated by official legislation such as planning ordinances, building by-laws and standards, rent controls, etc. Some of the statutory requirements make the provision of affordable housing for the lower income groups by the formal private sector impracticable (Syagga *et al.*, 1989).

Since the mid-1980s, there has been a systematic withdrawal of the State (local authorities) from involvement in housing provision.⁷⁴ This has been due partly to a change of policy away from

⁷¹Korboe (1992) asserts that policy briefs of multilateral and bilateral funding agencies have largely ignored the impact of corruption on the housing circumstances of low-income groups. Certainly, evidence exists of numerous plots in sites and service schemes surreptitiously changing hands from the original allottees to the upper income groups. Macoloo (1988:166, citing the NHC, 1980) affirms that: "the allocation of site and service schemes has also been hit by scandals resulting from politics, misuse of power, and sheer dishonesty".

⁷²Hardoy and Satterthwaite (1989:107) observe that public houses programmes initiated in a number of countries in the South, including Kenya, in the 1960s and 1970s were dogged by three problems: unit costs were high, so that few units were constructed relative to needs; middle or upper income groups ended up as the main beneficiaries; and designs and locations were ill-matched to poorer groups' needs. Macoloo (1988) similarly asserts that Government-sponsored low-cost housing projects in Kenya would be affordable by an insignificant number of the target population. Thus, housing would invariably be acquired by the upper income groups who would subsequently rent it out to the poor at exploitative rates. Syagga (1989; 1991) contends that this is an indication that the provision of high standard housing is an investment good that requires no subsidy.

⁷³In the Dandora and Umoja "low-income housing" projects in Nairobi, approximately 75% of the households are renters (Syagga *et al.*, 1989). This is despite the fact that a fundamental objective of the former project was to control speculation and profit-making at the expense of the lower income groups (Malombe, 1992). Similarly, in two low-income housing schemes in Kisumu, Macoloo (1988) found that the monthly income of the majority of the residents was above the upper limit for eligibility for the schemes; a clear indication that the target population is not being reached.

⁷⁴According to UNCHS (1996), the move from state-dominated shelter policies to the enabling approach was signalled with a 'Sessional Paper on Housing' in 1986, followed a year later by a National Housing Strategy and a new Housing Policy Paper in 1990. This is not altogether true; the revised housing policy is yet to be promulgated.

Table 2.10: Reported completion of new public and private buildings in main towns, 1991-1995 (Number and value-K£ million)

	<u>RESIDENTIAL</u>				<u>NON-RESIDENTIAL</u>			
	<u>PRIVATE</u>		<u>PUBLIC</u>		<u>PRIVATE</u>		<u>PUBLIC</u>	
	<u>Number</u>	<u>Value</u>	<u>Number</u>	<u>Value</u>	<u>Number</u>	<u>Value</u>	<u>Number</u>	<u>Value</u>
1991	177	(2.89)	1,264	(40.90)	20	(1.10)	71	(63.52)
1992	167	(2.73)	1,559	(43.65)	19	(1.05)	52	(62.78)
1993	144	(2.46)	1,305	(35.92)	16	(0.94)	54	(50.50)
1994	141	(2.40)	1,062	(38.41)	15	(0.92)	71	(56.97)
1995*	129	(2.19)	1,289	(46.03)	13	(0.82)	54	(66.21)

* Provisional

N.B. Value of new public buildings includes value of extension; value of new private buildings excludes value of extensions

Source: Economic Survey 1996 (RoK, 1996)

formal housing provision towards a more enabling role, but also as a result of public expenditure curtailment and the desperate financial circumstances of the local authorities. The withdrawal has especially affected the middle-income groups. As a result, sophisticated informal sector developers have evolved to meet the demand. This development provides housing stock comprising permanent dwellings that, although technically unauthorized, does have some infrastructure (e.g., septic tanks), and is frequently politically sanctioned (Amis, 1996).⁷⁵

The public housing sector has, thus, realised only a fraction of the number of units called for in past National Development Plans, even if concession is given for the fact that the original targets may have been exceedingly ambitious. In sum, public housing programmes have made no significant impact on the low-income housing scene.

2.9.2 Private Sector

At present, although the private sector builds most of the conventional housing in cities in the South, relatively few of these units are affordable by the urban poor. On the other hand, as existing private sector housing deteriorates, suffers neglect and/or subdivision, and generally becomes substandard, it plays an increasingly important role in housing the lower-income groups. Still, the private sector is widely assumed to make a negligible contribution to housing the urban poor since profits are more readily available from constructing factories, shops, offices or luxury housing (Drakakis-Smith, 1981).

The private formal housing sector in Kenya is indeed preoccupied with profit maximization and, thus, concentrates on supplying housing for the middle and higher income groups. Its contribution to overall housing development has, however, varied significantly over the years. Between 1976 and 1982 the private sector contributed only 25% of the total recorded output of

⁷⁵UNCHS (1996) mentions that some developers operating outside the legal system become important because of their ability to anticipate what is likely to be officially or politically acceptable or because of their economic and political power. See also Gatabaki-Kamau (1995).

Table 2.11: World Bank funded Urban Projects in Kenya

<i>PROJECT</i>	<i>START DATE</i>	<i>BANK LOAN (US \$)</i>	<i>LOCAL FUNDING (KSHS)</i>	<i>PROJECT VALUE (US \$)</i>
Urban 1	1975	16,000,000	200,000,000	29,500,000
Urban 2	1978	50,000,000	576,000,000	69,400,000
Urban 3	1983	30,000,000	47,000,000	34,400,000

Source: After Syagga *et al.* (1989)

formally authorized housing (RoK, 1987). Conversely, between 1987 and 1994, the private sector contributed over 80% of the new residential buildings reported annually (RoK, 1994). An analysis of reported completion of new public and private buildings in the main urban centres by residential and non-residential categories is presented in Table 2.10.

Even in the Third Urban Project, private sector participation is limited to the development of housing for the middle income bracket. However, it is expected to impact on the lower income groups' accessibility to shelter.

2.9.3 World Bank Projects

The World Bank has sponsored three major low-income urban shelter projects in Kenya. The First Urban Project comprised 6,000 serviced plots in Dandora, Nairobi, and inaugurated a decade of significant World Bank involvement in urban and housing policy in the country.⁷⁶ The Bank's activities influenced later investments in low-income urban housing by other international development agencies, including EEC and USAID.⁷⁷ The Dandora Project was implemented on an experimental basis as an innovative learning experience in institutional development for managing urban projects. Completed in 1982, Dandora is the largest site and service scheme not only in Kenya, but also Africa.⁷⁸

The Second Urban Project incorporated settlement upgrading, for the first time, as an official aspect of housing policy in Kenya. A central objective of the project was to promote self-help in housing construction as well as to intensify the utilization of local building materials with a view to increasing employment opportunities in the building/construction sector (Macoloo, 1994). It comprised a further 9,000 serviced plots (Kayole and Mathare North) in Nairobi; 1,700 serviced plots and 1,000 upgrading plots (Mikindani and Chaani) in Mombasa; and 1,200 upgrading plots and 500 serviced sites (Migosi, Manyatta, and Nyalenda/Pandpieri) in Kisumu. The project was

⁷⁶As elaborated in the Appendix, owing to its financial dominance and paramountcy in terms of the resources it commands for lending to governments, the World Bank has been able to influence housing policy approaches, and principles and practice of housing development, in several Southern countries (Gould, 1992; Jones and Ward, 1994a; Pugh, 1994).

⁷⁷When international agencies became involved in funding low-income housing projects, it was anticipated that the approaches adopted would provide lasting and replicable solutions to the problems of housing the urban poor (Rakodi, 1991a).

⁷⁸In 1987, it housed approximately 100,000 people, i.e. 8% or 9% of the total population of Nairobi (Lee-Smith and Memon, 1988).

Table 2.12: Physical project components by towns - Servicing of urban land

	Site and service (full infrastructure) on public land	Site and service (partial infrastructure) public land	Servicing of private onland and joint venture	Upgrading of existing settlements on public land	Off-site and other infrastructure
ELDORET	—	1082 plots	3368 plots	300 plots	Extension of access roads, water mains and surface water drainage
KITALE	—	—	—	500 plots	—
NAKURU	763 plots	—	764 plots	91 plots	Extension of water/ sewer mains access roads, surface water, on-site sewerage reticulation for Pangani
NYERI	257 plots	59 plots	—	136 plots	—
THIKA	—	—	312 plots	700 plots	Extensions to water/ sewer mains and access roads
TOTAL	1000 plots	1141 plots	4444 plots	1727 plots	

Source: Syagga (1992:14)

completed in 1987. Most of the projects have been subsidized at up to 68.8% of the project cost (Gatabaki-Kamau, 1995; Lee-Smith and Memon, 1988; Syagga, 1992; Syagga *et al.*, 1989).

The Third Urban Project covered Kenya's five secondary towns of Nakuru, Eldoret, Thika, Kitale and Nyeri. In selecting the projects for these towns, the Government declared that all future provision of urban infrastructure will be based on the following principles (RoK, 1986):

- Government agencies will charge market prices for the services and facilities as the urban poor have rarely benefited from previous subsidies. The equity goal can also be achieved more effectively by charging market prices to the few who currently profit.
- Resources will be concentrated on those projects that offer lower construction and maintenance cost per beneficiary in order to maximize returns on public investments. Appropriate standards for the construction of infrastructure will be adopted, reflecting the relative scarcity of capital and the trade-off between lower capital costs initially and higher maintenance costs later.
- The involvement of the private sector and NGOs, either as a partner or the principal agent, in the provision of services and facilities will be promoted.

Based on these principles, the Third Urban Project aimed at providing access to about 14% of the population in the five towns in the form of serviced plots for housing and the requisite community facilities (Syagga, 1992). The physical project components of the Third Urban Project by towns are summarized in Table 2.12.

An additional component of the Third Urban Project was the strengthening of the financial and management base of the local authorities. To achieve this, 15% of the total project cost was allocated for the acquisition of the requisite equipment and software by the local authorities, and also for the training of staff, maintenance of the equipment, and carrying out of policy studies on low income housing, urban infrastructure and services, etc. (Syagga *et al.*, 1989).

In various project sites infrastructural standards were reduced and Grade II By-Laws permitted. In Bondeni in Nakuru, for example, murram roads and earth drains were constructed as part of the upgradation exercise.⁷⁹ In the Old Uganda and Kipkaren site and service schemes in Eldoret, Grade II By-Laws were applied. As a result, 82% of the sites in the former have been developed in semi-permanent materials, while in the latter the houses on 63% of the plots have mud-and-wattle walls, while only 16% are developed in permanent materials (Syagga *et al.*, 1989).

2.9.4 Co-operative Housing Programmes

Fundamentally, co-operatives bring together the resources of individuals on a collective basis; in general, they represent an extremely important factor in the finance market. Housing co-operatives can be used to provide diverse services including initiating projects, organizing finance and overseeing implementation, and thus have a paramount role to play in the implementation of the national housing strategy (Haywood, 1986; RoK, 1987).⁸⁰ Certainly, housing co-operatives have long been recognized as a most auspicious means of channelling private savings into housing investment, as affirmed by the 1970-1974 Development Plan (RoK, 1970).

In recent years, numerous housing co-operatives have been formed. The Government has played an active role in the promotion of co-operatives through the provision of central advisory services through the National Cooperative Housing Union Limited (NACHU). Established in 1979 in response to the need for decent housing among low income households, NACHU provides a range of professional services to housing co-operatives and to organizations and groups wishing to form co-operatives including: organization; planning; design; estate and financial management; and education and training.⁸¹

2.10 The Urban Informal Sector In Kenya: An Overview

According to Amis (1987:255), the informal sector now comprises two distinct elements: an 'intermediate' sector, capable of capital development, and a 'community of the poor'. The

⁷⁹See Chapter Eight for a detailed study of Bondeni.

⁸⁰Co-operatives may likewise be used at a larger operational level to promote development through actually undertaking construction, although at that level of operation they are likely to be of limited benefit to very low income groups (Haywood, 1986). See Obudho (1993) for a summary of the main benefits which accrue from the co-operative form of organization for self-help housing by low-income households.

⁸¹ See Gatabaki-Kamau (1984) and Obudho (1993) for further discussion on the role of co-operatives in housing development in Kenya.

Table 2.13: Comparison of the formal and informal sectors⁸²

	<i>FORMAL SECTOR</i>	<i>INFORMAL SECTOR</i>
Ease of access	Difficult to enter	Easy to enter
Main origin of resources	External	Indigenous
Scale of operation	Large	Small
Ownership	Corporate	Family
Technology	Capital-intensive and often imported	Labour-intensive and adapted
Skills	Formally acquired, often expatriate	Acquired outside the formal education system
Market	Protected through tariffs, quotas and trade licences	Unregulated and competitive

Source: UNCHS/ILO (1995:9)

fundamental division within the sector is the ability to accumulate capital. It is characterized by greater differentiation, increased security because of official acceptance of housing in unauthorized areas, and increasing constraints to entry.

The original assumption of 'ease of entry' into the informal sector has been questioned in light of minimum requirements of skills and capital. Moreover, there is evidence of informal sector workers defending their market niche, occasionally by force; 'freedom of entry' is frequently an outsider's illusion. Access controlled by kinship networks and/or politically reinforced monopolies commonly further reinforces this process (Amis, 1989). The following conclusions about the informal sector are thus tentatively suggested by Amis (1989:383-4):

- There is a process of capitalization and differentiation occurring in the informal sector (a) between sectors of activity and (b) between owners and workers.
- There is a tendency towards monopoly or barriers to entry in the lucrative areas. The mechanisms vary but include legalization, licensing and control by certain political, ethnic or kin groups.
- Employees' wages in the informal sector are related to formal sector wages. It is unsustainable for the trends to diverge in the long run except for few atypical sectors.
- The urban informal sector and rural non-agricultural income generating activities are structurally similar, albeit spatially separate.
- There is an increasing realization at the policy level of the importance of the informal sector; implementation of policies remains problematic and may in some cases even be counter-productive.

The productivity of and the demands from the informal sector are suppressed by a number of internal and external constraints. The former include lack of operating capital owing to insufficient income and savings; inadequacy of education of informal sector proprietors and

⁸²Alternatively, Santos (1979:20 cited by Haywood, 1986:334) divides the urban economy into two levels: (i) the upper circuit which utilizes an imitative, imported, high level and capital intensive technology; and (ii) the lower circuit in which technology is labour intensive and often either indigenous or locally adapted, but frequently has considerable innovative potential".

Table 2.14: Sources of employment and employment growth (millions)

<u>SECTOR</u>	<u>1991</u>	<u>1994</u>	<u>2001</u>	<u>INCREASE</u>
Small scale agriculture	5.31	5.92	7.00	1.08
Large scale agriculture	0.42	0.47	0.55	0.08
Rural formal (non-farm)	0.23	0.41	0.55	0.13
Rural informal	0.35	0.62	0.98	0.36
Urban formal	0.74	0.81	1.08	0.27
Urban informal	0.70	1.16	1.83	0.66
Total employed	7.77	9.40	12.	2.61
Total labour force	10.1	11.5	13.7	2.23
Unemployed (%)	23.4	18.5	12.8	-

Source: National Development Plan 1997-2001 (RoK, 1997:16)

workers; poor management skills of proprietors; and utilization of low productivity technologies. The principal external constraints are the prevalence of a hostile policy environment with government policies that are biased against the sector and which often exacerbate the constraints in terms of access to resources and markets; and government licensing requirements which require adherence to unrealistic standards and are, therefore, detrimental to its expansion (UNCHS, 1986).

The informal sector in Kenya has nevertheless continued to expand, frequent government harassment, particularly in urban areas, notwithstanding. The sector has attracted not only the unemployed, but also formal sector employees since its operation requires little capital and equipment, relies on local resources, and utilizes simple, labour-intensive technology (see Table 2.13). However, its growth may merely reflect a shift from open-unemployment to underemployment in the informal sector (RoK, 1996; 1997). Still, the proportion of employment in the formal and informal sectors has changed drastically since 1990, with the latter surpassing the former in employment creation. Between 1991 and 1994, informal sector employment grew by 16.1% per year on average compared to only 1.9% per year in the modern sector (see Table 2.14),⁸³ and by 1994 there were more people working here than in the modern economy for the first time (Pape, 1996).⁸⁴ The notable expansion of the sector underscores its potential for job creation and income generation.

An accelerated recovery of the economy since 1994 helped create jobs in both private enterprises in the modern sector and the expanding informal sector; hence in 1995, informal sector employment accounted for 58.1% of the reported total employment. Informal sector activities have historically been concentrated in urban centres, which accounted for 65.6% of informal

⁸³ Many of the jobs created in the informal sector do not pay well because productivity is very low. Hence, many are poorly remunerated and/or underemployed (RoK, 1997). Indeed, Livingstone (1991) mentions that one of the criterion applied to determine an activity or enterprise falls within the informal sector is its compliance or noncompliance with minimum wage legislation.

⁸⁴ The informal sector covers unregulated and semi-organized activities largely undertaken by self-employed people or employers with just a few workers. Typically, they do not comply with registration, licensing, and tax rules, and this sometimes leads to conflict with the authorities. Workers are frequently paid below the minimum wage and have no social security (Pape, 1996).

Table 2.15: Informal sector, 1992-1995: Number of persons engaged by activity

<i>ACTIVITY</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995*</i>
Manufacturing	342,653	418,252	492,439	616,854
Construction	17,884	20,591	26,015	31,554
Wholesale and retail trade, hotels and restaurants	777,263	909,879	1,126,218	1,405,450
Transport and communications**	18,961	23,642	28,862	35,070
Community, social and personal services	80,791	94,148	118,841	151,538
TOTAL	1,237,480	1,466,512	1,792,375	2,240,466

* *provisional*** *includes mainly support services to transport activity*

Source: Economic Survey 1996 (RoK, 1996:63)

sector employment in 1995. Distribution of informal sector employment by industry is presented in Table 2.15. The construction industry has constantly had the smallest share of persons engaged in the informal sector, between 1.4% and 1.5% from 1992 to 1995 (RoK, 1996).

2.10.1 Construction Activities in the Informal Sector

In most countries in the South, the informal sector is largely responsible for the provision of shelter in urban low-income settlements which accommodate the greater part of the population. However, because informal sector construction activity is inadequately enumerated and rarely accounted for in government statistics, it is difficult to estimate its contribution to the sector and to economic development (UNCHS, 1987; 1996)⁸⁵. However, Erkelens (1991) estimates the magnitude of the informal building and construction sector (residential, non-residential, maintenance, etc.) to be in the order of 30% of the total contribution of building and construction to the GDP. On the other hand, the formal building and construction sector has not been faring well in recent years. In 1992, the sector recorded a GDP negative growth rate of 2.7%, and the real GFCF dropped by approximately 14% due to depressed investment in residential and non-residential buildings. This was imputable to the high cost of building materials and other inputs, high interest rates, in addition to Government financial austerity measures and economic recession in general (RoK, 1994).

2.10.2 The Role of the Informal Sector in Supplying Housing for the Urban Poor

In the plurality of Southern countries, where the formal sector is less regulated and less entrenched, the informal production of building materials and shelter is extensive; its size and output is substantial. The sector typically provides more housing than all the suppliers in the formal sector combined. It is also the only conceivable source of owner-occupier housing for low-income households (Moavenzadeh, 1987; Tipple, 1987).

⁸⁵ According to Moavenzadeh (1987), it has been suggested that the average number of dwellings built by the informal sector is about four times the number enumerated by formal statistics.

Informal settlements have made a significant contribution to the supply of shelter for the lower income groups in Kenya. The UHS (RoK, 1986:13) affirms that

Even allowing for the fact that some households may share the same dwelling unit it can be concluded that in order to meet the additional housing demand a very large proportion of new urban housing, perhaps as high as 75 per cent is produced outside the formal system. Two common explanations for this are that the cost of building to the standard usually required by public authorities is beyond the means of most people and because the process of obtaining the necessary approvals is often lengthy, leading to long delays and increased costs.

In the 1980s, the urban population increased by a total of 2.75 million people. During the same period, the population of the informal settlements quadrupled. The annual growth rate of informal settlements in Nairobi was estimated at 22.5% in 1980. In Mombasa and Kisumu, it has been estimated that over 50% of the households reside in informal settlements. The average figure for the whole country is estimated at 30% (Macoloo, 1988). In recent years, the informal sector has been producing between 40% and 82% of the total annual housing production in urban areas, and approximately 500 unapproved dwelling units are erected in urban centres every week. Approximately 60% of the housing units built in urban areas lack minimally adequate urban services (RoK, 1987; Sang, 1990; Syagga and Malombe, 1995).

The cardinal role of the informal sector in urban housing supply has been recognized by the Government. As mentioned earlier, one of the principles underlined in the national housing strategy (RoK, 1987:8) is:

The resources of the informal sector will be exploited and encouraged to contribute more to the production of acceptable housing.

2.11 Summary

In this chapter, it has been established that urbanization and demographic trends in Kenya, in addition to occasioning escalating rural and urban poverty, have precipitated a massive urban housing deficit which primarily affects poor, disadvantaged and vulnerable groups. Despite the formulation of housing policy, strategies and programmes (articulated in consecutive national development plans) aimed at addressing the housing plight of the low-income majority in urban areas, public housing has been picayune in volume and exorbitant in cost owing to various constraints and the legal and regulatory framework for urban housing development. As a result, the informal sector is playing an increasingly important role in the supply of housing for the urban poor in Kenya's rapidly expanding cities and secondary towns.

With this background, the stage is set for a more comprehensive discussion of the development of the phenomenon of urban low-income informal settlements in the South and, more specifically, in Kenya.

Chapter Three

INFORMAL SETTLEMENTS: A PERVASIVE REALITY

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3.1 Introduction

Urban low-income informal settlements in the South represent a phenomenon which is not altogether unprecedented, neither in form nor in the planning problems it creates. Indeed, recounting the findings at Ur, one of the earliest known cities, Turner (1969:512) cites:

Houses were jumbled together, forming an irregular mass broken at intervals by open spaces . . . Streets were narrow, winding and unpaved and lacked adequate drainage. They became the chief repositories of refuse thrown from the houses . . . The disadvantaged members of the city fan out toward the periphery, with the very poorest and the outcasts . . . the farthest removed from the [centre]. Houses toward the city's fringes are small, flimsily constructed, often one-room hovels into which whole families crowd . . .

There are, however, some radical differences between the pre-twentieth century cities and the metropolitan areas in the South in which informal settlements have developed. One is that the latter are generally far larger than the largest cities before modern industrialization and prevailing urbanization rates began (Turner, 1969).¹

In recent years, urban settlement and housing problems in the South have reached overwhelming proportions. Informal settlements inhabited by the urban poor, in particular, have become a major concern of central and local governments, policy-makers, multilateral and bilateral aid agencies, non-governmental organizations, as well as urbanologists, anthropologists, professionals, practitioners, and academics of various disciplines. Most of the early scholarly work was based on experience in the North or propounded in the context of Latin America. And much of the academic endeavour has concentrated on the identification of (physio-environmental and socioeconomic) characteristics of low-income residential areas; conceptualization of the characteristics, nature and function of informal settlements; taxonomic classifications as a means to understanding the development processes in operation; and generalization on appropriate improvement strategies.

This chapter begins with an overview of urban low-income informal settlements in the South, followed by a review of some of the myths and realities of informal settlements. Various concepts and theses that have been postulated in the study of urban low-income residential areas in the South are discussed, as well as developmental typologies, classificatory analyses and improvement strategies that have been advanced. The development of the phenomenon of informal settlements in Kenya is examined, and various studies of informal settlements in Kenya that have been undertaken are surveyed. The chapter concludes with a methodological proposal of classificatory analysis of informal settlements in Kenya based on characteristics and factors that may be of operational relevance to effective improvement strategy formulation, programme options and project design.

¹See also the discussion on the urbanization process in the South in Appendix One.

3.2 Housing and Urban Poverty in the South

Between 20% and 25% of the world's population live in absolute poverty, lacking the income or assets to construct, rent or purchase adequate shelter with basic services such as water supply and sanitation and to ensure an adequate diet; more than 90% of these live in the South (UNCHS, 1996a; 1996b). It is also estimated that about 25% of the total global urban population and between 30% and 60% of the urban population in the South are poor (Urban Edge, 1991).²

Although the number of people living in absolute poverty in rural areas in the South remains higher than in urban areas,³ the scale of urban poverty has been greatly underestimated.⁴ Due to continued rapid urbanization, the proportion of the world's population living in urban areas is set to surpass that living in rural areas for the first time within the next two decades.⁵ At the same time, poor urban dwellers will likely be increasing in number at a faster rate than their rural counterparts; indeed, they are already greater in absolute terms in some Southern countries. By the year 2000, over half of the South's poor will be urbanites (Amis, 1995; Towfighi, 1987; Urban Edge, 1992; Wratten, 1995).⁶ And, "urban poverty will become the most significant and politically explosive problem in the next century" (World Bank, 1991:4).

Poverty has become increasingly concentrated in urban areas in the South during the 1980s and 1990s for both demographic and economic reasons.⁷ Deteriorating macro-economic conditions, poor economic performance and/or structural adjustment and stabilization policies have been

²Alternatively, the World Bank (1990) estimates 80% to 90% of the one billion poor people around the globe live in rural areas.

³Hardoy and Satterthwaite (1989) reckon that people suffering from poverty in urban areas outnumber those suffering from poverty in rural areas in possibly a quarter of all nations in the South. The World Bank, cited in Harriss (1989), has projected that by 2000, not only will 80% of GDP in the South be produced in urban areas, but also 57% of all poverty-level households will live in them. There will also be an absolute decrease in the number of rural households living in poverty (from 83 million in 1975 to 57 million in 2000), while the number of poor urban households will more than double (from 34 million in 1975 to 74 million in 2000).

⁴Satterthwaite (1997) asserts that if poverty means human needs that are not met, then most of the estimates for the scale of urban poverty in the South appear too low. Indeed, research in the late 1980s and early 1990s found that the extent of urban poverty had been greatly underrated—largely because poverty lines were set too low in relation to the cost of living in urban areas (UNCHS, 1996a). One reason why income based poverty lines are set too low in relation to living costs is the assumption that living costs are uniform, irrespective of where the household lives (Satterthwaite, 1997). The poverty line approach also fails to capture the dynamic nature of poverty; the diversity of possible strategies, which are dependent upon individual household circumstances; or the salience of intra-household distributional issues and gender relations (Amis and Rakodi, 1995). Furthermore, the conventional 'poverty line' definition neglects the perceptions and priorities of the poor themselves (Harriss, 1989).

⁵Cities are absorbing two-thirds of the South's total population increase (Juppenlatz, 1991).

⁶While the demographic shift to urban areas is generally undisputed, assertions about the urbanization of poverty are based on several controversial assumptions regarding the definition of urban areas, the nature of poverty and its measurement. This is commonly disregarded in analyses of the problems of the 'urban poor' (Wratten, 1995). In most empirical work on poverty, data limitations dictate the definition of poverty used. The implications of adopting alternative definitions are, thus, seldom considered, even though different definitions of poverty can lead to the formulation of very different policy measures to reduce poverty (Glewwe and van der Gaag, 1990). Certainly, more research is needed in the determinants and characteristics of urban poverty (de Haan, 1997a). Moreover, "[if] governments are to reduce poverty or to judge how their economic policies affect poverty, they need to know a lot about the poor" (World Bank, 1990:29).

⁷De Haan (1997a) maintains that although there appears to be a consensus that urban poverty increased during the 1980s, reliable data to substantiate this are lacking. Indeed, Satterthwaite (1995b) holds that if the most widely quoted estimates of urban poverty in the South are correct, the proportion of the urban population 'living in poverty' must have reduced considerably during the late 1970s and the 1980s. Similarly, Gilbert (1994) affirms that urban poverty has increased in most of Africa and Latin America since 1980, but has decreased in most of Asia.

major causal factors.⁸ Consequent adaptation processes due to reduced subsidies, increases in the price of food and basic commodities, stagnant or declining real wages; redundancy in the formal labour market; radical reduction in public expenditure on basic services and infrastructure coupled with the sacrifice of maintenance spending to budgetary economies, devaluation and increased indirect taxation have disproportionately affected low-income households⁹ (Amis, 1995; Baharoglu, 1997; Cohen, 1990; de Haan, 1997a; Harris, 1989; Gilbert, 1994; Rakodi, 1995a; Satterthwaite, 1997; UNCHS, 1996a; van Lindert, 1992; Wratten, 1995;).

Urban poverty and social inequality in the South are perhaps manifest most patently in the field of housing (McGee, 1967; Potter, 1985; O'Conner, 1991; World Bank, 1993). Not infrequently, as David Smith (1996) observes,

[informal settlements] are physically in the shadow of . . . monuments to opulence [skyscrapers, suburban "gated communities", and five-star hotels]. "Underdevelopment" and "overdevelopment" (sic) literally exist side by side (p. 1) . . . There is a yawning gap in housing standards separating [the] fortunate few from the city's masses (p. 52).

In many cities, 60% or more of the population of the urban poor live in informal settlements. In the absence of reliable statistics on poverty based on household's incomes and assets, estimations of the scale of poverty can be based on the number of households living in inadequate housing¹⁰ that lacks basic infrastructure and services fundamental to good health.¹¹ Although estimation of levels of poverty based on these criteria can be fallacious, it generally gives a more realistic account of the urban population living in poverty (Satterthwaite, 1995b; UNCHS, 1995b; 1996a).¹² Thus, Satterthwaite (1995b) affirms that the proportion of urbanites living in very poor housing is substantially higher than that said to live in 'absolute poverty' by official statistics.¹³

⁸See Cohen (1990) for a summary of the impact of the constrained economic circumstances of the 1980s on the nature of urban problems in the South, the perception of those problems and the solutions offered.

⁹De Haan (1997a) affirms that the urban poor are further vulnerable because of insecure tenurial status, environmental conditions that endanger their health, and susceptibility to violence. Baharoglu (1997) similarly links vulnerability to owning assets—the fewer assets households possess, the more vulnerable they are. The principal assets are: labour, housing, household relations (a household's composition and the cohesion of its members) and social capital (the norms, trusts and reciprocity networks that facilitate mutually beneficial community cooperation). In this regard, Baharoglu mentions that research on poverty within the World Bank suggests a replacement of the static focus on urban poverty by a more dynamic concept of vulnerability.

¹⁰Cairncross and his co-authors (1990), however, assert that it is impossible to estimate with any precision what proportion of the urban population in the South live in inadequate housing with inadequate provision for water, sanitation and other basic needs. However, case studies of specific cities show that it is not uncommon for between 30% and 60% of the population to live in illegal settlements or in tenements and cheap boarding houses. But, because of the difficulty of defining and measuring housing conditions across countries and cities, Linn (1983:9-10) maintains that "estimates of the incidence of slum and squatter areas in selected countries of [the South] must . . . be taken with a large grain of salt."

¹¹Inadequate housing has a direct impact on poverty: poor housing conditions can lead to increased morbidity and mortality, particularly among the more vulnerable groups. All indicators of housing quality improve with higher incomes and economic development (World Bank, 1993).

¹²UNCHS (1995b) expounds that from the human settlements perspective, poverty is not solely a matter of inadequate purchasing power. Exclusion of considerable elements of society from economic and social development leads to their marginalization: they are severely constrained in their accessibility to adequate shelter conditions, cannot avail themselves of services and amenities, and do not participate actively in decision-making.

¹³If the 600 million urban dwellers in the South who live in 'life- and health-threatening' dwellings and neighbourhoods because of the very poor housing and living conditions and the lack of basic infrastructural services and health care are considered 'poor'—for it is their lack of income

Low incomes, not needs, underlie the inadequate housing conditions of the urban poor, their inability to maintain adequately such shelter as they are able to secure, and their incapacity to purchase or support a revenue basis sufficient to finance the provision of public services and amenities, such as water supply, sanitation, power, health, education, etc. (Hardoy and Satterthwaite, 1984; Harris, 1989). Quite simply: "Poor housing exists because poor people exist" (Abu-Lughod and Hay, Jr., 1977:291); "the [Southern] urban poor cannot afford to purchase houses that are properly surveyed, built and serviced (Potter: 1985:89-91). While governments can do much to facilitate access to adequate shelter, they cannot readily make up for an overall deficiency of income (Hardoy and Satterthwaite, 1984; Harris, 1989). Hence, the general elimination of informal settlements from the urban complexes of the South is an unattainable goal—"[they] will remain unless poverty is eliminated" (McKee, 1994:147)

Thus, although urban incomes are, as a rule, higher and services and amenities more accessible, poor urbanites suffer more than rural habitants from certain aspects of poverty. These include being constrained to living in insalubrious informal settlements that have developed on often illegal and perilous sites with inadequate infrastructural services;¹⁴ forcible eviction; dire overcrowding; and industrial pollution. Still, most urban households, including the poorest, have some form of accommodation (Leonard and Petesch, 1990; World Bank, 1990; 1993).

3.3 The Legal and Illegal City

Since antiquity, the poor have always created their own habitats—their dwellings and neighbourhoods (Hardoy and Satterthwaite, 1987a). This has almost invariably been done outside the official 'legal' city of the élite and contrary to their norms and regulations, and in the worst of the city's quarters. The latter half of the present century has seen illegal housing—dwellings and neighbourhoods organized, planned and built outside the legislative framework of respective nations—become the major source of inexpensive new urban housing in the South. In most cities, 70% to 95% of all new housing is constructed illegally (Hardoy and Satterthwaite, 1990).¹⁵ Thus, most cities afford inexpensive low quality housing, enabling poor households to disburse a reduced proportion of their income on housing and expend greater

and assets that makes them unable to afford better quality housing and services—it significantly increases the scale of urban poverty, when compared to income-based poverty lines (UNCHS, 1996a). See also Cottam (1997) for a novel exposition of urban poverty in which infrastructure is applied as a discursive framework.

¹⁴ Asthana (1994) affirms that because urban bias has neither lessened poverty nor increased basic service provision in low-income areas, poor urban dwellers do not enjoy better living standards than their rural counterparts. Indeed, higher rate of infectious diseases and malnutrition have been recorded in informal settlements than in rural villages in several countries.

¹⁵ Hardoy and Satterthwaite (1987b:232) state that between 60% and 95% of all new housing in most Southern cities is organized by residents themselves, mostly in illegal settlements. See also Hardoy and Satterthwaite (1989). World Bank (1993:76) estimates, however, are more conservative: "in some cities, unauthorized housing comprises 30 to 50 percent, and sometimes as much as 80 to 90 percent, of the housing stock."

amounts on food and other necessities (Desai and Pillai, 1991; Hardoy and Satterthwaite, 1989; World Bank, 1990; 1993).

While practically all forms of urban housing accessible by the urban poor in the South are illegal in some respect, degrees of illegality vary.¹⁶ Households are compelled to build, buy or rent an 'illegal dwelling' primarily because they cannot afford 'legal' housing. Although the illegal development of housing has been evident for several decades, governments have generally been disinclined to acknowledge it; fewer still have taken positive action to ensure accessibility to alternative legal accommodation by poor households (Hardoy and Satterthwaite, 1987a; 1989).

In developing illegal housing, the urban poor demonstrate great ingenuity, enterprise and pragmatism. But illegality in the lives of the urban poor¹⁷ could not long survive were it not in the interests of several parties, as many analysts have noted (Burgess, 1977; 1978; Earthscan, 1983; Gilbert and Ward, 1982; 1985; Hardoy and Satterthwaite, 1989; 1993; Leeds, 1969; Lloyd, 1979; Main, 1990; Ward, 1983). In addition to the élite and government authorities, these include the following :

- Politicians who, anxious for the support of the numerically increasing constituencies in informal settlements, exploit opportunities for patronage and publicize their munificence by legitimating informal settlements, or implementing improvement projects;¹⁸
- Landowners, land developers, and businesses that purchase and sell land illegally,¹⁹ as well as informal settlement landlords and their guardians in influential positions.²⁰

¹⁶In the South, squatting usually refers to the illegal occupation of land, rather than of existing housing as is normally the case in the North (Main, 1990). Thus, housing in squatter settlements is illegal in two senses: land is occupied illegally, and the site and structures contravene zoning regulations and building codes—quite apart from the lack of supporting infrastructure and services. Other neighbourhoods have some aspects of legality; a dwelling built on an illegal subdivision is usually not illegally occupied from the point of view of the landowner, although the land use, the layout, the structure, and the infrastructure and service standards probably violate official legislation. Many inner-city tenements were originally legally constructed middle-class houses and apartments which were later subdivided; others were built for the purpose of renting rooms to poorer households, not uncommonly with government approval or even government support. Most are illegal because they violate standards for space per person, lighting, ventilation and facilities for sanitation, washing and cooking. Ironically, the dwellings which infringe all these laws and codes and which cannot be bought or rented legally are precisely the ones which poor households can afford (Hardoy and Satterthwaite, 1987a). Gilbert and Ward (1985:6) also observe that: "housing and land often change categories through time; land that is occupied illegally may later be legalized and serviced, thereby turning informal housing into formal housing; former elite housing may be converted into rental slums that fail to abide by government regulations on rent rises and contracts."

¹⁷Government legislation in regard to planning, building, environmental protection and employment regulations further ensure that other basic aspects of the lives of the urban poor, including obtaining food and water, and earning an income, are illegal (Hardoy and Satterthwaite, 1987a; 1989).

¹⁸Informal settlements give some degree of political stability as they allow for owner-occupancy and the establishment of patron-client relations on a large and organized scale (Burgess, 1978). Kool et al. (1989) observe that upgrading projects are also frequently executed against the backdrop of patronage networks. The project, then, is a favour which the patron grants his clients in exchange for power, votes, services, money, or combinations of these. Apart from politicians and local leaders, administrators also often assume patron-like roles, or act in conjunction with leaders and politicians. A fundamental characteristic of patrons is that they profit through conflicts between community and government interests. See also Gilbert and Ward (1982) for answers to the question: "why are low-income settlements so often destroyed if it is clearly in the interests of the dominant capitalist classes to maintain them?"

¹⁹Burgess (1977:52) mentions "political intermediaries who can take the form of informal estate agents" and "professional invaders (informal land developers)" as being among those with vested interests.

²⁰Ward (1983:35) asserts that settlements are invariably premeditated and planned by agents with vested interests in sponsoring such developments, including "real estate sharks, politicians, local leaders, mafioso racketeers, and even directors of housing agencies."

- Industrial and commercial entrepreneurs who rely on informal settlement populations to provide cut-price labour, inexpensive services or economical subcontracting. Moreover, since housing costs are low, wages can be minimized and there is less pressure for wage increases.
- Officials who, with inducement, will disregard legal or regulatory infringements, or for private gain acquire depreciated land and sell it off for upper income housing.
- Individuals and businesses that sell goods and services to the inhabitants.

Indeed, the rationale underpinning land, housing, and often service provision in many Southern cities is precisely that they are produced in an unregulated segment of the market (Jones and Ward, 1994). Maintaining control over informal systems of land allocation is also easier and more profitable for individuals within a ruling élite than formal systems of land allocation to the poor. Moreover, in the final analysis, the élite's interests are better served by the hidden subsidy from the labour and scarce capital used by residents in developing informal settlements and then imposing "assistential-paternalistic measures on the marginal population based on solution of immediate problems" (Rivas, 1977:327), than are the interests of the poor themselves. Hence,

[these] interests are likely to continue to reinforce the official ideology of maintaining official standards and ensuring that petty commodity production (including that of buildings) is kept under informal and not formal control. (Lee-Smith, 1990:187)

Be that as it may, in the last two decades or so, many of those concerned with urban problems in the South have underlined the expediency of recognizing the 'real' city, the physical (i.e., the illegal settlements) as well as the economic one (i.e., the informal sector). Upgrading projects are designed to meet this end, as are sites-and-services (Balbo, 1993).

3.4 Demand and Supply in Low-Income Urban Housing Markets

3.4.1 Housing Demand from Low-Income Groups

Studies of urban housing markets or particular sub-markets used by the poor evince a great diversity of 'demand'. This variance arises from two factors: (i) how much low-income households can afford to spend on housing, and (ii) how much households want to spend on housing; which will be influenced by various attributes of the available accommodation (UNCHS, 1996a).

3.4.4.1 Attributes of Housing

John Turner (1969:509) hypothesizes that:

if the processes producing [informal settlements] are essentially normal processes of urban growth then it follows that *[informal settlements] are both the product of and the vehicle for activities which are essential in the process of modernization.* (italics Turner's)

To support this affirmation, Turner (1969) distinguishes the functions which informal settlements perform, which are the functions of any dwelling environment. A primary function of the dwelling is that it provides *location*, however long the duration of residence—without a location the dwelling cannot exist. And if the dwelling cannot be occupied because there is no *tenure*, it is useless as a dwelling. The dwelling must also provide a minimum degree of *shelter*. He adds that types of location, tenure and shelter are manifold and may vary independently.

Alternatively, Linn (1983) and Yeh (1984) identify five primary attributes of housing which bear upon demand and willingness to pay for housing: (i) access; (ii) space in terms of lot size; (iii) tenure; (iv) availability of on-site services such as water supply, sanitation, waste disposal, drainage, electricity, and security from fires and crime; and (v) shelter.²¹

Access defines the accessibility of employment and income-generating opportunities, off-site services (e.g., health and education), community contacts, etc. *Space* dictates the size of the dwelling, the extent to which commercial, agricultural and recreational activities can be carried out on the lot, and the privacy enjoyed. *Tenure* has two dimensions: (a) security of tenure, including protection from forcible eviction or relocation, which influence considerably the inclination of low-income households to maintain and improve their property; and (b) ownership rights, including the possibility of letting out all or part of the lot or dwelling, the right to operate home-based enterprises (HBEs), the ability to benefit from valorization, and the potentiality of using the property as collateral to obtain credit. Tenure security and ownership rights—and hence the value of the property to individual householders—can be extensively altered by public action, including expropriation or conferral of title, legal restrictions on rental or commercial activities, taxation of rents or capital gains, and expulsion from the land. *On-site services* convey direct benefits associated with the consumption of these services over and above the cost borne by the user. The benefits derived and the costs incurred vary with the service, the scale of provision, and the pricing policies of the supplier. The availability of on-site services facilitates the operation of income-generating activities using the services as inputs. Finally, the *dwelling* provides protection from the elements, domestic living space, privacy, convenience, and aesthetic pleasure. It may also provide income-earning opportunities through rental arrangements or other HBEs.

In addition to these five primary attributes, housing offers other social benefits. Good housing improves health, confirms status in the community, and is an investment which commonly appreciates over time²² and can also be expanded incrementally (Spence *et al.*, 1993).

²¹Tanphiphat (1983a), on the other hand, identifies as the three key determinants of the desirability of any plot of land for housing: degree of tenure security, environmental characteristics of the site, and location.

²²Keare (1983:165) affirms: "The evaluation of . . . World Bank projects has shown that housing is indeed a profitable investment, constituting a major outlet for private household savings, generating employment at low foreign-exchange cost, and yielding a flow of income."

But while the five key attributes all feature in the general demand for housing, the relative significance of each varies according to external factors. Household preferences for these elements varies considerably not only with household income, but also other factors such as price, household size and climate (Hansen and Williams, 1988; Linn, 1983; Spence *et al.*, 1993; Yeh, 1984). Generally, the poorest households are primarily interested in location and accessibility to employment opportunities. Those with higher and more stable incomes are interested in security of tenure and are willing to trade location for tenure, and are also more interested in space than in on-site services. Hence, Spence *et al.* (1993:9) hold that housing demand has to be seen primarily as a demand for:

- Urban land in appropriate locations;
- Infrastructure—water supply, sanitation, access roads, mainly low cost;
- Basic community facilities, and
- Shelter units (at a range of prices or rents, but mainly very low cost).

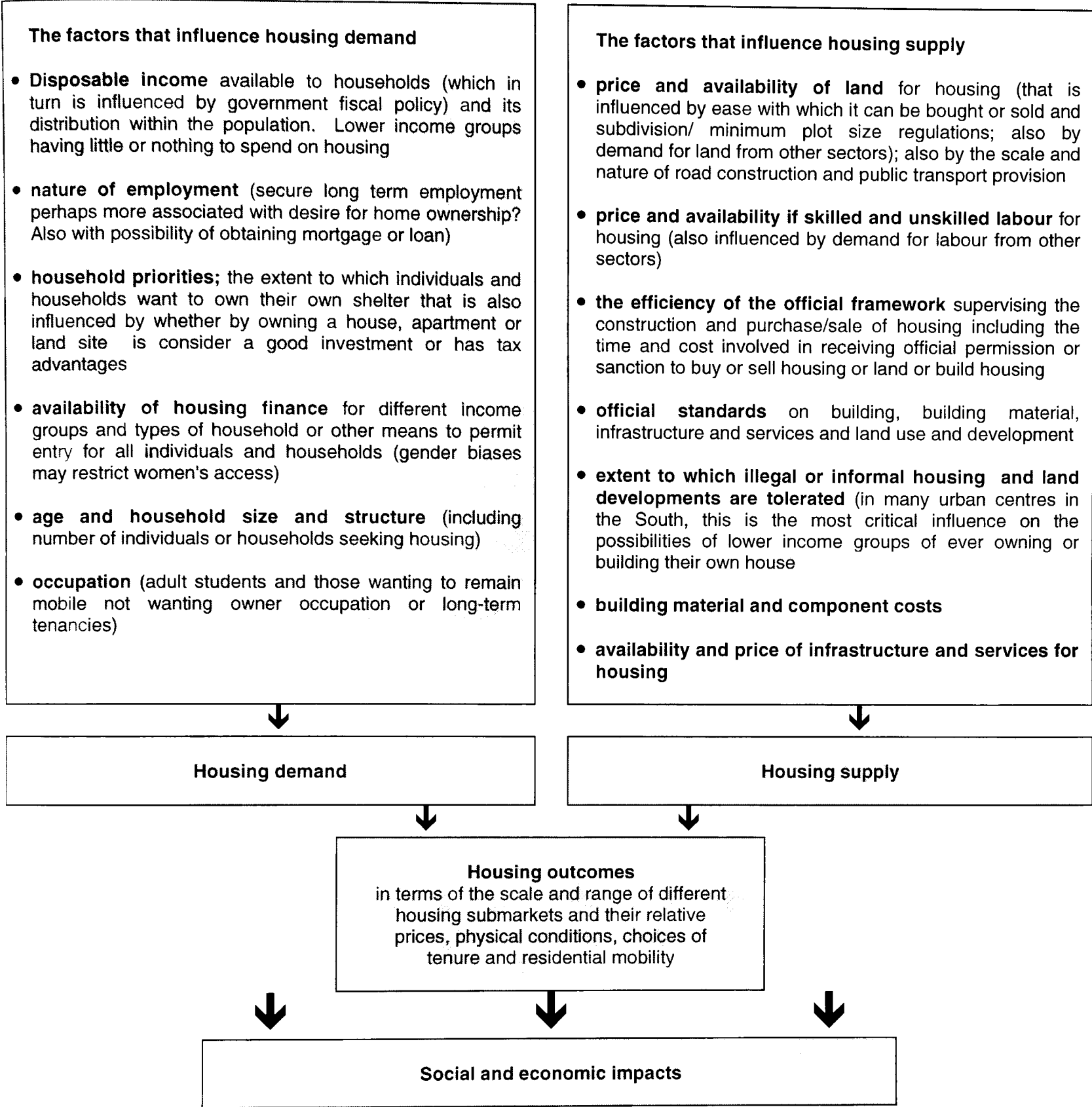
Figure 3.1 shows various factors that influence housing demand, as generalized by UNCHS (1996).

Demand for urban housing is intricately linked to urban growth—the growth in population induces an increased demand for all the attributes or services housing can offer (Linn, 1983). Housing demand in the South is so vast that it is difficult to quantify; but it is evident that the problem will endure for some time and is even likely to worsen. Since the 1950s the proportion of low-income households to total urban populations has risen steadily, so that the great majority of households currently have little in the way of capital or incomes with which to obtain housing (Payne, 1984).

In theory, households seeking accommodation in cities have multiform options in terms of tenure, location, size and quality of lot and dwelling, and quality of services: the more they can afford to pay, the more options they have. However, most housing submarkets are, in fact, not options to poorer households, who are unable to allocate more than minimal amounts of income to housing, owing to their cost or location (Aina *et al.*, 1989; Kellet, 1991). Certainly, in capitalist economies, the satisfaction of housing needs is a positive function of a households ability to pay the market price—'choice' in housing is a positive function of income (Edwards, 1982:132). Hence, as Kellett (1992:355) affirms:

Those living in poverty on the lowest incomes have the most restricted range of shelter options, and must seek situations which maximise the potential of non-financial resources.

Figure 3.1: The Factors that Influence Housing Supply and Housing Demand



Source: After UNCHS (1996)

3.4.2 Housing Supply for Low-Income Groups

The supply of urban housing for low-income groups in the South is influenced by diverse factors (Figure 3.1). According the World Bank (1993), however, the paramount influence on the efficiency and responsiveness of housing supply is the legal and regulatory framework within which housing suppliers operate. All housing markets are influenced by diverse regulations dealing with land use, infrastructure standards and building codes. But, the evident advantages of well-formulated and enforced land and housing regulations notwithstanding, they may also have a number of inadvertent consequences that subvert their original intent and impose large costs on society.

The extent to which illegal or informal housing and land markets are condoned will significantly influence housing supply for low-income groups. In numerous Southern countries, this is the most critical influence on the possibilities of low- and middle-income groups of constructing or owning any form of housing.²³ If the authorities are hostile to the undesirable 'blots on the landscape' that informal settlements are often perceived to represent, then opportunities for home ownership are likely to be limited (Gilbert and Ward, 1982; 1985). The proportion of a city's population living in illegal and informal settlements is not necessarily a good measure of housing problems in that rudimentary dwellings in illegal or informal settlements often meet the cost, location and space needs of low-income households better than other available alternatives (UNCHS, 1996a).

Another factor which obviously influences the low-income housing supply is the price and availability of land for housing, which is in turn influenced by the demand for land from other sectors and by the attitudes of central and local government authorities (UNCHS, 1996a). A further factor in housing supply is infrastructure supply policies. Underinvestment in residential infrastructure such as water, sanitation, drainage and roads, may result in higher costs of serviced land, delays in housing construction, and higher costs. Various aspects of the organization of the building materials and residential construction industry can also have important implications on housing supply for low-income households in the South (World Bank, 1993).

Three basic sources of supply for low-cost housing for the urban poor in the South are identified by Drakakis-Smith (1987): the public, private and popular sectors. The public and private sectors fall loosely into the formal sector, that is housing constructed in conformity with local building standards by legitimate firms through established land, finance, material and labour markets. Conversely, 'popular' housing is that which is built by the urban poor themselves usually in contravention of some legislation, outside established building conventions and below 'acceptable' standards or norms. Like the economic activities of the formal and informal sector, housing types vary considerably, and frequently possess the characteristics of more than one sector.

Public housing projects accommodate very few poor urban households in the South as the annual supply of such housing falls far below need in almost all countries (Hardoy and Satterthwaite, Rodwin and Sanyal, 1987; 1987; Turner, 1982; UNCHS, 1987). Indeed, a survey of 17 nations (Hardoy and Satterthwaite, 1981) found that, in only two, were public housing programmes (including sites-and-services schemes and core housing units) on a scale to impact significantly on the housing situation of lower income groups.

²³UN (1989) affirms that the inability of many lending systems to finance the housing needs of middle-income households has impelled many of them into the informal housing market. See also Gatabaki-Kamau's (1995) study of the informal development of a middle-income settlement in Nairobi/

The formal housing stock in the South is thus developed principally by private sector organizations. However, the formal construction industry, in most cases, provides only a fraction of the needed housing units, and usually at costs unaffordable by poor households. Hence, it is the informal sector which provides most of the housing, especially for the lower income groups.²⁴ This it does in informal settlements at prices that the formal sector cannot afford to provide at and in areas where the formal sector does not operate (ILO, 1993, UNCHS, 1987; UNCHS/ILO, 1995; World Bank, 1993). Certainly, the greater part of new urban housing in the South over the last 30-40 years has developed in informal settlements (Cairncross *et al.*, 1990).

3.5 Informal Settlements in the South: An Overview

Urban poverty and social inequality in the South, as mentioned earlier, are manifested most conspicuously in the realm of housing in the form of diverse low-income residential areas, some of which are representative "of the worst form of struggle for the basic needs of life" (Desai and Pillai, 1991:2). But the popular conception of Southern cities comprising a central business district (CBD) and an agglomeration of middle- and higher-income neighbourhoods, amid low-income settlements inhabited by impoverished migrants from rural areas, disregards the diversity that exists in the urban poor's residential circumstances (UNCHS, 1987a). The neighbourhoods they inhabit are variously referred to by a host of different names, including slums, shantytowns, squatter settlements,²⁵ and informal settlements. Besides these more familiar terms, several adjectives have been applied to distinguish 'settlements', among them 'illegal', 'unplanned', 'marginal', 'transitional', 'uncontrolled', 'spontaneous', 'sub-integrated', 'non-planned', 'provisional', 'unconventional', and 'autonomous'; they are also identified by distinctive terms peculiar to given societies.²⁶ While some of the appellations may be appropriate in certain contexts, they can be deceptive in others.²⁷ Nonetheless, the diverse nomenclature is indicative of a paramount characteristic of such settlements—their extreme heterogeneity. Indeed, their lack of homogeneity causes not only definitional problems, but also a need for a variety of responses from the authorities (UNCHS, 1994c).

Informal settlements, according to (Lloyd 1979), are part of a universal process which began with the intensified penetration of the South by financial and rapidly advancing technology of the

²⁴ It has been estimated that the average number of dwellings built by the informal sector in the South is about four times the number counted by formal statistics (Moavenzadeh, 1987).

²⁵ In the South, 'squatter' ordinarily refers to the illegal occupation of land, rather than of existing housing as is generally the case in the North (Main, 1991).

²⁶ See *Slums in Latin America* (an extract from a United Nations Document) in Desai and Pillai (1991) for some illustrations drawn from housing censuses and local surveys that provide some indication of the variations in types of settlements, and in the names by which they are locally known. See also Harpham *et al.* (1988), Mangin (1967) and Palmer and Patton (1988).

²⁷ Housing terminology, according to Haywood (1986), has evolved as both the perception of problems and the role of the participants have changed. Any definition, consequently, reveals particular historical circumstances and the stance of the observer. Kellet (1995) similarly asserts that the field of housing generally suffers from concepts and terminology which are imprecisely, ambiguously and inconsistently defined.

North. A world economy subsequently evolved whereby the rich are now concentrated in the latter and most of the poor live in the former.²⁸ In individual countries, informal settlements are likewise a consequence of uneven distribution of income, wealth and services (UNCHS, 1977). Leeds (1969) also asserts that they appear only in capitalist societies, albeit not with equal frequency or intensity (measured, for example, by size). He thus concludes that they "are a product of the operation of capitalist systems characterized by urban systems transforming from mercantile to widespread industrial economies" (Leeds, 1969:52).

In 1977, an Expert Group Meeting (UNCHS, 1977) did, in fact, note that informal settlements had been practically eradicated in China in less than 25 years.²⁹ Country studies, however, show that they certainly do exist in some socialist states in the South, although their extent varies.³⁰

Informal settlements were initially viewed as an 'unacceptable', but frequently 'passing' phenomenon (Martin, 1983:54): a dysfunction originated by rapid urban growth, imbalances in the distribution of resources and income, and national poverty (Gilbert and Ward, 1982; Moser, 1982). But, they have gradually become an ineluctable urban fact (Hamdi, 1991).³¹ Indeed, cities and large towns in the South have been increasing in population by 3% to 6% per annum (in some cases, even more); informal settlements in those cities comprise between one-third and one-half of the total, and actual numbers of settlement dwellers are increasing at a rate of about 10% to 15% annually (Juppenlatz, 1991). With rural-urban migrants and expanding urban households continually establishing and expanding informal settlements, the vision of the total eradication of informal settlements and their replacement by orderly urban development is fading into oblivion (Angel, 1983a). As McKee (1994:50) asserts: "The general elimination of in [informal] settlements in the metropolitan complexes of [the South] is hardly a viable policy option."³²

²⁸Moreover, "[the] burden of poverty is spread unevenly . . . among the regions of the [South], among countries within those regions, and among localities within those countries" (World Bank, 1990:2)

²⁹Kirby (1990) affirms that with the advent of the Communist Party to power in 1949, urban housing supply in China underwent a revolutionary transformation, and extensive squatter and slum areas were rapidly eradicated. And the Chinese urban housing system to not permit the urban squalor and misery associated with the processes of 'development' such as have been experienced in the post-colonial world (Kirby, 1990:309). But he also mentions that a survey in 1955 showed that 50% of all municipal housing stock was in need of rehabilitation; and that a survey in 1978 discovered that one third of the approximately 22 million households in the 92 municipalities had severe housing problems: families were living in corridors, warehouses, factory workshops, offices and classrooms. He further reports that a 1985 national housing census revealed that "[even] in the showcase of Beijing, around one third of the urban households were 'without proper homes' (*China Reconstructs*, 1989)" (Kirby, 1990:310).

³⁰See country studies in *Housing Policies in the Socialist Third World* edited by Kosta Math  y (1990a). With reference to the failure of the socialist housing programme in Zimbabwe, Drakakis-Smith (1986:156) observes that perhaps more depressing than the inequitable distribution of building resources is "the sight of a 'people's government' increasingly condemning and repressing the activities of the petty-commodity sector from squatter building to street trading to alleged prostitution."

³¹See Angel and Benjamin's (1976) explication of "Seventeen reasons why the squatter problem can't be solved".

³²Similarly, Parry and Gordon (1987) assert that from the viewpoint of the state, action to control or remove informal settlements when they are small is difficult, due to cost and the absence of practical alternatives; when they become large, it is politically and economically impossible.

Although informal settlements are a common feature of the urban landscape in the South, they are by no means homogenous. They are highly differentiated physically, and there is considerable heterogeneity within the socioeconomic profiles of residents³³ (Harriss, 1989; Kellett, 1995; McKee, 1994). The state's attitude towards informal settlements predetermines their characteristics (Castells, 1988). The physical conditions and quality of housing in informal settlements will also vary in accordance with country's per capita income and policies towards informal sector housing (UN, 1989). Ways in which settlements differ, as summarized by WHO (1987:3-4) include:

- In the legal status and security of ownership they offer (*de facto/de jure*).
- In their patterns of tenure.
- In their physical structure and age.
- In their propensity for self-help and community improvement.
- In the nature of their populations, notably as regards migrant status, type and location of work, income, stage in the life-cycle, etc.
- In the major health problems facing the inhabitants.

Despite considerable variance in terms of physical arrangements, socioeconomic profiles, environmental characteristics, and cultural and political backgrounds, the residential milieux reflect the same interplay of socioeconomic forces. Housing conditions are almost universally deficient—the eventuality of the residents' poverty, the state's paucity of resources to cope with the inadequacies and the disinclination of the private sector to participate in low-income shelter delivery. Predominantly, they are characterized by a lack of infrastructural services, utilities and amenities; insalubrious and dehumanizing living conditions; excessively high densities (of both people and structures); overcrowding in dilapidated dwellings; and often by long travel distances to work-places and employment opportunities. Not infrequently, informal settlements constitute a transition from a traditional or rustic life-style to greater modernity and urbanization for the migrant population³⁴ (Pasteur, 1979).

Informal settlements are, thus, a complex product of diverse factors, as is true of many other social phenomena; but poverty is the foremost cause. In most cases, there is an interplay of objective economic facts and subjective standards. Low incomes compel people to live in

³³ McKee (1994) asserts that as residents may range from illiterate and chronically unemployed or underemployed to professionals such as doctors and lawyers, it is apparent that many may be living in informal settlements not out of necessity. They are thus limiting the ability of existing settlements to absorb new migrants, and necessitating the establishment of new settlements.

³⁴ Rural-urban migration has often been linked directly to the growth of informal settlements which have been perceived as the settling basins for rural migrants (Ward, 1982a). Thus, Pearce (1961:1951, cited in Ward, 1982a:3) describes it as a movement into housing of a "rustic form being nothing more or less than the intrusion into the interstices of an urban system of life, of rural standards of housing . . ."

informal settlements but, according to Bergel (1991:34): "such groups do not object because they are used too even worse conditions."³⁵

3.5.1 Myths and Realities of Informal Settlements

A common prejudice found in the literature on poverty in the South is the portrayal the urban poor as people afflicted by numerous social pathologies, amounting to a supposed incapacity to respond adequately to economic and social incentives. Much attention, earlier on, focused more on the material and cultural deprivation that is visible than on the sociocultural defence mechanisms devised by the urban poor (Lomnitz, 1988). This contributed largely to the emergence of the set of stereotypes regarding residents of informal settlements and the neighbourhoods they inhabit, termed the "myths of marginality" by Janice Perlman (1976), which are so widespread and deeply entrenched that they form an ideology—indeed a political weapon—for justifying the policies of the political élite, upon which the lives of the residents depend. Drawn from a diversity of popular studies, academic theories, and local prejudice, the standard myths, which are not all incorrect and by no means mutually consistent, and also with some variation among countries, are embodied in writings ranging from the derisory to critical observations by rational analysts. They have been noted by a number of writers (Eke, 1982; Mangin, 1967: 1970b; Perlman, 1976), and include the following:

- They are formed by migrants who arrive destitute and rootless from rural areas, unprepared and unable to adapt fully to urban life, and perpetually anxious to return to their rural homes. The rural-born migrants are seen as upholding maladaptive rural values, or adopting the equally self-defeating traits of the 'culture of poverty';
- They are chaotic and unorganized;
- They manifest all the symptoms of social disorganization: rampant crime, violence, family breakdown, anomie, juvenile delinquency, promiscuity, prostitution, illegitimacy, etc.—they accommodate "the citizen at the margin of social respectability" (Stokes, 1991:50);
- They represent an economic drain on the nation, since unemployment is high and the residents are the lowest class economically, the most poorly housed, the hungriest, and their labour might better be employed on the farms;³⁶
- They do not participate in the life of the city, the education level is low and illiteracy high;
- The residents are parasites on the urban infrastructure and on its limited resources;

³⁵ P. Ramachandran (1991:138) asserts that people in India, "particularly those in the low socioeconomic levels are not civic-minded. They are not concerned if slum conditions are created even in otherwise decent localities, nor do they feel about improving the conditions." (sic)

³⁶ Regarding urban squatters in Nairobi, Ross (1973:89) asserts that "Mathare Valley is populated by urban misfits and rural outcasts in the sense that these individuals lack the skills and abilities needed to participate in the modern economy of Nairobi, while at the same time they have no meaningful alternative to life in the city."

- They are rustic peasant villages reconstituted in urban areas,³⁷ and represent parochial ruralistic enclaves in which the residents isolate themselves rather than take advantage of the wider urban context;
- They are "breeding grounds for" or "festered sores of" radical political activity, particularly communism, because of resentment, ignorance, and a longing to be led (Mangin, 1967:66); the residents pose the threat of an irascible, frustrated mass prone to demoralization and radicalization;
- There are two solutions to the problem: (i) prevent migration by law or make life in rural areas more attractive, or (ii) prevent formation of new informal settlements and eradicate the existing ones, replacing them with housing projects.

3.5.1.1 Marginality Theory

The concept of "marginality" was first used on the individual psychological level by Robert Park (1928:892) who characterized "marginal man" as a "cultural hybrid . . . a man on the margin of two cultures and two societies" (cited in Peattie, 1974:102). But its usage in Latin America, where it emerged as a key social issue, appearing in such diverse forums as political discourses, housing programmes, and scholarly research proposals, has been historically independent, in some degree.³⁸ The term "marginality" was first applied to settlements and later extended to the people who inhabited those settlements:³⁹ but the two senses are definitely interconnected. The concept has been popularised as a coherent theory—even though it is based on a number of loosely related, rather ambiguous hypotheses (Peattie, 1974; Perlman, 1976).

Hence, in the South, "marginals" have been defined *à priori* as illegal squatters and as part of a socially disorganized sub-group.⁴⁰ But the term "marginality" has also been used to refer to a variety of other, sometimes overlapping groups, including: "the *poor* in general, the *jobless*,

³⁷ This is particularly so in the case of peri-urban settlements which sometimes afford the opportunity of practising a limited amount of subsistence farming and the keeping of some livestock.

³⁸ The emergence of urban marginal populations is not exclusive to the South. In the North, such populations result from the displacement of certain social strata from the labour market through mechanization and automation of the means of production. They represent *surplus* population (rather than a labour reserve) and are, thus, an undesired by-product of the system (Lomnitz, 1988).

³⁹ According to Gino Germani (1972:2, cited in Peattie, 1974:102), in Latin America the term "marginality" began to be used principally with reference to urban ecological characteristics, i.e., to the sector of the population segregated into areas of improvised dwellings on illegally occupied land. From this point it was then extended to their conditions of work and level of life. Then its marginality was conceived both in relation to the socioeconomic system of production and the regular system of consumption of goods and services. Simultaneously, it was observed that this state of marginality included other essential aspects like formal and informal participation, political and union participation, and in general its absence or exclusion from decision making whether in the order of broader state and national structures and institutions, the situation at work, or at the level the local community. In the interim, many noted that these sectors differed in a manner no less pronounced with respect to many aspects of national culture (the basis being the patterns of dominant centres of the ruling or fully participate groups).

⁴⁰ They have also been defined as marginal in terms of their marginal positions in the city. They are spatially or geographically marginal because they live in peripheral settlements; they are economically marginal because they contribute little to production and even less to economic growth; they are occupationally marginal because they include a high proportion of illiterate and unskilled workers who frequently can find no secure employment owing to their inadequacies; they are socially marginal because they are unable to participate in or are excluded from formal organizations and other urban institutions; they are culturally marginal because their origins, customs, values and behaviour inhibit them from entering the mainstream of urban life; and because they are thought to be outside any political organization or structure and are unable to influence processes of decision-making or of resource allocation, they are also deemed to be politically marginal (Harpham et al., 1988; UNCHS, 1987).

migrants or members of other *subcultures*, racial and ethnic *minorities*, and *deviants* of any sort" (Perlman, 1976:93). The ideologies and stereotypes associated with the concept of marginality significantly affect the lives of the urban poor and informal settlements residents (Peattie, 1974).

Five prevalent usages of the term marginality are identified by Perlman (1976). The first focuses on location, or the settlements *per se*, and considers settlements marginal because of the peripheral placement within the urban area, illegal land occupation, sub-standard physical construction, clearly deficient infrastructure and insalubrious environment, and overcrowding. Although these facts do not necessarily overlap, it is assumed they do. Consequently, these physical traits have been combined with assumed attendant social attributes and life-styles, broadening the definition of marginality from the external habitat of the poor to their internal personal qualities. The second associates marginality with the urban underclass, the unemployed, or the underemployed. A third major use of the term is in association with migrants and the migratory experience, the key identifying point being newcomer status and the transition between traditional-rural and modern-urban life.⁴¹ The fourth definition of marginality, based on racial or ethnic minority status, considers superior-inferior status differential, with in-group or out-group participation determined by genetic traits. Finally, marginality is used in association with individual deviants, whether pathological or especially gifted or nonconformist, and may imply a lack of participation in the occupational, political or religious mainstream.

Hence, it has been generally assumed that residents of informal settlements will manifest a series of economic, social, cultural and political traits associated with the living conditions in the settlements. Each dimension refers to a specific manner of being "outside" of the standard functioning of society, and they are regarded as linked together by the spatial-ecological fact of residence in informal settlements. The combination and assumed covariation of these dimensions has allowed marginality to be used as an overall perception of the lower-income groups and as an explanatory statement of why poverty exists (Perlman, 1976:97). Castells (1991:256) summarizes the ideology of marginality thus:

[It] merges and confuses in a single dimension the positions occupied by individuals and groups in different dimensions of the social structure: in the occupational and spatial structures, in the stratification system of individual consumption, in the process of collective consumption, in the psycho-social system of individual behaviour and in the power structure.

However, Perlman (1976) convincingly disproves the myths of isolationism, traditionalism and anomie which allegedly pervade life in informal settlements (Drakis-Smith, 1981). Perlman (1976:195, italics hers) contends that:

⁴¹From this viewpoint, part of a larger conceptual framework of cultural change and transition, any subculture which is different from the mainstream could be described as marginal (Perlman, 1976).

*residents are not economically and politically marginal, but are exploited and repressed; they are not socially and culturally marginal, but are stigmatized and excluded from a closed system.*⁴²

3.5.2 Positive Attributes of Informal Settlements

Anyone who has studied the urbanization process and economic situation in the South comprehensively knows, as Martin (1983) affirms, that informal settlements are clearly a permanent feature. They are not only inevitable, but also realistic in the circumstances. And they are by no means marginal: they make a significant contribution to the city as whole. Despite creating various problems for public authorities, they are generally beneficial to the maintenance and reproduction of economic and social order. The low economic and political status of the poor restricts their access to both public and private housing markets, but informal settlements afford a practicable response to resolving essential shelter needs—they are able to match the needs, priorities and ability-to-pay of the urban poor, and also provide vital employment opportunities (Gilbert, 1992a; Kellett, 1995; Tan and Hamzah, 1983; UNCHS, 1987). Despite their often spontaneous and improvised character, the deficient environmental infrastructure, the insalubrious conditions, the poor standard of construction and quality of dwellings, and the illegal encroachment on land, informal settlements have provided virtually the only delivery mechanism which has had any success in providing appropriate, low cost solutions to the shelter problems of the urban poor. Informal settlements deal with a complex number of economic decisions and trade-offs, including: lack of capital, sporadic incomes, large households, and a lack of readily available, low-priced building materials. And, they provide an almost infinite variety of opportunities for housing investment to suit every purse (Peattie, 1982; Rybczynski and Bhatt, 1986).

Informal settlements have often been considered more successful than formal low-income neighbourhoods because the final housing is more appropriate, of adequate quality and the delivery system is better suited to the occupants' lifestyles. Moreover, housing in informal settlements frequently tends to appreciate over time and services are gradually installed as the community consolidates. Conversely, it is not uncommon for public housing schemes, whether inhabited by the truly poor or better-off groups, to depreciate through inadequate maintenance, breakdown of services and overcrowding (Lowder, 1986).

The pattern of social organization that prevails in informal settlements enables the urban poor to survive because social networks underpin economic networks which practise a generalized exchange of goods and services, and informal mutual aid patterns (Kayongo-Male, 1980; Lomnitz, 1988; 1990; Racki *et al.*, 1971). Multitudinous households earn their livings in small-scale informal sector enterprises characteristic of informal settlements, thus extending the

⁴² Peattie (1974:107) similarly asserts that to think of residents of informal settlements in Venezuela as "marginal" implies a misunderstanding of complex social systems. Regardless of whether we refer to economic, social, political or cultural phenomena, *structured inequality* rather than "marginality" seems to characterize more accurately the situation of informal settlement residents (Cornelius, 1974:13).

conception of upward mobility to an increasing number of households in reduced circumstances⁴³ (Haywood, 1986; Memon, 1982; UNCHS, 1986a).

Informal settlements have several other categorical attributes, including the following identified by various writers (Altmann, 1982; Burgess, 1978; Edwards, 1979; Eke, 1982; Gilbert, 1992a; Harpham *et al.*, 1988; McTaggart, 1988; Odongo, 1979; Pugh, 1990):

- They are free of the heavy hand of bureaucracy and formality; they are economically more fluid and more adaptable than the more formal alternatives.
- They minimize land and housing costs and extend household budgets through landlordism and horticulture. In addition to housing being inexpensive, affordable, accessible and relatively easy to organize and execute,⁴⁴ they afford poor households flexibility in choice of location, giving consideration to their prior needs for employment and food.
- They are a staging area for the urban poor—a vehicle for urban expansion which, as such, should be accepted and integrated into the urban community. At the margins of poverty and in the struggle for urban living, people can see their housing endeavours as an achievement and a useful experience.
- They provide a setting where new arrivals on the urban scene can position themselves during their assimilation into urban life. Through them migrants are oriented to the alien and complex urban milieu; they, thus, perform important acculturating and transit-oriented functions. They are also the principal means by which (new) urbanites sustain ties with their rural traditions; and through them elements of urban life are carried back to the rural areas.
- By congregating in urban settings, new migrants may enjoy services which would have been well beyond their reach in rural areas.⁴⁵
- They provide accommodation for voluntary migrants from formal neighbourhoods seeking relief from high rents, social ostracism and disorder, who bring with them beneficial skills.

⁴³ Lea (1979) notes that the greater number of scholars have accepted that the central thesis of Turner's model, i.e., that informal settlements can provide a means of upward socioeconomic mobility (see section 4.7.5.3 and Table 4.2), provided that a favourable economic environment prevails. However, regarding the contention that squatting provides an opportunity for many households to overcome some of the structural aspects of poverty, Lea (1979) and Ward (1982b) hold that while squatting may indeed provide an environment in which households survive, by itself, it is not a vehicle for upward social mobility. Not all squatters improve—for a significant proportion, potential improvement via self-help is severely restricted. The level of success is dependent on the wider economic environment—the state of the economy, rates of inflation and wage levels. Despite its many advantages, squatting can never be expected to override the wider socioeconomic factors that operate at the national level.

⁴⁴ Lowder (1986) maintains that self-help housing in informal settlements is undoubtedly cheaper, if only because it does not involve management overheads or interest payments: the householder manages operations and payments are made in cash. However, it is difficult to ascertain the real costs when payments are staggered over time and these are definitely reduced because the dwelling is occupied before it is completed.

⁴⁵ Such things as immunizations and inoculations, basic education, and health and safety education can be provided more easily in concentrated urban circumstances. These and similar circumstances may improve the chances of formal sector employment through increased productivity potential—assuming, of course, employment opportunities are available (McKee, 1994).

- They are generally helpful to the maintenance of economic and social order. The latter is a relatively self-regulating phenomenon. Inhabitants are prone to develop an outstanding degree and intensity of interpersonal relations owing to the difficulties and pressures with which they are collectively confronted. Family life also has some personally and socially satisfying human expression, even in squalid and dilapidated settlements.
- They are the location of multifarious informal small-scale entrepreneurial activities; indeed, certain informal sector activities are typically performed in or around dwellings in informal settlements (UNCHS, 1986a). Many of the goods and services produced serve the interests of capitalist enterprises and the consumer tastes of middle- and upper-income groups.
- They allow a large permanent reserve army of labour to be installed cheaply in cities. By virtue of being employed, formally or informally, in manifold occupations, the residents 'solve' cities' labour demands (Treiger and Faerstein, 1990:55) The very existence of informal settlements amidst formal neighbourhoods represents the symbiotic interaction between formal and informal housing and employment.⁴⁶
- A functional relationship between informal settlements and the formal housing sector holds, which derives partly from the petty capitalist mode of production and partly from the quasi-capitalist informal sector.

Various interest groups also benefit from the development of informal settlements. The creation of informal settlements has produced certain circumstances which have facilitated the hegemonic control of the existing political structure (Connolly, 1982). Élite residential groups are likewise served in the sense that low-income settlement frequently indirectly maintains the inviolability of private property. If illegal occupation of land can be confined to public land and illegal subdivisions are restricted to circumscribed areas, then upper income residential areas are not directly threatened. Indeed, by affording the poor some stake in the property system, informal settlements uphold the property concept throughout the urban area and maintain the inequality of land holding (Gilbert and Ward, 1982).

Industrial and commercial interests also benefit as the labour force, being housed cheaply, is less likely to demand higher remuneration. While still more might be gained from a better accommodated population with a higher disposable income, these interests are not threatened by the system and gain certain benefits from it (Gilbert and Ward, 1982).

3.5.3 Negative Attributes of Informal Settlements

The failure of orthodox housing policies in the South, and the consequent attitudinal changes towards non-conventional mechanisms of low-income urban housing delivery, have meant that

⁴⁶In Bangkok, for example, Angel and Chirathamkijkul (1983:437) observe that informal settlements "house hundreds of thousands of people in good locations, are in close proximity to middle and upper-income residential areas, and are an integral part of the fabric of the city. People of different groups have access to each other, and can be of most use to each other."

informal settlements have often been received with less than critical acclaim. But, inasmuch as informal settlements unquestionably play a paramount role in accommodating the overwhelming majority of the South's urban poor, they are a reaction to fundamental defects in housing mechanisms and, accordingly, have both merits and demerits. Hence, despite the ingenuity with which the settlements have been built at low monetary cost and with very limited resources, demonstrating a sophisticated organizational and planning capacity among poorer groups, certain deficiencies originating from the nature of their development and uncontrolled growth are identifiable.

Leading among these are the environmental disamenities associated with the prevalent poverty in informal settlements. The inhabitants live in neighbourhoods and dwellings in which their health and life are continually threatened because of the inadequacies in provision for clean water and sanitation, removal of liquid and solid wastes, and health care and emergency services. The deficient environmental infrastructure means that most informal settlements have no option but to pollute themselves. Women and children bear an inordinate share of the debilitating health consequences associated with the residential circumstances.⁴⁷ The housing and living environment can also influence the incidence and severity of psycho-social disorders through stressors such as inappropriate design, inadequate provision and maintenance of infrastructure and common areas, overcrowding, and noise.⁴⁸ Many informal settlements develop on hazardous and environmentally vulnerable sites,⁴⁹ thereby increasing the probability of catastrophe.⁵⁰ Moreover, the problems created by the poor environmental conditions in informal settlements extend to the urban areas at large (Cairncross *et al.*, 1990; CHF, 1990; Dankelman and Davidson, 1995; Engels, 1991; Hardoy *et al.*, 1992; Jacobi, 1994; McGee, 1990; McGranahan, 1992; 1993; UNCHS, 1996a).

⁴⁷ Services such as emergency and police services to cope with serious health problems, fires, accidents or crime are commonly lacking. Moreover, extremely high densities inhibit access by water carts, refuse vehicles, fire-fighting vehicles and other emergency services which contributes to insecure living conditions.

⁴⁸ Psychological disorders associated with poor-quality housing identified by UNCHS (1996a) include depression, alcohol and drug abuse, delinquency, violence (including spouse and child abuse, rape and teacher assault) and suicide. Conversely, WHO (1992:215) asserts that: "strong social networks and a sense of community organization in many . . . [informal] settlements . . . might help explain the remarkably low level of psychosocial problems."

⁴⁹ All Southern countries have sites whose characteristics ensure that they are eschewed by all but the very desperate (Lowder, 1986). Informal settlements may develop on these sites which are ill-suited to housing and include inaccessible locations such as those with too steep a gradient, hillsides prone to landslides and flooding, swamps, road reserves, railway embankments, areas proximate to noxious uses or otherwise generally unsuitable environmentally, or inexpensive land originally located outside municipal boundaries where official restrictions were not enforced (Hardoy and Satterthwaite, 1989; Jacobi, 1994; UNCHS, 1981; 1987a). These areas may be a crucial factor in the survival strategies of the very poor, new migrants and floating populations, either because of their proximity to employment opportunities or their peculiarities (e.g., garbage pickers reside on or near municipal tips, extracting recyclable solid waste, organic feeding matter for pigs, etc.) (Lowder, 1986). Ironically, as McKee (1994:155) observes: "in some cases the recovery of materials by the poor may reduce the pressure on metropolitan dump sites."

⁵⁰ The physically precarious conditions typical of informal settlements and the rapidly growing concentration of poor households in them combine to magnify their vulnerability to an array of ecological crises, both natural and man-made (Leonard and Petesch, 1990). International news agencies are replete with disasters involving informal settlement residents (McKee, 1994); indeed, the industrial accidents of the last two decades evidence that the danger is ever present and profound. Cases in point include the Bhopal disaster in which toxic gaseous chemicals leaked from an insecticide plant in Bhopal, India in 1984 killing more than 2,000 people, and the explosion of a liquefied petroleum storage facility in Mexico city, two weeks earlier, in which 452 people died (a death toll of over 500 is commonly quoted) (Dankelman and Davidson, 1995; Haywood, 1986; Leonard and Petesch, 1990; Walker, 1994). Less tragic examples include conflicts between settlements and horticulture or discord between different social classes living in contiguous areas (Haywood, 1986).

Other negative characteristics which have been mentioned by various writers (Abrams, 1964; Hardoy and Satterthwaite, 1989; Hamdi, 1991; Haywood, 1986; McKee, 1994; Page, 1988; Pugh, 1990; Turner, 1969) include the following:

- The illegal occupation of land by informal settlements may be in conflict with existing and proposed land uses.
- Informal settlements are problematic because governments pay a price for the unregulated processes.⁵¹ In many metropolitan areas the mere location of informal settlements can interfere with economic efficiency; a preponderance of settlements impedes orderly development and expansion,⁵² and may discourage investment in greatly needed urban enterprises. The unpredictable development of urban areas also overtaxes services, utilities and government.
- The 'savings' inherent in the low investment costs of informal settlements may be more than offset by the indirect economic and social costs of living in such settlements. These costs may include reduced labour productivity arising from the ill-health associated with the poor environmental conditions, time and money spent on travel to work or gaining access to social services, and expenditure on repairing damage caused by natural hazards.
- In the short term, the creation of informal settlements on a self-help basis represents a subsidy to the housing authority owing to a large sector of the community meeting its own housing need at no direct cost to the government. However, in the longer term, this initial saving is likely to be surpassed by the cost incurred in upgrading the settlements.⁵³
- Where policies of accommodating, regularizing and upgrading informal settlements are adopted, the public will often express concern that such policies not only appear to reward illegal action but will further encourage it.
- Proliferation of informal settlements may delay the political stabilization of governments.⁵⁴

It is clearly visionary to suggest that all the above negative attributes can be overcome and informal settlements transformed into first-rate residential areas. But short of that, they can be

⁵¹ Regarding this, Turner (1982) maintains that although the social and economics costs of informal settlements tend to be as exaggerated as the capacity of official planners, it is anomalous for the uses of expansive tracts of urban land to be decided by users without the authorization of those with legitimate control over urban development.

⁵² Indeed, even John Turner (1969:522) affirms: "Squatting and clandestine subdivision point up limitations in the existing machinery for planning and reduce the proportion of urban physical growth that can be effectively influenced by the government—that part which is carried out legally within a technical and institutional framework evolved to accommodate a situation of slow social change."

⁵³ Haywood (1986) holds that while the community's self-help contribution can compensate some of these costs, the additional costs are liable to be more than the expenditure which would have been incurred if the settlement had been planned from the outset. Some costs may be recuperated through charges, but cost recovery will become a significant issue since many of the inhabitants will be living at a marginal economic level.

⁵⁴ A significant finding of Castell's (1988) analysis of the Lima experience is that an urban movement can be an instrument of social integration and subordination to the existing political order instead of an agent of social change—which is, indeed, the most frequent trend in Latin American informal settlements. But, when the relationship of dependency *vis-à-vis* the state is severed, informal settlements may become potential agents of social change. Their fate, though, is ultimately determined by the general process of political conflict.

made environmentally safer and more agreeable (McKee, 1994). And, indeed, informal settlements undoubtedly possess many resources invaluable for their own improvement (Skinner, 1982). However, all environmental issues involving informal settlements should be weighed and prioritized in keeping with the needs and objectives of general development (McKee, 1994).

3.5.4 Housing Environments of the Urban Poor Living in Informal Settlements

The relevance of poverty cannot be separated from discussions about the environment not only in rural areas, but also in urban areas—environmental degradation primarily affects the poor, both in rural and urban areas (World Bank, 1997a). Although not the cause of environmental problems, the urban poor are most at risk due to their deficient housing circumstances and reliance on often hazardous informal employment (Urban Edge, 1991c). It is commonly alleged that the poor pollute their environments, yet it would seem that this is inevitable, so long as urban services are denied to them. Government authorities in turn point out that the requisite resources to extend such services are lacking and unaffordable by the poor (Tipple *et al.*, 1994). Certainly, there is overwhelming evidence that the urban poor suffer disproportionately from environmental problems: the housing environment of lower income groups in Southern cities are among the most degraded and unhealthy living environments that exist (Hardy and Satterthwaite, 1984).

The World Health Organization (WHO, 1987b cited in UNCHS, 1996a:133) has distinguished nine features of the housing environment as having significant direct or indirect impacts on the health of their occupants:

- The structure of the shelter (which includes a consideration of the extent to which the shelter protects the occupants from extremes of heat or cold, insulation against noise and invasion by dust, rain, insects and rodents).
- The extent to which the provision for water supplies is adequate—both from a qualitative and quantitative point of view.
- The effectiveness of provision for the disposal (and subsequent management) of excreta and liquid and solid wastes.
- The quality of the housing site, including the extent to which it is structurally safe for housing and provision is made to protect it from contamination (of which provision for drainage is among the most important aspects).
- The consequences of overcrowding—including household accidents and airborne infections whose transmission is increased; acute respiratory infectious diseases; pneumonia, tuberculosis.
- The presence of indoor air pollution associated with fuels used for cooking and/or heating.
- Food safety standards—including the extent to which the shelter has adequate provision for storing food to protect it against spoilage and contamination.
- Vectors and hosts of disease associated with the domestic and peri-domestic environment.

- The home as workplace—where occupational health questions such as the use and storage of toxic or hazardous chemicals and health and safety aspects of equipment used need consideration.

On the basis of the above criteria, the urban housing environments of the lower income groups in the South doubtlessly must rank as the most insalubrious and threatening living environments that exist, as affirmed by UNCHS (1989; 1991). Regarding this, Douglass (1992:11) remarks::

When viewing environmental distress and poverty together, the major conclusion to be drawn is that the consequences of environmental degradation fall heaviest on the poor. The poor tend to locate near . . . extremely polluted areas of the city. They are crowded into small areas which have little room for storing garbage within households . . . and city governments fail to provide garbage and other environmental management related services.

WHO and other experts have found that the productivity of the urban poor is lower owing to high morbidity and infant mortality rates, caused in large part by environmental factors such as housing quality and access to water and sanitation (Olpadwala and Goldsmith, 1992; Urban Edge, 1991a).⁵⁵

But Peil (1994) affirms that populations living at high densities with inadequate services tend to take environmental problems for granted; there is little they can do about them. Hence, the urban poor "get on with their lives and leave the environment to look after itself" (Peil, 1994:188). However, this does not mean that the poor are totally ignorant of environmental issues or that they do not wish to ameliorate their situation, as numerous surveys have shown—it is simply that they have other priorities. An appreciation of the perspectives of the poor is, hence, a fundamental aspect of planning for sustainable development (Drakakis-Smith, 1995).

In the urban context, affluence is not patently beneficial to the physical environment. Under existing patterns of economic development, however, affluence does influence the locus of the urban environmental challenge. Perception of the location of the worst problems will vary depending on whether the concern is with very localized problems such as inadequate household water supply and sanitation, or global problems such as ozone depletion and global warming (McGranahan *et al.*, 1996).

3.6 Attitudinal Change Towards Informal Settlements

The way informal settlements are perceived and attitudes towards them, especially by those in power, predetermines most of their characteristics (Castells, 1988). It also influences

⁵⁵Potter (1985) holds that it is in the field of housing that perhaps the most conspicuous and emotive symptoms of urban poverty and social inequality in the South, are to be found. Rapid urbanization and poverty have constrained people to live as inexpensively as possible on dangerous, marginal sites and inadequately constructed houses (Tipple *et al.*, 1994).

significantly what policies are imposed on them. Because informal settlement policies are formulated by the dominant stratum in society, they reflect their social origins, their prevailing economic interests, and their interpretation of their own needs and those of the nation (Lloyd, 1979). The attitude adopted by governments towards the poor and to modifying their environment is probably the most critical element as it dictates the proportion of national and urban resources made available to low-income groups (Gilbert and Ward, 1982; 1985). The interrelationship between informal settlement residents and the political process is a very close one (Castells, 1988): "Housing policies ultimately depend on political ideologies and practices" (Oram, 1979:43). Housing policies range from repression, to tolerance, and benevolent encouragement. Between these attitudes of the élite and their consequent policies, and the analyses and commentaries of scholars, there exists a dialectical relationship; new interpretations reflect changing structures and further help to alter them (Lloyd, 1979).

Three major perceptions of informal settlements, synthesizing both scholarly opinion and popular ideas, which are the logical concomitants of the three major attitudes towards rapid urbanization,⁵⁶ are identified by Perlman (1976). The first viewpoint sees informal settlements as pathological agglomerations, and considerations of economic efficiency, health, aesthetics and political stability have the same policy implication: eradicate informal settlements.⁵⁷ This early negative picture—the "festerling sore--hard nosed" view was held by some scholars and academicians, large segments of the general public, and, most important, by government officials and policy-makers.⁵⁸ Hence,

governments throughout the 1960s frequently used the bulldozer as a major instrument of policy in an effort to eradicate what was considered a visual and social blight on the urban environment.⁵⁹ (Cohen, 1983:17-18)

Such action favoured urban élites: ideologically, it perpetuated the 'myth' that the poor are responsible for their own poverty and reduced pressure for redistributive policies; practically, eradication opportunely freed valuable sites for redevelopment (Gilbert and Ward, 1982). Though often demanded, complete eradication was infrequently practised. Moreover, evicted

⁵⁶ See Perlman's (1976) account of the controversies over urbanization, and the three schools of thought concerning the fate of migrants in the city—a negative, a positive, and a cynical acceptance.

⁵⁷ According to this view, informal settlements are not only physically precarious, but also spawn social pathologies (e.g., alcoholism, drug addiction, prostitution, theft and violence). Residents are distinguished as making limited contribution to the national economy and, due to their lack of apparent integration into the work-force or cultural life of the city, are feared as a 'marginal' and alienated group who can easily be won over to radical alternatives (McGee, 1990; Ward, 1982a).

⁵⁸ Burgess (1978:1128) however contends that "the process of uncontrolled urban growth and peripheral squatting have not been met with as much disapproval as is commonly believed."

⁵⁹ Demolition occurred in cities as far apart as Hong Kong, Nairobi and Rio de Janeiro (Moser, 1982). One of the following three justifications were commonly put forward for evictions. The first (and possibly the most common, was to "improve" or "beautify" the city (Hardoy and Satterthwaite, 1993:120). Indeed, in Kenya, President Jomo Kenyatta defended a large-scale eradication campaign by claiming he did not want Kenya's capital city to develop into a shantytown. A second justification has been the conception that informal settlements are hubs of crime and havens for malefactors. A third justification has been the notion of redevelopment—to use the acquired land more intensively or construct public works or facilities (Hardoy and Satterthwaite, 1993).

populations usually relocate elsewhere, in more discrete and usually inappropriate areas, thereby scandalizing liberal opinion by the severity of the action (Lloyd, 1979; Moser, 1982). Eradication campaigns had little long-term effect on either the urban form or the quality of life for most low-income populations. If anything, they served to strengthen market forces which peripheralized the housing areas of the urban poor and further marginalized their employment prospects (Stren, 1989). This course, thus, came to be recognized as financially expensive and socially disruptive, with the net result being a destruction of the housing stock at a time when the major objective was to increase it (Cohen, 1983). As Abrams (1964:126) observed:

In a housing famine there is nothing that slum clearance can accomplish that cannot be done more efficiently by an earthquake. The worst aspects of slum life are overcrowding and excessive shelter cost. Demolition without replacement intensifies overcrowding and increases shelter cost. It may also increase squatting and thereby quickly create slums that are more stubbornly enduring than those removed. Continued residence in slums may be a necessity for some time to come.

The counter-vision sees informal settlements as communities striving for advancement. This viewpoint appreciates the residents' entrepreneurial capacity and organizational skills in self-help collective efforts in dwelling construction and public works in the community, and their elaborate network of social and political organizations. The policy recommendations arising from this standpoint and the first are diametrically opposed. Rather than eradication of informal settlements, this outlook leads an official policy of legalization and provision of infrastructure and urban services at the locale. The third and intermediate view sees informal settlements as inevitable blight—a natural, though unfortunate, consequence of rapid urban growth. They are, however, recognized as useful in providing cheap labour and easily bought votes, though they are still regarded as "unproductive economically, naive politically, and rather undesirable socially" (Perlman, 1976:17). The policy implications in this case are that informal settlements should be assisted within the limits of expedience, so that they can be recuperated without necessarily modifying the *status quo*.

The lesson from all contexts, in the experience of direct action by the masses housing themselves in informal settlements, that gradually came to be understood was that "housing by the masses" is far more economic and socially viable than "mass housing" (Turner, 1981:31), and:

in spite of all the constraints imposed, sometimes violently by police actions, and despite the consequent distortions of forms and procedures, the poor have done far more for themselves, in absolute terms, than the better off have done for them; and, relatively, they have done vastly more in proportion to the resources used. (Turner, 1983:78)

Thus, the UN assumed a position which, it averred, represented a change in attitude to the urban poor and the informal settlements they construct:

Table 3.1: Different attitudes by governments to housing problems in cities and different policy responses

	<u>STAGE 1</u>	<u>STAGE 2</u>	<u>STAGE 3</u>	<u>STAGE 4</u>	<u>STAGE 5</u>
<i>Government attitude to housing</i>	Investment in housing a waste of scarce resources.	Proliferation of tenements and illegal settlements seen as "social problem".	Recognition that informal settlements or other forms of illegal development are "here to stay".	Recognition that people in informal settlements contribute much to cities economies.	Recognition that low-income groups are the real builders of cities and government action should support their efforts.
<i>Government action on housing.</i>	No action.	Slum and squatter eradication programmes initiated.	Reduced emphasis on slum and squatter eradication programmes.	More emphasis on upgrading and serviced sites schemes. End of eradication programmes.	Government action to ensure that all the resources needed for house construction or improvement are available as cheaply as possible.
<i>Government action on basic services.</i>	Very little action; not seen as priority.	Initial projects to extend water supply to more city areas.	Water supply (and sometimes sanitation) included in sites-and-services schemes and up-grading projects.	Major commitment to provision of water supply and sanitation.	Strengthening of local governments to ensure widespread provision of urban services to existing and new developments.
<i>Government action on finance</i>	Discourage housing investment; considered waste of resources.	Set-up first publicly-supported or guaranteed housing finance agency.	Attempt to set up system to stimulate saving and provide long-term loans for low income groups.	Improve efficiency of formal housing finance institutions to allow cheaper loans; flexible attitude to collateral and small loans for land purchase and house upgrading. Encourage and support informal and community finance institutions.	
<i>Government action on building and planning codes</i>	No action.	Unrealistic standards in public housing one reason for high unit costs.	Not used in sites-and-service and upgrading schemes.	Most public programmes to provide services, land, etc. not following existing codes/standards.	Building/planning standards reformulated-advise and technical assistance as to how health and safety standards can be met.
<i>Government action on land</i>	No action.	No action.	Cheap sites made available in a few sites-and-services projects.	Provision of tenure to illegal settlements. Recognition that unregulated land market a major constraint to improvement of housing.	Release of unutilized/under-utilized public land and action to ensure supply of cheap well-located sites plus provision for public facilities and open space.
<i>Government action on building materials</i>	No action.	No action.	Acceptance of use of cheap materials in low-income housing which are illegal according to building codes.		Government support for production of cheap building materials and components.
<i>Government attitude to community groups</i>	Ignore them.	Ignore them or repress them.	Some "public participation" programmed into certain projects.	Recognition of low-income people's rights to define what public programmes should provide and their role in their implementation.	Recognition that support to low-income community groups is a most effectual and cost-effective way of supporting new construction and upgrading.
<i>Impact on problems.</i>	None.	None or negative.	Usually minimal although certain projects may be successful.	Substantially larger impact but still not on scale to match growing needs.	Impact becoming commensurate with need.

Source: After Hardoy and Satterthwaite (1989)

Instead of perceiving the poor and their settlements as 'marginal' and counter-developmental, governments, through the efforts of the United Nations, individual researchers and their own experience, are seeing positive aspects to the 'housing solutions' developed spontaneously by the urban poor (UN, 1997 cited in Peattie and Aldrete-Haas, 1981:160)

Attitudes to informal settlements have changed radically during recent decades (Table 3.1). The appreciation of the positive attributes of informal settlements led to a widespread reaction against "aberration theory". It was recognised that informal settlements were a manifestation of the normal urban growth process in the South (Drakakis-Smith, 1981). Hence, the hostile view that circulated earlier has been superseded in many circles by a conciliatory and accommodating attitude, and liberal explanation concerning difficulties of access to legal housing for many Southern urban residents (Main, 1990). Indeed, Mangin (1970b:56) remarks that the early stereotype of residents of informal settlements as illiterate, non-productive, lawless, recent migrants has given way to an equally illusory picture, which depicts them as "happy, contented, literate, productive, adjusted, politically conservative-forever, patriotic citizens."

Examination of policies towards informal settlements shows contradictions between different levels of government, inconsistencies between policy and implementation, and reversals through time of both policy and implementation (Peattie, 1979). Main (1990) attributes this to a notable ambivalence in authorities' attitudes towards inhabitants of informal settlements, which must somehow be functional within peripheral capitalist societies under certain development conditions.

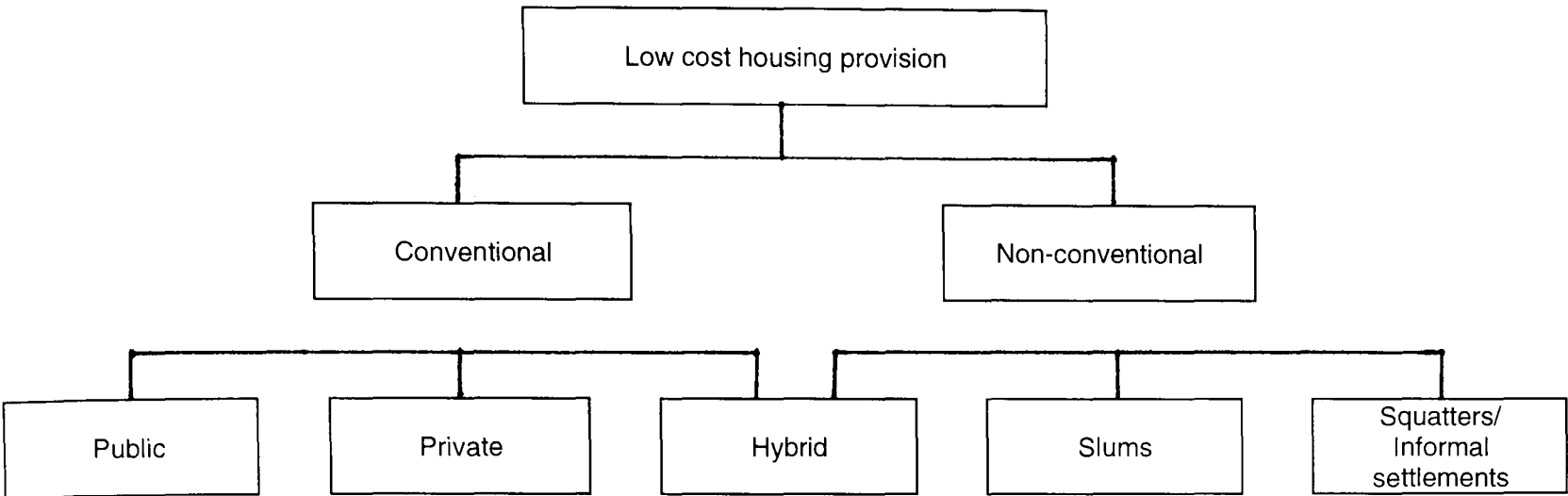
3.7 Urban Low-Income Housing: Characteristics, Typologies and Improvement Strategies

Informal settlements, like all human settlements, do not just happen: they are designed in the sense that purposeful changes are made to the physical environment through a series of conscious decisions among the alternatives available. Thus, as Rapoport (1988:52) affirms, as a peculiar type of "cultural landscape", informal settlements are characterized by specific qualities that can be discussed and studied.

3.7.1 A Typology of Housing Provision for the Urban Poor

The main sources of urban housing in the South are illustrated in Figure 3.2, which is an adaptation of a structural model presented by Drakakis-Smith (1979;1981). The resources available to each of these varies considerably, as do their goals, producing contrasting *modi operandii* in meeting the requirements of diverse socioeconomic groups. The typology is not intended to reproduce reality; it is an abstraction of the real world which may not correspond with the principle sources of housing in all Southern cities. Nor does the model indicate the relative importance of the constituent parts, although it is apparent that throughout the South, the conventional sector, whilst holding most of the financial and materials resources, constructs very

Figure 3.2: Major sources of housing for the urban poor



Source: After Drakakis-Smith (1979;1981)

limited housing directly for the low-income groups. It is primarily a general-purpose model aimed at simplifying the analysis of urban housing provision in the South as a whole.

3.7.2 Slums

Characteristics and typologies of the urban poor and the housing areas they inhabit have long been the subject of scholarly discourse. Much of the earlier scholarly work was conceived in the context of the North and focused on slums and/or slum dwellers. The term "slum", as affirmed by Charles Abrams (1964), is a catchall for poor housing of every description as well as a label for the environment. Because of its inclusiveness, the term too often obscures the vast dissimilarities between one type of slum and another. Slums may be either owner-occupied or rented, either legal or illegal.⁶⁰ They also include a range of dwelling types, and other manifestations of poverty. The United Nations⁶¹ (cited in Anderson, 1991:37) defines a slum as:

... a building, group of buildings, or area characterized by overcrowding, deterioration, unsanitary conditions or absence of facilities or amenities which, because of these conditions or any of them, endanger the health, safety or morals of its inhabitants or the community.⁶²

Abrams (1964) asserts that slums are not always symbolic of retrogression—they may be the first advance from homelessness into shelter. Slums develop and continue to exist because no nation is able to produce adequate housing at a cost that all can afford. But Clinard (1991) contends that the blame for their existence must be shared by landlords, tenants and the community:

⁶⁰ But, Segal (1988:159), affirming that, in terms of public policy, there are important distinctions to be made between slums and squatter settlements states: "Slums consist of rented houses [on] legally occupied land; squatter settlements consist of builder-occupied houses on illegally occupied land."

⁶¹ United Nations Secretariat (1952) Urban Land Policies. Document ST/SCA/9, April 1952, p.200. New York. See also Drakakis-Smith (1979), McGee (1967) and Obudho and Mhlanga (1988a) for alternative definitions of slums and squatter settlements. See also Juppenlatz's (1970) distinction between the "squatter" and the "slum-dweller" of the city.

⁶² The impossibility of establishing international standards of habitability, according to Drakakis-Smith (1979), makes the identification of slum districts and their populations an extremely characteristic issue. Hence, perhaps not unexpectedly, the popular conception of the slum commonly relates less to the physical fabric of the dwellings themselves and more to the assumed nature of the environment and associated lifestyle of the inhabitants.

landlords owing to their indifference to their property and their readiness to profit from overcrowding; tenants because they are too poor, too indifferent, or too ignorant to maintain the dwellings properly; and the community because it allows slums to develop and to persist and fails to support government efforts to enforce decent standards. A similar theory cites the following as factors that originate slums: the physical surroundings of the dwelling, the physical conditions of the dwelling, the owner and the tenant. Propositions for improving or eliminating slums hence underline the physical environment as a perceived cause of slum conditions, and include three essential requisites: foresight in construction; careful maintenance by owner and tenant; and proficient supervision by the authorities (Clinard, 1991).

Three main types of slums are distinguished by Bergel (1990). The 'original' slum comprises buildings which, in the first instance, were inadequate and are beyond rehabilitation and thus need to be eradicated. The second comprises slums created by the departure of more prosperous groups to other locations and subsequent deterioration of the neighbourhoods they have left. The third is primarily a phenomenon of transition—once the area around a main business district has become blighted, rapid physical and social degeneration ensues. A comparable theory is that the city, as it grows, creates about its central business district a belt of desolate, polluted, physically deteriorated neighbourhoods. In these neighbourhoods, the urban poor are segregated by the incessant competition of the economic process in which land values, rentals and wages are fixed. The slum, however, develops into an area of high land values but bargain rents, a curious paradox that results from the urban land market and speculation (Clinard, 1991).

3.7.3 Squatting, Squatter Settlements and Squatters

The old frontier regions of the North were once also the scenes of squatting; i.e., forcible pre-emption of land by landless and homeless people in search of an abode. But in time, the land was commonly granted or sold to the squatters, titles were certified, and the law of force was supplanted by the force of law. Squatting was, however, rarely carried over into cities as law and property rights were firmly established (Abrams, 1964).

In most of the South, squatting has emerged wherever there has been massive rural-urban migration and insufficient shelter at the destination (Abrams, 1964). Generally, "squatter settlements" (variously named in different countries) have developed on unserviced urban land, and where land has been occupied illegally—or if not illegally, at least without the approval of the urban authorities. In sum:

Squatter settlements share one distinguishing feature: they are built on land that does not belong to those who build the houses. The land is invaded by them, sometimes by individuals or small groups, and sometimes as a result of collective action. Such possession with respect to land held without title is the origin of the term 'squatter'. (UNCHS, 1987:15)

In his seminal study of shelter, urban land, and urbanization problems in the South which presents a series of hypotheses for others to evaluate and challenge, Charles Abrams (1964) affirms the heterogeneity of squatter tenure, and elaborates ways in which they may generally be classified. The *owner squatter*, the most common variety, owns the dwelling but not the land. The *semi-squatter* surreptitiously erects a dwelling on private land and subsequently comes to terms with the owner. The *squatter tenant*, the poorest class, neither owns nor builds a dwelling, but pays rent to another squatter. The *squatter holdover* is a former tenant who has ceased paying rent and whom the landlord is apprehensive about evicting. The *squatter landlord* is typically a squatter of long standing with accommodation to rent, often at exorbitant profit. The *speculator squatter* anticipates recognition from the government or the private owner. The *occupational* or *store squatter* establishes a small enterprise on land he does not own and may operate a prosperous business without paying rent or taxes. The *squatter "cooperator"* is part of the group that shares the common foothold and defends it against infiltrators. The *floating squatter* lives on a vessel in a harbour which serves as a dwelling and frequently a workplace.

The root cause of squatting, according to Drakakis-Smith (1981), lies not in the nature of the squatters themselves; rather it is a response to their privation of access to conventional housing. The imperfect synchronization between effective demand and housing supply is a function of the nature of urban society, and not the malpractice of the individual.

3.7.4 Developmental Typologies

To understand the process of informal settlement development, knowledge of physical evolution must be supplemented with information on urban economics, politics and culture. One line of enquiry has been to examine the broader priorities of the urban poor at various stages of their 'development' in terms of their housing demands and in terms of their wider aspirations (Drakakis-Smith, 1981).

3.7.4.1 The Culture of Poverty

The literature defining a "culture of poverty" has become a major source of marginality theory; the specific phrase is linked to the work of Oscar Lewis, the primary theorist of the culture of poverty.⁶³ Lewis differentiates between poverty itself and its cultural aspects, holding that the former is simply deprivation of certain needs or wants, while the latter is part of a "design for living". Lewis (1958:2, cited in Perlman, 1976:115) elaborates:

Poverty . . . is not only a state of economic deprivation, of disorganization, or of the absence of something; it is also something positive in the sense that it has a structure, a rationale, and defence mechanisms without

⁶³ Perlman (1976) notes that Lewis's first mention of cultural traits associated with poverty is in *Five Families*. He went on to specify his notion of the culture of poverty and list traits throughout his writing, which are perhaps most explicitly stated in "the culture of poverty". But Mangin (1967:91) takes issue with the term "culture" since a change in employment or acquisition of wealth may transform an individual's "culture".

which the poor could hardly carry on . . . It is a dynamic factor which affects participation in the larger national culture and becomes a subculture of its own

"The culture of poverty" (Lewis, 1966) postulates the emergence of common cultural and (dysfunctional) personality traits among those of low economic status in different societies, i.e., patterns of behaviour and values, in response to a situation of deprivation. These characteristics are perpetuated through the socialization process to subsequent generations, persisting despite objective changes in economic or social circumstances. This supposedly creates a cycle of poverty which is even more difficult to escape than the economic deprivation itself. Since the perpetuation of poverty is thus ascribable to a lack of fundamental attitudinal prerequisites or behaviour patterns, the poor are effectively blamed for their own status. Because the culture of poverty fits well within the long academic tradition of "blaming the victim", it lends credibility to those who would censure the poor for their own poverty. Indeed, Kemper (1974:23) holds that, although the culture of poverty has been criticized by several anthropologists, the notion that the (nuclear) family plays a major positive role in migrant economic assimilation and psychological adaptation to urban life is generally accepted.⁶⁴

3.7.4.2 A Theory of Slums

"A Theory of Slums" propounded by Charles Stokes (1962) is not concerned with neighbourhoods or buildings except tangentially; rather it is a socioeconomic analysis which, in fact, constitutes a branch of the theory of the labour force. Stokes seeks to derive a hypothesis about the interrelationship and rate of change of the major variables associated with slums to enable predictions about slum development. Stokes constructs a simple model which sorts out two variables considered to be determinants of slums: (i) the psychological attitude toward upward mobility through the class structure by assimilation or acculturation to full participation in the community, and (ii) a measure of socioeconomic impediments to such movement.

The model distinguishes between slums of 'hope' and slums of 'despair', and escalator and non-escalator classes. 'Hope' and 'despair' express the psychological attitude of slum inhabitants towards bettering themselves, the former being positive and the latter negative. This may readily be translated into a distinction between the employable and unemployable. Slums of 'hope' are the home of the immigrant, the recent arrival, the stranger. An escalator class describes a group of people who, barring exceptional circumstances, can be expected to move up through the class structure. A non-escalator class is one which is disallowed in some way the possibility of escalation. The premiss, as summed up by Yeh (1987), is that, in an industrializing and growing

⁶⁴Indeed, the Habitat Agenda (UNCHS, 1997b) underlines the need to strengthen the family as it is the basic unit society. Hence, human settlements planning should take into account the constructive role of the family in the design, development and management of settlements. Furthermore, society should facilitate, as appropriate, all necessary conditions for its integration, reunification, preservation, improvement, and protection within adequate shelter and with access to basic services and a sustainable livelihood.

economy, a larger proportion of rural-urban migrants may be unable to meet the increasing demands for high level education and skills and are thus destined to remain in slums of "despair".

The two theses, "A Theory of Slums" and the "culture of poverty", according to Yeh (1987), are analogous in that they both hypothesize that there are communities among the urban poor which are destined to a life of perpetual poverty. But various writers (Abrams, 1964; Mangin, 1970a; Turner, 1969) have demonstrated that not only are many poor households able to improve their housing conditions over time, but that the reaction of the poor to poverty is often rational, and they have recognized the most pragmatic approaches to bettering their residential circumstances. These judgements are diametrically opposed to the earlier thinking based on "a culture of poverty" which fundamentally encouraged the notion that "the poor are poor because they are poor" (Gilbert and Gugler 1991:118).

3.7.4.3 Turner's Classifications of Settlements and Rural-Urban Migrants

Particularly prominent in the development of taxonomic classifications has been John Turner, basing his approach largely on the premiss that the market value of the squatter dwelling is less important than its use to the consumer.

Turner's Typology of Settlements in Terms of Development Levels and Security of Tenure

Figure 3.3 shows Turner's (1969a) descriptive model of the relationship between levels of physical development and degrees of security of tenure. In formulating the model, Turner (1969) acknowledges that the data obtained on settlements in the South is rather limited compared to the vast subject matter, making it difficult to arrive at any hard conclusions.

However, as Drakakis-Smith (1981) notes, despite its multiple categories, Turner's settlement typology (Figure 3.3) is the least useful of his (Turner's) descriptive models as it incorporates little beyond the physical, tenorial emphasis of earlier taxonomies.

Turner's Threefold Classification of Rural-Urban Migrants

Turner's (1968) typology distinguishes three low-income housing groups with different residential priorities which are pertinent to urban settlement patterns in the South, and housing improvements in particular:

Figure 3.3: Turner's typology of settlements in terms of development levels and security of tenure

					LEVELS OF PHYSICAL DEVELOPMENT
			complete semi-squatter	complete legal	COMPLETE structure and utilities to modern standards (A)
		incomplete squatter	INCOMPLETE SEMI-SQUATTER	incomplete legal	INCOMPLETE structure or utilities but built to modern standards (B)
	incipient tentative squatter	INCIPIENT SQUATTER	INCIPIENT SEMI-SQUATTER		INCIPIENT construction of potentially modern standard (C)
	PROVISIONAL TENTATIVE SQUATTER	PROVISIONAL SQUATTER	PROVISIONAL SEMI-SQUATTER		PROVISIONAL construction of low standard or impermanent materials (D)
nomad	TRANSIENT TENTATIVE SQUATTER	transient squatter			TRANSIENT temporary and easily removed shelter (E)
ITINERANT transient occupancy with no intention of permanent tenure (E)	"TENTATIVE SQUATTER" occupancy without any legal status or guarantee of continued tenure (D)	"ESTABLISHED SQUATTER" de facto and secure possession but without legal status (C)	"SEMI-SQUATTER" or semi-legal without full recognition but with some rights (B)	LEGAL OCCUPANCY institutionally recognized forms of tenure (A)	

NB. Types noted in capital letters are those common in autonomous urban settlements. (Turner (1969:508) defines "autonomous urban settlement" as "urban settlement, whatever its duration or expectations may be, that takes place independently of the authorities charged with the external or institutional control of local building and planning.") Settlements commonly change their status over time and, hence, describe trajectories on the chart.

Source: After Turner (1969a)

... the lowest is that of the 'bridgeheader' seeking a toehold in the urban system and hoping to achieve the intermediate level of the 'consolidator', who has obtained a relatively firm foothold but is in danger of losing it unless it can consolidate his newly acquired socio-economic status; the third level is that of the higher income (insured and professionally secure) 'status seeker'. (Turner, 1968:358)

The model is based on a definition of housing not in terms of structures, but rather in terms of the dwelling environment; that is, in terms of performance or the relationships between the habitat and the inhabitant. The definition is thus qualitative and not quantitative or confined to material standards. The analysis is based on the assumption that there are three functions of the dwelling environment: (i) location (a place must be accessible if it is to function as a dwelling); (ii) tenure (it must provide secure, continuous residence for a minimum period); and (iii) amenity (it must provide protection from inimical elements, whether climatic or social). According to Potter (1985), Turner's model parallels the division of settlements, and to a considerable degree their inhabitants to the categories of 'hope' (consolidation) and despair (bridgeheading). This assertion however is moot as Turner unequivocally states that the bridgeheader aspires to consolidator status.

Table 3.2: An interpretation of the characteristics of Turner's migrant categories

	<u>BRIDGEHEADERS</u>	<u>CONSOLIDATORS</u>	<u>STATUS SEEKERS</u>
LENGTH OF STAY IN CITY	less than 5 years	5-10 years	more than 10 years
PHASE IN FAMILY CYCLE	unmarried	relatively recently wed; child-bearing stage	older marriages child-rearing or child-launching stage
TYPE OF EMPLOYMENT/ EMPLOYMENT STATUS	unskilled casual employment/ small-scale sector	unskilled fixed employment/ corporate sector	skilled fixed employment/ corporate sector
TYPE OF INCOME	very low, unstable, insecure	low, stable, secure	middle-income, stable, secure
HOUSING PRIORITIES	1. location 2. tenure 3. amenity	1. tenure 2. location 3. amenity	1. amenity 2. tenure 3. location
SHELTER/HABITAT	(sub-)tenants in inner-city slum areas	owner-occupants through self- help housing on the present periphery	owner occupant or tenant, either via complete consolidation of (self-help) housing on the former periphery, or in (government-aided) housing schemes

Source: Van Lindert (1992:159)

3.7.4.4 Uzzel's Model of the Interaction Between Residents and Localities

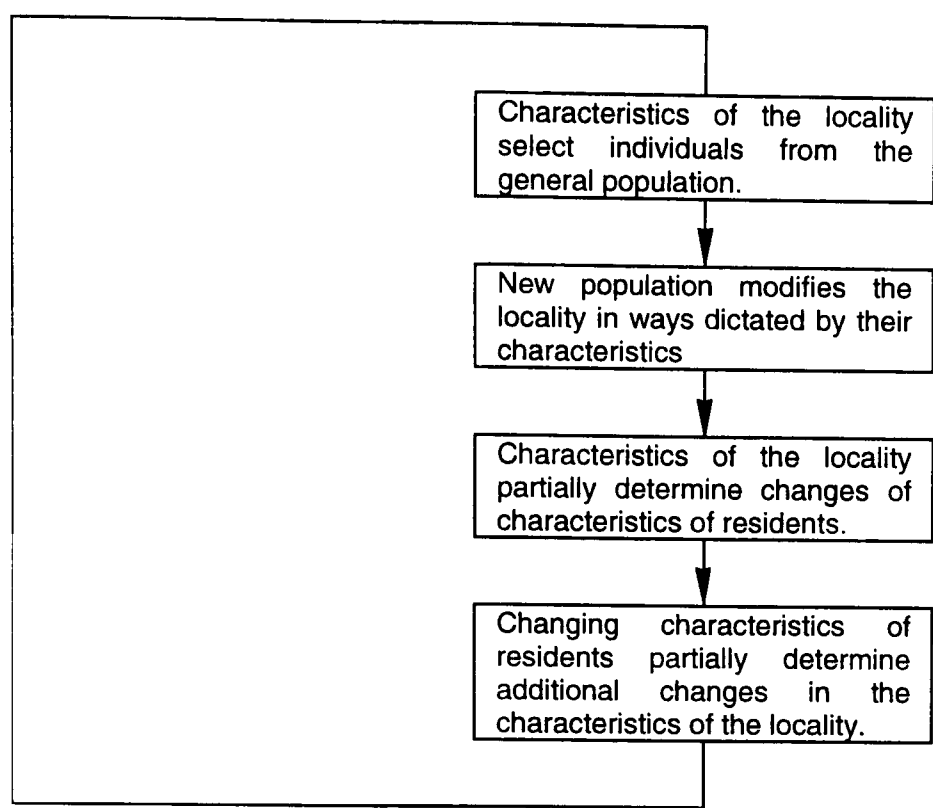
An alternative model, which treats the development of localities as the systematic product of interaction between the characteristics of the settlement and characteristics of its population, is presented by Uzzell (1974).⁶⁵ The model (Figure 3.4) also emphasizes the variations of population characteristics over time. The central notion behind Uzzel's model, which is intended to be applicable to any locality, is that at any given time there is a population universe from which a set of people is attracted by characteristics of an informal settlement and seeks accommodation there. The characteristics of the locality vary over time, partly in accordance with the residents' characteristics, and how they invest their capital and labour. Any changes in the locality's characteristics will be reflected in variant characteristics of the people who will be attracted to it.

3.7.5 Alternative Classifications of Urban Low-Income Settlement Types

A comprehensive study undertaken by Anthony Leeds (1969) attempts to synthesize empirical data focusing on the analytical problem of squatter settlement. The study aims to demonstrate: (i) that there are (basic) variables which generate the informal settlements domain; (ii) that secondary variables generate differential characteristics of sub-classes of settlements; and (iii) that tertiary or local variables govern the peculiar characteristics of individual settlements. In principle, with adequate measures for variables at each level, and for their interaction, prediction of the forms, conditions, and development trajectories of any informal settlement

⁶⁵ The "characteristics" of a locality that Uzzell (1974) has in mind are *perceived* characteristics (i.e., the way they are interpreted by potential residents) rather than characteristics in an objective sense (i.e., topography, urban geographic location, availability of urban services, prevailing and potential land use, tenure options, etc.). The "characteristics" of populations are not the obvious socioeconomic characteristics (age, income, place of origin, etc.), but "the uses people wish to make of residence in the locality", which are even more difficult to operationalize (Uzzell, 1974:115).

Figure 3.4: Interaction between residents and localities



Source: After Uzzel (1974)

should be possible. These propositions, Leeds holds, are not only of theoretical interest, but also germane to policy formulation.

In another study, Leeds (1977) observes that a prevailing feature in Latin American cities is the specialization of housing settlement types. He propounds that, in addition to the *favelas* or squatter settlements⁶⁶ inhabited by the poor, which are typically the most conspicuous, a series of less apparent, and often difficult to distinguish, low-income neighbourhoods also exists. These include: rooming houses; one and two-room rental units sharing sanitary facilities; government temporary projects; residential enclaves characterized by the occupational specialization of the low-income population; popular (i.e., proletarian) housing "Levittowns"; expanses of modest, separate, privately-owned houses on official streets with few or no urban services; and slums proper—areas of originally good, now-decaying housing and urban services.⁶⁷

A notable aspect of many informal settlements is the constancy between housing types in individual settlements. The repetitious use of congruous building forms is not incidental:

Rather as in any culture, they have become standardised stylistic models, selected by both owners and builders as practical and symbolically appropriate . . . [and] influenced not only by what is already built but by what the small local contractors in the area are accustomed to build. (Vigier, 1992:104)

⁶⁶ Leeds (1977) maintains that, despite being quite heterogeneous housing and social areas, squatter areas comprise a single housing-settlement type by virtue of their origin and common characterizing feature of illegal occupancy of land and, hence, special jural status before the law and public authorities.

⁶⁷ Each of the settlement types has characteristic physical apparatuses (buildings, urban services, open space, etc.) which, together with the specialized physical networks of the labour structure of industry, services, transportation, etc., and of the administrative organization, comprise the physical trappings of that which we tend to identify with and understand as the city (Leeds, 1977).

Haaroff (1979) seeks to provide a more comprehensive classification of settlement typologies in South Africa by elaborating extant definitions—informal, unauthorized and spontaneous—of settlement types. An explicit distinction is drawn between the nature of land occupation or tenure, and the status of any building improvements on that land. By cross-referencing these factors in a matrix, nine settlement typologies are derived. The conformation of different settlements to the various typologies is dependent upon the legal point of reference.

In the 1950s and 1960s, cities were able to absorb substantial numbers of new migrants because, according to Doebele (1986:259), "the very fabric of urbanization [in the South] was quite porous." Doebele cites as a prime example of this "porosity", Bangkok, where six separate subsystems of housing were functioning so well that there was no real housing problem.⁶⁸ Alternatively, Angel and colleagues' (1977) study of Bangkok's low-income housing delivery system identified five subsystems, which together "provide housing for *all* the low-income people in the city" (p. 80, emphasis theirs).⁶⁹ These are: the workers' housing subsystem, the squatters housing subsystem, the filtered housing subsystem, the rural commuters housing subsystem, and the public housing subsystem, which, in turn, are also subdivisible. Most of the components of the housing delivery system rely little on planners and other professionals, and receive little attention from public agencies. Still, the system is reliable, providing a variety of housing solutions as needed.

Three main types of informal housing are distinguished by Bamberger and his co-authors (1982)⁷⁰ and Keare and Parris (1982) in El Salvador: squatter settlements (*tugurios*), extralegal subdivisions (*colonias ilegales*) and tenements (*mesones*). These can also be found in other Latin American cities.

Moitra and Samajdar (1987) differentiate three principal categories of low-income settlements in the Calcutta Metropolitan Area: squatter settlements (comprising unauthorized shanty colonies); refugee colonies (resulting from the partition of the country at the time of independence); and *bustees* (which have always been part of the recognized urban housing stock and are distinguished by certain physical traits such as poor quality dwellings, absence of services, and a high-density/low-rise profile, and also have definite legal and socioeconomic connotations. They also support a large informal manufacturing sector). On the other hand, according to Roy (1983), settlements inhabited by poor Calcuttans can be classified into eight types: (a) conventional bustees; (b) legal refugee colonies; (c) extra-legal refugee colonies; (d) squatter settlements;

⁶⁸The various low-income settlement types in Bangkok, according to Baross (1983), reflect stages of transformation from traditional to modern (market) land transactions.

⁶⁹Tanphiphat (1983b), however, contends that the non-existence of numerical deficits that could be substantiated through observation anywhere in Thailand does not necessarily mean that all is well in the housing sector.

⁷⁰The study by Bamberger and others (1982) found that, together, they house approximately three quarters of El Salvador's population.

(e) jute lines; (f) private self-help housing;⁷¹ (g) old rented walk-ups; and (h) government tenements for low-income settlements.

Development agencies have also categorized low-income settlements. The Slum Improvement Programme of the National Authority in Thailand has distinguished three low-income settlement types in Bangkok: those to remain as permanent low-income housing areas; those to be improved temporarily through provision of minimum public utilities and amenities; and areas which are not to be improved due to the probability of their being required for redevelopment (Cheema, 1986). In El Salvador, FUNDSAL⁷² differentiated the national urban housing market into several distinct sub-markets, each operating with a different rationale, serving different demand structures, and with different policy implications. FUNDSAL identifies three principal types of informal settlements as the only available options for the poorest households: invasion-type squatter areas, extra-legal land-subdivisions, and rental rooms in tenement houses (Bamberger and Deneke, 1984). In Metropolitan Kano, four types of illegal urban development are distinguished by Kano State Urban Development Board determined by the tenure of the land on which buildings are constructed and layout (Main, 1990).

Four definitive variables form the basis of classificatory analysis of the phenomenon of auto-construction (self-help) in Latin America advanced by Salas (1988): the process; the product; the technological medium; and the socioeconomic medium. The process is the 'how' of auto-construction which takes into account the organizational system, the management of the dwelling and household expectations which will determine the course of action taken and the duration of its execution. The result of the process is the product which should be evaluated by its formal appearance as well as its conceptual definition and design. The process is generated by the technological medium, which includes the materials, tools, equipment and labour, and is the instrument that gives rise to the conception and realization of the product. The socioeconomic medium subsumes the needs and habitat requirements, as well as the community's expectations and attitudes, but these are limited by its purchasing power which in turn restricts access to a better quality of life. Also of consequence is the state's attitude towards auto-construction which ranges from inhibiting it to promoting it as a possible solution to the housing problem.

⁷¹These settlements are typically located in peripheral areas where the price of land is comparatively low. Built on small, purchased plots which are usually unserviced, the structures are mostly semi-permanent or temporary (Roy, 1983).

⁷²Fundacion Salvadorena de Desarrollo y Vivienda Minima (FUNDASAL), a private non-profit Salvadorean foundation.

3.3: General typology of low-income settlements

TYPE	LAND ACQUISITION	TENURE	LAND AND PHYSICAL CHARACTERISTICS/ PROPENSITY FOR UPGRADING
(1) Irregular settlements (1a) Squatters	Invasion of public or private land	<i>De facto</i> or <i>de jure</i> ownership'	Periphery where security of tenure then upgrading is likely. Otherwise static shantytown structures with little consolidation.
(1b) Illegal sub-divisions	Sale of private land Sale of customary land	Owners, although titles may be imperfect	Periphery. In various phases of consolidation and upgrading through self-help'.
(2a) Shanty towns	Squatter, or more usually, renters	Rental	Mostly down town and around city centre/small plots. Structure with few public amenities and little prospect of their provision. Little likelihood of self-help improvements because: (a) no security of tenure; (b) difficulty of creating an investment cash surplus for improvement (because of rental outgoings); (c) very small plot sizes.
(2b) 'Street sleepers'	May have regular sleeping places	None	Down town/inner city. Minimal shelter, removed daily. Often associated with workplace.
(3) Tenements	Converted large houses or purpose-built tenements	Rental	Mostly down town. An increasing proportion of new rental accommodation is located in older irregular settlements (1a, 1b). Single room per family and share services.
(4) Public housing projects (4a) Complete units	Government purchase and sales	Owner or rental	High density, good amenity, but relatively expensive.
(4b) Incomplete units – site and services	Government purchase and sale	Owner	Periphery. Basic services mostly installed but house construction varies.
– 'core' units	(sometimes interrelated agencies sponsorship)	Owner	Self-help and mutual aid to improve external house structure.

Source: After Harpham *et al.* (1988)

Self-help settlements typically fall into two or more of the following categories, according to Gilbert (1992a): (a) most of the dwellings were built by the original or present occupants; (b) the settlement as initially founded suffered from some degree of illegality or lacked planning permission; (c) when the settlement was first established most forms of infrastructure and services were lacking and in many cases remain inadequate; (d) the settlements are inhabited by the poor however defined. Further distinguishable sub-types include: invasions (of either public or private land, whether organized or incremental), where no purchase of the lot is involved; pirate settlements, where the land is purchased, but lacks planning permission; rental settlements, where dwellings are constructed on rented land; and usufruct settlements, where permission to use communal land has been granted by local government, tribe or private individual. In certain

cases there is an overlap of the subtypes.⁷³ Gilbert (1992a:122), however, underlines that because self-help housing takes a myriad of forms, "generalization . . . is dangerous."⁷⁴

Harpham and her co-authors (1988) affirm that it is difficult to generalize about the characteristics of poor urban environments. But they hold that, in addition to income levels, certain indicators are of particular utility in the formulation of improvement policies and strategies. On this basis, they present a general typology of low-income settlements based on land acquisition, tenure, land and physical characteristics, and propensity for upgrading (Table 3.3).

A paramount feature of informal settlements, as noted by Kellett (1995), is that they develop and change through time. For example, regularization can transform legal status; infrastructure can be upgraded; dwellings can be improved; houses can be bought and sold; and residents can come and go. Consequently, without an understanding of the time dimension, analysis will be seriously flawed. Therefore,

it is important to conceptualize informal housing as a dynamic process of change, in which characteristics are transformed and developed (Kellett, 1995:30).

The relevance of typologies of low-income urban settlements and/or their characteristics to improvement policies and strategies is still in question. A foremost resolution of a UN expert group meeting⁷⁵ cited by Yeh (1987) that discussed the relationship between settlement typologies and improvement strategies was that typologies in themselves do not constitute adequate basis for either policy discussion or strategy formulation for a number of actual situations at both local and international levels. Yeh's (1987) analysis of some well-known typologies of settlements similarly finds no correspondence between typologies of settlements and improvement strategies. However, he notes that certain settlement characteristics may indeed have operational relevance for *in situ* upgrading. Hence, a rigidly standardized procedure cannot be followed in implementing upgrading programmes—they should be designed to fit the characteristics of the particular situation and to address the needs and priorities of the residents.

Comparative and developmental typologies, according to Yeh (1987), may be useful as sensitizing concepts, preferably as part of more in-depth analysis, in the early stages of policy orientated analytical inquiry. The potential utility of understanding settlement characteristics in

⁷³ In reviewing Gilbert's (1992a) definition of self-help housing, Kellett (1995:26) observes that, while all the characteristics combined provide an apparently comprehensive frame of reference to identify and describe the variations in self-help housing, there is no mention of the physical nature of the dwellings themselves. The nearest is that they are likely to fall short of official standards and regulations, and to be poorly serviced.

⁷⁴ With reference to low-income neighbourhoods in Latin America, Burgess (1985) points out the dangers involved in generalizing from nation to continent, or from intermediate size city to large city.

⁷⁵ United Nations Centre for Human Settlements (1981) *The Residential Circumstances of the Urban Poor in Developing Countries*. London: Praeger.

an operational or policy context will depend on what needs to be improved, the objectives and the strategies. Thus, if the primary concern is improving the living environment of the on-site population, then settlement upgrading is the only locality-based strategy. The definition of the actual significance of any characteristic or combination of characteristics in each specific context will determine the extent of any generalization. From the planning perspective, it is important that both similarities and differences in settlement characteristics are emphasized, as each settlement is likely to have unique features that are not generalizable. In each specific context, therefore, the actual significance of any variable or combination of variables has to be defined which will delimit generalizability (Yeh, 1987).

In sum, multifarious urban low-income informal settlement types exist in the South and, within generic types, there may be so much variation as to defy generalization. Each type or sub-type not only has its own unique original, social, economic and environmental characteristics and patterns, but also realizes different types of settlement needs. Thus the treatment of all types as a single category serves to compound confusion and makes it impossible to understand the dynamics of informal settlements and their housing markets.⁷⁶

3.7.6 Problems in the Classification of Informal Settlements

The whole problematic of classification of low-income neighbourhoods, as determined by Burgess (1985b:288),⁷⁷ in a sense revolves around the manifestation of theoretical and methodological issues at an empirical level, that is, "how the characteristics of the . . . urban settlement process combine with the general problems inherent in classification to create a series of difficulties at the concrete level." More specifically, there are problems in classification based on legal criteria—the most-widely used and discussed classificatory principle. These problems include: the legality or illegality of settlements at the time of their formation; the timescale of settlement formation; the development of legislation over time; the enforcement of legislation; and drawing the line between 'legal' and 'illegal'. There are also questions associated with classification based on a genetic principle as opposed to existing conditions, difficulties of finding a direct equivalence between forms of housing production and settlement types, and deficiencies of classification based on material conditions. He thus holds that, given these problems, the best classification is one that minimizes the weaknesses and which, in a pragmatic sense, best serves to advance the understanding of the processes under study, even if this is at the expense of methodological rigour. Pointing to the advantages of classification based on the provision of services, Burgess (1985b:303) concludes: "there is no doubt that . . . classification is in itself an important and useful exercise."

⁷⁶See also Payne's (1989) review of typologies defining informal land submarkets and his discussion of their utility.

⁷⁷Although Burgess (1985b) refers to low-income neighbourhoods in Latin American cities, the observations are widely applicable to informal settlements throughout the South.

Rakodi (1992) concurs that housing typologies (i.e., categorizations of housing production and supply, housing delivery systems, low-income settlement types or housing submarkets) may indeed provide a basis for analysis of the organization and characteristics of production and supply by each type of housing delivery system. However, she cautions that:

[they] run the risk of being sterile descriptive tools, degenerating into ever more complex subdivisions of housing supply and delivery without providing explanations of the perceived categories or of processes at work in the housing market. (Rakodi, 1992:41)

3.8 Urban Low-Income Informal Settlements in Kenya

3.8.1 Evolution of Informal Settlements in Kenya

In the previous chapter we saw that the contribution of the formal sector to the urban low-income housing stock has been, at best, minimal. The quantitative lack of affordable formal housing, the failure of low-income housing projects to reach the targeted beneficiaries, and the high cost of conventional building materials have constrained the urban poor majority to unconventional solutions to their housing predicament. Hence the proliferation and expansion of informal settlements. Although typically illegal in various contexts, informal settlements nevertheless provide a housing solution compatible with the economic possibilities of low-income households and their ability-to-pay, and also match their needs and priorities.

But, it has also been argued that, most of Kenya's urban centres being a product of colonialism, informal settlements are likewise essentially a product of the colonial era.⁷⁸ Obudho and Aduwo (1989) maintain that squatting and informal settlements resulted from a broader colonial and post-colonial economic structure which generated the formal and informal rural, as well as the formal and informal urban, spatial structures.⁷⁹ They thus consider it is erroneous to perceive informal settlements solely as a product of the urbanization process. Lamba (1994) similarly asserts that informal settlements in Nairobi are the legacy of a history of neglect and mal-development.

Kenya's low-income urban housing stock, in fact, used to be dominated by public sector projects, but this situation has changed drastically. The inability of public agencies to meet the housing demand of the ever-increasing number of low-income households has resulted in private individuals and associations constructing dwellings, both for themselves and for rental, in informal settlements. Their performance has been notable, both for the rapidity of their construction activities and their sensitivity to low-income housing demand. At times harassed, at

⁷⁸ In *The African City*, O'Conner (1983) affirms that, the official colonial response to squatter settlements was frequently to disregard them., but if they grew rapidly they were demolished.

⁷⁹ McTaggart (1988) similarly asserts that Southern cities reflect the intrusion of external influences—in many cases colonial administration, and in others participation in international commercial and trading circuits. Informal settlements, he holds, are the means whereby indigenous populations can enjoy some of the benefits of the city and at the same time accommodate its demands.

other times reluctantly tolerated, informal settlements and their residents have been mostly left to their own devices, constructing their own shelter and organizing their own basic infrastructure. Originally, the prevalent forms of land tenure in informal settlements were squatting and leasing,⁸⁰ but land ownership has gradually succeeded them as the predominant form of tenure (Lamba, 1994; Morrison, 1974)

A number of studies have revealed that "squatting" as it is conventionally defined⁸¹ no longer exists in Nairobi and Kenya's secondary towns. The provision of shelter for the urban poor has developed into a commercial activity, with informal settlements involving the operation of the private rental sector, albeit illegal. Housing for the poor is now a commodity which is rented from others who have the capital and organization to control housing provision in the informal sector of the land and building economy (Amis, 1984; 1988; 1996; Andreasen, 1989; Lee-Smith, 1990; Macoloo, 1988; Syagga and Malombe, 1995).⁸² In this respect, Nairobi provides a salient example of an accelerated urbanization in which a substantial part of the built environment is derived from commercialized informal housing production. Moreover, Kenya is one of several African nations where "it is easier for the rich to squat than the poor" (Yahya, 1990:157).⁸³

Informal settlements have become the hallmark of nearly all rapidly growing urban centres in Kenya. They are proliferating in all the larger urban centres, and constitute the predominant source of new urban housing. Indeed, informal housing accounts for 60% to 80% of all urban housing constructed in the last decade or so (Syagga and Malombe, 1995). It has also been estimated that about 60% of the population in Nairobi⁸⁴ and 40% of that in other urban centres live in informal settlements (Karirah, 1993).

3.8.2 The Commercialization of Informal Settlements in Kenya

The types of accommodation available to poorer groups in the South vary enormously from city to city; but some common threads are identifiable. Perhaps the most significant is the increasing commercialization of illegal housing markets in numerous cities—or at least in the best located illegal housing areas. This is reflected in the commercialization of informal land markets, and

⁸⁰ In the case of the former, a house builder simply erects a shelter on a parcel of expropriated land while, in the latter, a house builder makes an informal arrangement with a landowner to pay monthly rent. In both cases, the threat of eviction or demolition by either the Government or by the landowner, is substantial (Morrison, 1974).

⁸¹ Amis (1990:17) defines the conventional perception of "squatting" as involving "the illegal occupation of land and self-construction of shelter. The settlements so formed are often seen as politically autonomous, under a permanent threat of demolition and outside the legal system." But Kayongo-Male (1980) mentions that while in one respect, 'squatting' does refer to illegal occupation of land, the authorities in Kenya also consider as squatter areas those in which a large proportion of structures are built without regard for planning and building by-laws and regulations.

⁸² With regard to West Africa, Peil (1976) hypothesizes that squatting results from lack of alternatives and that the options open to urban dwellers make squatting unnecessary. The rareness of squatter settlements is explained by land tenure patterns, official tolerance of substandard housing and the attitudes of migrants towards permanent residence in urban areas.

⁸³ Ghanaian squatting too, for example, tends, almost invariably, to be of high-cost rather than low-grade housing (Korboe, 1992)

⁸⁴ UNCHS (1996) states that three-quarters or more of the housing stock in Nairobi is unauthorized.

also in the growth of commercial markets for rooms in informal settlements (Hardoy and Satterthwaite, 1989; Payne, 1989). A burgeoning literature has documented this commercialization in the last two decades,⁸⁵ and clearly established the existence of market mechanisms in contradistinction to the self-build model associated with Turnerian philosophy (Amis, 1996).⁸⁶

In Kenya, this commodification process has taken the form of the development of an informal private rental housing market (Amis, 1984; 1987; 1988; Andreasen, 1989; Macoloo, 1988; Majale, 1993; MDC, 1993; Syagga and Malombe, 1995; Ward and Macoloo, 1992). The result has been to transform informal settlements into areas dominated by rental housing and market mechanisms. The vast majority of poor households now rent housing, where previously they may perhaps have been able to construct their own. At the same time, the administration has gained control in these areas in a related process. These two trends, according to Amis (1996), are a consequence of World Bank intervention in urban housing policy and practice in Kenya since 1972, a paramount result of which has been *de facto* acceptance of informal settlements.

The commercialization of informal settlements means that they have become absorbed into the general housing market and only partly continue to serve their original function of providing shelter for impoverished, homeless households. Many of the inhabitants will consequently be displaced to start anew the process of establishing another settlement as the cycle repeats itself (Haywood, 1986).⁸⁷ Indeed, Amis (1984:94) observes that

Increasingly . . . we are seeing a capitalist rental market operating within unauthorized settlements. A number of effects of this can be identified . . . Clearly at one level tenants may move to cheaper accommodation . . . there is the suggestion of a 'bumping down' phenomenon . . . Here higher-income inhabitants are increasingly being forced to look for accommodation in previously low income areas. The second phenomenon may involve individuals who cannot afford to stay in the market reverting to subsistence shelter elsewhere . . . Whether this will remain a viable housing option is a crucial question for the future.

Significant changes have also taken place in informal settlements in so far as the production and trade of key building materials are concerned (Ward and Macoloo, 1992).⁸⁸

This phenomenon, as Hardoy and Satterthwaite (1993) affirm, is maybe not unexpected since, historically, landlords have profited from renting accommodations in cities.⁸⁹ Informal

⁸⁵See, for example, Burgess (1978), Crooke (1983), Edwards (1982; 1990), Gilbert (1983; 1987; 1993b), Gilbert and Varley (1991), Hardoy and Satterthwaite (1989), Kumar, (1992), Payne, 1989; Schlyter (1990) and UNCHS (1990; 1993).

⁸⁶Korboe and Tipple (1993), on the basis of empirical studies in Kumasi, Ghana, similarly challenge the adequacy of generalizations current to the liberal orthodoxy pioneered by Turner.

⁸⁷Like other settlements, informal settlements have dynamic economic and social systems which result in their original purpose and structure altering as they become assimilated in the larger systems of the urban areas (Haywood, 1986).

⁸⁸The petty commodity mode of one of the two most important elements in the housing production process—building materials (the other being land) has been penetrated and transformed by the dominant capitalist mode (Ward and Macoloo, 1992).

settlements are ideal for landlords interested in developing rental housing for several reasons, but the lack of enforcement of legislation to provide infrastructure and amenities and limit densities is perhaps the most important. Landlords are still able to make a profit despite the low rents paid by poor households. Moreover, tenants have no legal protection from landlords who may wish to evict them for whatever reason.

3.8.3 Main Characteristics of Informal Settlements in Kenya

Informal settlements have become a consistent feature of the urban landscape in Kenya's major urban centres. Typical characteristics of informal settlements include the following (Amis, 1984; 1988; MDC, 1993; 1994; Memon, 1982).

- Densities of both population and residential structures are frequently very high.⁹⁰ However, settlements can vary considerably in their physical layout and density of housing units, ranging from neighbourhoods with a methodical layout and a moderate concentration of dwellings, to areas with an indiscriminate configuration and extremely high densities.
- Construction, for the most part, is subcontracted and involves a division of labour.
- Housing construction is characterized by economy of construction.
- Structures (housing units) are constructed predominantly of what are officially deemed to be "temporary" or semi-permanent materials and do not conform to existent minimum standards.
- In almost all cases, physical planning, building and infrastructure standards have been widely infringed.
- The majority of owners have some form of quasi-legal tenure through temporary occupation licences or letters from chiefs on public land, or agreements with landowners on private land—there is very limited true 'squatting'. In some settlements, however, inhabitants have no rights at all.
- Environmental infrastructure—water, sanitation, drainage and solid waste disposal—and other basic urban services and amenities are elementary, deficient or non-existent.
- Where water is provided, it is ordinarily to a limited number of standpipes or communal water points: more commonly, water is purchased from water kiosks or vendors at up to 4-5 times the price paid to local authorities by consumers in other areas.
- Sanitation is inadequate: where communal water borne sanitation has been installed, it is almost inevitably non-operational, while in cases where non-water borne sanitation (usually pit latrines) have been provided, it is commonly incommensurate with the number of users.

⁸⁹ Juppenlatz (1970:161 citing George, 1966:87) notes that even as early as the latter part of the sixteenth century, "the speculator builder and investor in house property added their share to the chaotic development of London; they sprang into existence with the beginning of the rapid increase of population in the later sixteenth century."

⁹⁰ Settlements in Nairobi, for example, have an average density of 250 dwelling units and 750 persons per hectare, compared with 10-30 dwelling units and 50-180 persons per hectare for upper middle income areas (MDC, 1994). Some parts of Mathare Valley have an astounding 1,600 persons per hectare (Shelter Forum, 1992).

- Solid waste management is acutely deficient, and refuse regularly accumulates in insanitary and environmentally hazardous heaps, often blocking open drainage channels.
- Morbidity rates, especially among infants who are among the most vulnerable group, are significantly higher than in more affluent neighbourhoods. This is primarily due to diseases precipitated by the poor environmental conditions resulting from inadequate water supplies, deficient sanitation, inadequate solid waste management, poor drainage, and overcrowding at both the settlement and dwelling level.
- The majority of households have low or very low incomes and no assets.
- The greater number of income earning individuals are engaged in informal sector occupations, ranging from hawking to service and production enterprises. Manifold informal sector activities are located in informal settlements.⁹¹
- The majority of householders are tenants; the plurality of housing structures are let on a room-by-room basis, with most households occupying a single room or sharing a room.⁹²
- A great number of households have women heads.

A principal feature of housing structures in the plurality of informal settlements in Kenya is the economy of construction (Macoloo, 1994b). There is, however, a major differences in terms of housing quality between mud and wattle, timber, *mabati* on the one hand and masonry or concrete block on the other (Amis, 1996).

3.9 Studies and Analyses of Informal Settlements in Kenya

Much of the literature on urbanization and related planning issues in Kenya has focused primarily on "'inner city' spontaneous, uncontrolled low-income settlements" located within Nairobi (Memon, 1982:145). Peri-urban settlements located in the transitional zone between the city and the surrounding rural area and low-income neighbourhoods in other urban centres have been largely neglected. This bias is primarily due to the fact that informal settlements in Nairobi have evolved over a much longer time period, are far more conspicuous, and have more immediate health and political implications (Memon, 1982).

It is, of course, virtually impossible to know exactly how many informal settlements there are in Kenya's major urban centres and their respective and total populations. This is not only because of prevailing official attitudes towards the development of informal settlements, but also due to the spontaneity with which some of them have developed. However, while their number and extent is doubtlessly of import, the present thesis is concerned with their cardinal characteristics; whether it is possible to classify or typologize them; and if so, whether it will be of analytical and

⁹¹Of the approximately 400,000 small businesses in Nairobi, the vast majority are located in informal settlements. Informal settlements are thus an integral part of the economy of the city, but in terms of services place few demands on it.

⁹²In Nairobi, the vast majority of households (70% to 80% in most informal settlements) rent their dwellings and occupy a single room (Lamba, 1994).

operational relevance for policy discussion and improvement strategy formulation. A number of studies of informal settlements in Kenya's major urban centres have been conducted. Some of these have focused on either the socioeconomic characteristics, the physio-environmental characteristics or both; and others have also variously attempted to classify them.

In order to test certain assumptions and hypotheses about the nature of the urban community and improve the state of information on residential patterns in Mombasa, Stren (1972b) carried out a survey to explore the social differences between two very different approaches to the low cost housing of the indigenous population in the city. Tudor Housing Estate was in many respects a prototype for later rental estates, while the two *majengo* village layouts⁹³ were a forerunner to present-day site and services schemes. His findings cast doubts on the assumption that *majengos* were 'slums', and also challenged the view that low cost rental housing estates were not able to meet the stabilizing needs of a migrant working class population.

In another early study, Racki and others (1971) affirm the existence of various housing subsystems, which together represent a fair abstraction of the housing process. Some offer little more than minimum shelter; others afford a particular attribute, e.g., locational advantages; others are supportive, facilitating mobility or stability; etc. Each housing subsystem might comprise one or more user groups, with differing characteristics based on their circumstances and expectations. There is an important dynamic dimension to these user groups. Categories of user groups in a particular subsystem might remain relatively constant, but the users themselves move between categories, both between and within subsystems, as their circumstances and characteristics change. A number of characteristics serve as useful guidelines for identifying user groups and their patterns of change. One is the economic circumstances of the user group—their stability of employment and income. Another is housing location relative to sources of employment, measurable in terms of distance, cost or time. Other important factors are form of tenure, dwelling standards, and family cycle. Correlations between all the variables as they are present for each subsystem yield the user group categories. Since the user group categories are specific to different subsystems, this information assists projections for future demand. Models of the distribution of the population in the different subsystems can be constructed and the impact of different policies on this distribution estimated. Racki and his co-writers (1974) identify 7 subsystems in Nairobi (Table 3.4)

⁹³The concept of village layouts was a compromise between the short-term needs of poor house-owners and their tenants, and the long-term requirements of the authorities concerned with planning. A village layout is the sub-division of a single large plot into small, regularly shaped sub-plots, with space provided for footpaths between the houses, roads, and open ground. Semi-permanent Swahili type houses had to be built on these plots, with the provision that (i) they meet a minimum standard of construction set by the Municipality in its by-laws, and (ii) the house owner has no more than a yearly lease on his sub-plot. Land ownership is separated from house ownership (Stren, 1972b).

Table 3.4: Comparison of low-income housing subsystems by general characteristics

	LOCATION	TENURE	INCOME	STANDARDS
SQUATTERS	Centre city Inner ring Periphery	Rent/Own	Very low	Low
NEW TENEMENTS	Inner ring	Rent	Low	Low/Medium
OLD TENEMENTS	Centre city Inner ring	Rent	Medium/High	Medium High
POPULAR OWNERSHIP	Periphery	Own	Very low Low Medium/High	Low Low/Medium Medium
PUBLIC COMPONENTS	Inner ring Periphery	Rent	Very low Low Medium	Medium
PUBLIC PACKAGES	Inner ring Periphery	Rent/Own	Low Medium/High	Medium High
EMPLOYER PROVIDED HOUSING	Inner ring Periphery	Rent	Low	High

Source: After Racki *et al.* (1974)

The development of a substantial private low-income housing sector in Nairobi and Mombasa, according to Morrison (1974), is the result of the failure of diverse planning strategies to satisfy the housing demand created by rapid urban growth. He further asserts that analysis of their performance provides a key to the solution of the prevailing housing crisis.

Morrison (1974) affirms that Mombasa's low-income housing market is dominated by privately constructed 'Swahili' housing which provides cheap, adaptable and easily-constructed housing, utilizing readily available indigenous building materials. The flexible design enables the builder to erect rapidly rudimentary, but habitable shelter which can subsequently be completed progressively to a high standard as time and resources allow. In Nairobi, the simplest forms of shelter are covered beds and plastic tents found in squatter settlements, which have long been the target of eradication campaigns. In settlements where the threat of demolition is lower, cardboard dwellings have commonly been erected by affixing cardboard boxes to a frame of wooden poles. Mud and wattle structures are, however, the prevalent form, with dwellings built of these materials typically found in peripheral settlements. The design is commonly a simplified adaptation of the traditional Swahili house, but rarely as durable. Morrison (1974) notes the increasing in popularity of timber housing units as speculative built rental accommodation. The plan is simple with rooms arranged back to back, and finishing is minimal with external timber walls, corrugated iron roof and concrete floor left bare. He also observes that diverse designs utilizing stone, concrete block and corrugated iron have been attempted, and locally manufactured prefab timber panel systems have also been experimented with.

In a study of housing activity in Village 1 in Mathare Valley,⁹⁴ Chana and Morrison (1973) identify two basic housing systems or classifications of housing activity: 'squatter housing' and 'company housing'. Although the housing in both subsystems is illegal under prevailing by-laws and regulations, companies hold rights to the plots they occupy while squatters do not. Within both the squatter and company housing three distinct subsystems are distinguished in terms of the key actors in the housing process, their activities, and developments that occur over time. Thus, within the basic squatter housing system there is owner squatter housing, tenant-squatter housing and absentee owner-squatters. Similarly, within the company housing system, internally dominated company housing, externally dominated company housing, and mud-and-wattle company housing are identified.⁹⁵

In a study of Nairobi's 'self-help city', Hake (1977) differentiates two 'urban revolutions'. The first—the development of the modern city—is the product of the growth of the 'modern' sector of urban society (i.e., industry, government services, educational institutions, etc.). It expands in accordance with government action, investors' confidence, market prices and other forces. The self-help city, on the other hand, grows as a result of diverse pressures: population increase and rising expectations, especially in relation to land saturation, rural opportunities, variations in employment prospects, income differentials, social dislocation and, in particular, the vagaries of official housing policy. The 'self-help city' comprises several categories which overlap and interrelate in a constantly changing pattern. It includes housing in uncontrolled settlements, which Hake (1977:94) defines as "those built without official planning permission within the city [Nairobi] area".

Hake (1977) groups uncontrolled settlements in and around Nairobi into five categories, broadly distinguished by the policies adopted by the authorities towards them.⁹⁶ He argues that this criterion is the most useful basis for classification because official attitudes towards settlements is a major determining factor in their future development and existence. The first category includes temporary shelters which have been totally destroyed by the authorities without provision for resettlement. The second category consists of a settlement which was demolished by the authorities who later accepted some responsibility for resettling the inhabitants within the city. The third category—the so-called 'slum-clearance'—comprises settlements which have had

⁹⁴Chana and Morrison (1973) studied the activity found in Village 1, the oldest and largest of the 10 settlements that made up Mathare Valley, from its inception in 1939 to the early 1970s. The housing activities found within the village were generally representative of low-income areas in Nairobi. The characteristics of four key years (1954, 1969, 1970 and 1972) were plotted, and Chana and Morrison (1973) distinguish the geographic itineraries and economic mobility patterns (or trajectories) of the users in each subsystem.

⁹⁵The significant difference between the internally dominated and externally dominated company housing is that the leaders of the former are drawn from the owner-squatter and tenant-squatter subsystems and generally lack the education and organizational ability and financial resources required to operate a complex and potentially lucrative speculative real estate venture (Chana and Morrison, 1973).

⁹⁶Hake (1977) acknowledges that the classification is arbitrary, and that others could be adopted, distinguishing, for example, by tenure and squatting, by systems of social or political organization within the settlements, by differences of material construction, or by Turner's distinction between deteriorating and progressive areas.

long recognition and consist of self-built houses, but are only in a limited sense 'uncontrolled'. Also included in this category are settlements which grew in a number of uncontrolled ways. The fourth category constitutes settlements which, after some years of official harassment, have been officially recognized and been allocated resources for improvement. The fifth category comprises settlements, in the rural fringe area, in which land-owners have built rental accommodation on their property, without planning permission and in contravention of building regulations. Initially ignored by the authorities, official attitudes towards such settlements have gradually changed.

Kayongo-Male (1980) discusses community development as an improvement strategy in informal settlements. She asserts that much is known about communities and their processes of change and development; but the large issue is how this knowledge is used to influence action and guide research. Her objective is thus to summarize what is known about informal settlements and the processes of community development in Kenya, and what action guidelines may evolve from the available knowledge. In this respect, she asserts that most informal settlements face similar difficulties, although the severity may differ. The basic problems are: (i) inadequate resources to develop the community and the failure to utilize available resources; (ii) basic institutions or facilities (e.g., chambers of commerce, health and educational facilities, etc.) are less common than in more established communities; (iii) the inability to influence governmental decisions, especially about resource allocation; and (iv) the needs of security from human and non-human threats and relative stability of population. Consequently, the rationale for community development may be developed in terms of four needs: self-help, self-determination, security and stability. Kayongo-Male also distinguishes various characteristics of communities and of the approach of community development itself which may constrain its potential. Paramount are internal socioeconomic status divisions: most informal settlements comprise large proportions of the poorest stratum of urban society. Of great import also is the predominance of complex land ownership patterns in some settlements, which means diverse parties will have to agree with the improvement strategy.

In another study, Kayongo-Male (1988:135) asserts that there is a connection between colonial racial segregation and "the persistent problem of slum development, whether in squatter areas, *majengo* villages, or in local authority housing", and characterizes the three. The first two types are, however, unplanned while the third represents the planned sector of the low-income housing. Housing structures in squatter settlements, as affirmed by Kayongo-Male (1988), are frequently diverse in style in quality. Some squatter units are detached dwellings built of cardboard, plastic sheeting or flattened tins in the case of the poorest urbanites, or timber for the longer-established and better-off residents. Other housing structure imitate traditional styles, but tenements (built of timber with iron sheet roofing) are more in the style of barracks with up to 20 rooms arranged back-to-back in a single structure and occupied by single households. Housing in settlements

tends to improve in terms of building materials over time, but not in terms of habitable area due to constraints of space within the settlement. Squatter settlements can also be distinguished in terms of residential mobility. There also tends to be more community involvement than in either *majengos* or low-income public housing.

Majengos can be found in most major urban centres, and typically have high population densities. Kayongo-Male (1988) affirms that the population in *majengos* is predominantly Muslim which coupled with the lingua franca—kiswahili—make the communities more cohesive than other low-income residential areas in the sense of feelings of belonging and solidarity. The long-resident landlords are wealthier than the tenants and are able to live fairly well solely off their rental income. Housing in *majengos* may be planned in accordance with local council regulations or unplanned. Many *majengos* in Mombasa have developed around the village layout system, involving the subdivision of a large plot into small, regularly shaped plots, with space provided between houses for footpaths, roads and open ground. The village layout required that the structures meet legal requirements and offered landlords a yearly lease. Houses are rectangular in shape with an average of six to ten rooms, each occupied by a single household, arranged around a central corridor—the major feature of the swahili house. Building materials vary: walls may be built of mud and wattle, blockwork or brickwork, or coral stone at the coast.

That conditions and characteristics vary from one informal area to another is also affirmed by Kinuthia (1993). She cites examples of differences in density, size and construction of dwelling structures as well as tenure, arising from diverse factors, including the history and evolution of settlements, location, ethnic composition and tenure. However, she (Kinuthia, 1993:250) also claims that the following characteristics are common to all informal settlements:

low socio-economic status, poverty, overcrowding, lack of privacy, sharing of common facilities, poor sanitary and environmental health conditions, poor transport networks and deficient basic services. The social problems experienced in informal settlements include child labour, delinquency, and alcoholism. Hence the school dropout rate in informal settlements is high owing to their requirements to earn an income. Most of the street children and youth gangs are drawn from the informal settlements and are involved in deviant and illegal activities.

Kinuthia (1993:251) expounds that informal settlements are typically "the bastions of extreme deprivation", and that indecent shelter, overcrowding, insanitary conditions, crime and illegal activities create a situation of low life expectancy level, misery and hopelessness. But, she adds: "living in poor housing conditions should never in itself be taken as an indicator of absolute poverty"! (Kinuthia, 1993:251, exclamation mark mine).

A study of environmental health in Nairobi's poverty areas by Lamba (1994) affirms that their populations are growing at a faster rate than the population in the rest of the city, primarily because they are home to new migrants from rural areas. He also affirms that there is no typical

informal settlement. Each develops its own social, economic, ethnic and political characteristics: "They have as many differences as similarities and are as heterogeneous as the rest of the city" (Lamba, 1994:168).

The physio-environmental conditions in informal settlements characterized by Lamba (1994) include being frequently located on unsafe land, especially on flood plains, steep slopes or near hazardous or noxious industrial activities. Other typical characteristics include inadequate water supplies, insanitary conditions, deficient sewerage and solid waste disposal, poor drainage, substandard dwellings and overcrowding. Housing structures are typically built in rows with only narrow paths between them. Walls may be built of any of the following materials: cardboard, plastic sheets, flattened tins, mud and wattle, timber—whatever is available and affordable; corrugated iron sheets are the predominant roofing material. In terms of socioeconomic characteristics, the overwhelming majority of households are tenants living in one-room dwellings (80% to 90% in most settlements): rooms of 3 x3 metres to 3.7 x3.7 metres accommodate households comprising, on average, 3 to 5 persons.

Other recent studies have looked at the socioeconomic and physio-environmental characteristics of informal settlements in Nairobi and the largest towns. In an overview of the existing low-income housing situation in Nairobi, Nduati (1989) characterizes twenty five informal settlements. While he does not classify settlement types on the basis of common characteristics, he highlights the predominant physical, social and economic characteristics of the various settlements.⁹⁷

Magutu (1987) distinguishes four categories of informal settlements in urban Kenya. The first category are the settlements on agricultural land that become incorporated within urban jurisdictional boundaries because of high population densities and the nature of activity patterns that are influenced by the contiguous urban area. The problem posed by such settlements is that of legality and control, especially with respect to upgrading. The second category, and most proliferous, are the semi-permanent settlements that have been in existence for so long that tenure has been assumed for the land inhabited. The third category comprises dwellings erected illegally in the interstices of formal housing or extensions to existing conventional structures. The last category consists of temporary dwellings, built mainly using cardboard and plastic sheets, whereby the inhabitants have neither any assumption of tenure nor a reliable economic base for their stabilization.

⁹⁷ Nduati (1989) erroneously asserts that the settlements follow a particular pattern of growth, but correctly notes that many of the settlements were originally rural villages which were incorporated within the city limits following boundary expansion.

Table 3.5: Processes of land allocation and property rights in Nairobi's informal housing submarkets

SUBMARKET	MAIN PROCESSES OF ACCESSING LAND	FREEDOM FROM REPOSSESSION	FREEDOM TO SELL	FREEDOM TO INVEST	FORMAL COLLATERAL VALUE
State administered	Administrative allocation	No	Yes	Temporary investments only	None
Land company	Buying shares in land companies	Yes	Yes	Temporary and permanent investments	None if sub-division is not registered
Former rural shamba	Inheritance/Buying in the formal land market	Yes	Yes	Temporary and permanent investments	Yes

Source: After Gatabaki-Kamau, 1995.

In their study of Korogocho, Nairobi, Moughtin and others (1992) identify three main groups, each with its own particular problems: (a) resident landlords; (b) owner occupiers; and (c) tenants, who constitute the majority of the resident population. Paradoxically, the owner-occupiers, who are the minority group in the settlement, are the least satisfied with their residential circumstances. Moreover, housing for rent, though still well below acceptable formal standards, appears to be of a higher quality than the self-built shelters of the very poor.

The inventory compiled by Matrix Development Consultants (1993) aims to provide accurate information on the location and characteristics of informal settlements in Nairobi. It is intended to be utilized as a basis for the formulation of policies and strategies for the city in general, and informal settlements in particular. The settlements are grouped according to the administrative divisions within the city. For each division the inventory provides the following information: location and housing; population; housing conditions; infrastructure, economic activities, and social facilities and community organizations.

A study of the role of informal settlements in the provision of housing in Kenya by Malombe (1993) focuses on the socioeconomic characteristics of owner and tenant households in informal settlements in Nakuru. Another study of the development of informal housing in Kenya by Syagga and Malombe (1995) examines the socioeconomic characteristics of owners and tenants in informal settlements in Kisumu and Nakuru, and also the characteristics of the main suppliers of building materials used in the construction of housing in the settlements.

Gatabaki-Kamau (1995) asserts that three major informal housing "submarkets" have emerged and expanded in Nairobi since independence: "state administered", the "former rural-smallholder" and the "land company" submarkets. The three are distinguishable by the main process through which land has been accessed and the nature of property rights enjoyed by the house owners (Table 3.5). In the "state administered" submarket the land is government-owned, but house owners have *de facto* rights to their property, as the land has been allocated by the

local administration. Such housing is thus informal in that its development has not been officially approved, but it enjoys adequate political protection.⁹⁸ In the "former rural-smallholder" submarket, house owners have either *de jure* rights over their property or permission to build from the legal owner of the land in the form of land-tenancy.⁹⁹ In the "land company" submarket, land purchasing companies and co-operatives are formed to acquire tracts of land which would otherwise be unaffordable to individuals.¹⁰⁰ Within this submarket, the owners of the houses have *de jure* rights over their property, albeit irregular. While some companies/co-operatives may carry out subdivisions of land they acquire legally, many do not follow the laid down legal process. However, the informal land market serves various mutually reinforcing purposes.

The most comprehensive attempt at classificatory analysis of informal settlements in Kenya arguably remains that by David Etherton (1971) (Table 3.6). In his study, *Mathare Valley: A Case-study of Uncontrolled Settlement in Nairobi*, in which he compared squatter villages and company housing in Nairobi's largest informal settlement,¹⁰¹ he distinguishes four settlement types, each of which has developed independently of the authorities concerned with the control of building and planning, are categorized: (i) semi-permanent rural; (ii) semi-permanent urban; (iii) temporary urban; and (iv) temporary and semi-permanent infill. The four are based on alternative types of tenure; population density, layout and construction; location; public utilities; employment and commercial activity; and cultivation. He (Etherton, 1971:93) also distinguishes 'deteriorating' and 'progressive' areas:

The physical and legal characteristics and the location of these housing areas usually indicates the way in which they are likely to develop. 'Progressive' settlements show a gradual improvement from the most rudimentary shelter, which stakes the squatter's claim to a piece of land, through stages which can be financed as the owner's place in society becomes more secure, until finally he achieves a more permanent house. At the other end of the scale is the kind of disorderly and overcrowded settlement which shows signs of deterioration. This often occurs in central areas on potentially valuable land, and the inhabitants are more likely to be tenants than owners.

In each case, the nature of physical development is dependent upon the degree of security of tenure, legal or assumed. A further differentiation is made between uncontrolled rural and urban areas in the city to underline the variance between traditional rural settlements which became

⁹⁸ See Amis (1984; 1988) for an explanation of the allocation of informal building rights.

⁹⁹ This submarket is located in Dagoretti which was incorporated into the city boundaries in 1963. Prior to that it was rural land held under freehold tenure. Dagoretti's new urban status was accompanied by substitution of small-holder agriculture with unauthorized housing which was, at first, subject to sporadic demolitions because it contravened building and planning regulations. However, after 1974 such demolitions were successfully frustrated through landlord political organization, subsequent influence over election outcomes and effective interest representation at constituency level (Gatabaki-Kamau, 1995).

¹⁰⁰ Land buying companies/co-operatives were first formed after Independence in order to buy off former colonial settlers.

¹⁰¹ As noted by Hake (1977), the detailed study of the companies, their organization, financing, their building operations and the services that they did or did not provide, gives a fascinating insight into the relationship between capitalist enterprise, local government administrative control, and popular demand for housing in the development situation in Kenya.

Table 3.6: Characteristics of Uncontrolled Settlement in Nairobi

	SEMI-PERMANENT RURAL	SEMI-PERMANENT URBAN	TEMPORARY URBAN	TEMPORARY AND SEMI-PERMANENT INFILL
ALTERNATIVE TYPES OF TENURE	Registered squatters eligible for resettlement plot Unregistered squatters Traditional tenant status	Registered and unregistered squatters on private and publicly owned land Illegal development by legal owner; growing number of land-buying and house-building co-operatives and Companies offering plots to share-holders, and rented rooms to non-member tenants	Illegal development on public and private land Unregistered squatters	Illegal development on public and private land either by squatters or by plot owners
POPULATION DENSITY LAYOUT AND CONSTRUCTION	Less than 370 p/ha* Traditional layout of buildings and 'shambas' Mainly traditional mud and wattle circular huts with thatched roofs	Mote than 370 p/ha* Informal village layout Mainly rectangular plan; mud and wattle with some scrap materials, corrugated iron roofs	More than 370 p/ha* Disorderly layout Entirely scrap materials	More than 370 p/ha* Scrap materials Rectangular plan; weather boarding with scrap and corrugated iron roofs
LOCATION	Former 'scheduled' areas Former 'reserves' Peripheral areas of Nairobi (outside 4.8 km radius from city centre)	Peripheral areas of Nairobi (outside 2.4 km radius from city centre) Extension of 'emergency villages' in former 'reserves'	Central city areas (within 4.8 km radius) Along river valleys	Attached to or within the courtyards of existing housing in specific areas of Nairobi (mainly within 4.8 km radius)
PUBLIC UTILITIES	Water from nearest springs, wells, permanent buildings (inadequate) Pit latrine (adequate) Refuse burned or used as compost (adequate)	Water obtained from nearest source Some areas have established mains connection (inadequate) Pit latrines (inadequate)	No facilities	Facilities of the surrounding area
EMPLOYMENT AND COMMERCIAL ACTIVITY	Subsistence farming Local markets Few established shops within housing area	Some wage employment outside the area Much self-employment within the area Large number and variety of shops and service commerce within the area (e.g., cafes, bars, laundry, cobblers, hairdressers, etc.)	Casual employment Self-employment Wage employment A few make-shift shops within these areas	Wage, casual and self-employment Shops in surrounding area
CULTIVATION	Plots associated with each dwelling ('shambas')	None associated with individual houses Occasional communally farmed area nearby	None	None

* p/ha = persons per hectare

Source: After Etherton (1971)

situate within the limits of the city following boundary revisions, and more recently established informal settlements with resident populations committed to an urban life-style.

3.10 A Proposal for Classification of Informal Settlements in Kenya

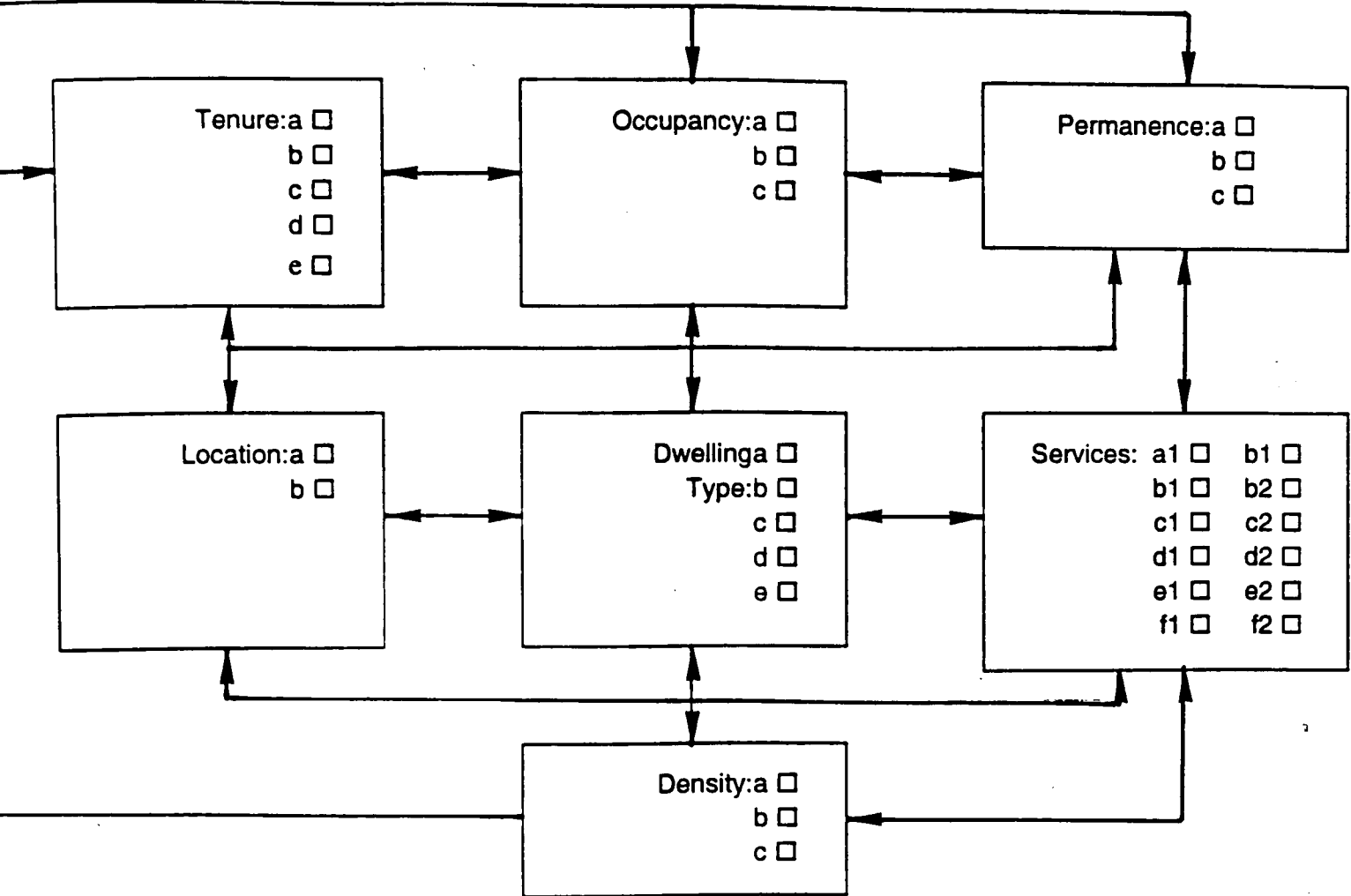
Typologies (paradigms) of urban low-income settlements have been explored by a number of analysts on the assumption that there might be a relationship between them and improvement strategies. Stephen Yeh's (1987) analysis of several well-known typologies, including some of those reviewed earlier in this chapter, concludes that there is generally no correspondence between typologies of low-income settlements and improvement strategies. However, comparative and developmental typologies may be of utility as important sensitizing concepts in the early stages of policy-oriented analytical inquiry, preferably as part of a more in-depth study of the variables and the structural relationships. In this respect, certain settlement characteristics may indeed have operational relevance for settlement upgrading, but programmes cannot be implemented by following a rigidly standardized procedure. They should be designed to fit the characteristics of particular situations and to address the needs and priorities of residents in the settlement as there can be substantial variations in many respects between settlements. In making generalizations, this variability should be taken into account as much as possible.

3.10.1 Key Characteristics Determining the Classification of Informal Settlements

The present thesis holds that a methodological classificatory analysis of urban low-income informal settlements is indeed of operational relevance to effective strategy formulation for upgrading interventions in Kenya. The optimality of upgrading interventions should, of necessity, be determined by settlement characteristics; and due consideration should likewise be given to the functions of the dwelling and housing attributes discussed above which the settlement provides. A classification of settlements based on particular characteristics of informal settlements is thus propounded below.

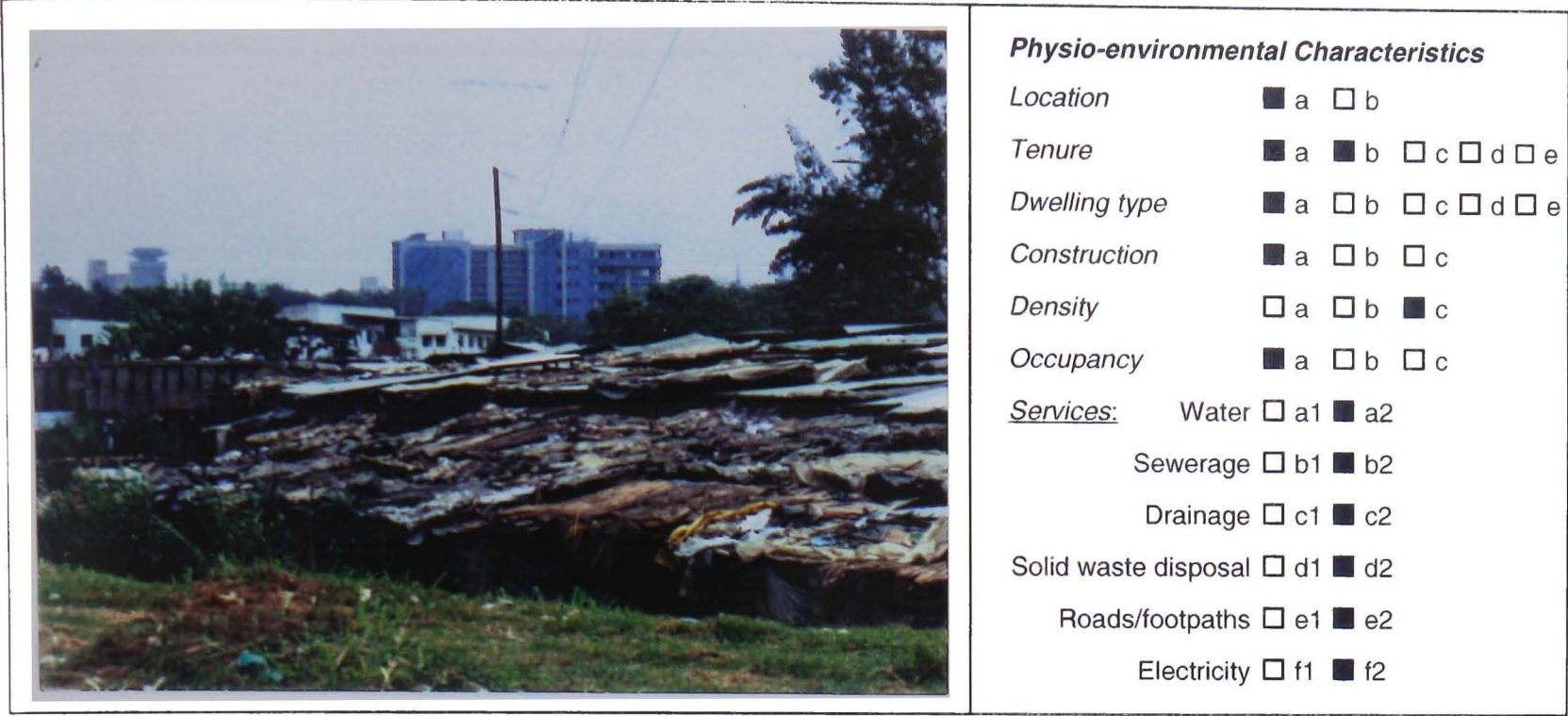
The characteristics considered to be especially pertinent to upgrading interventions are: (i) location (of the settlement); (ii) tenure (of the land on which the settlement is located); (iii) density (of housing structures within settlements); (iv) dwelling type (predominant type of housing units); (v) permanence (of the housing structures) and (vi) occupancy (tenure group and household composition). The interrelationship between these characteristics is shown in **Figure 3.5**. The combination of these characteristics generates the settlement types defined in Figures 3.6a to 3.11a.

re 3.5: Interrelationship between key settlement characteristics



- Location:
- ☐ a 'inner-city'/interstitial
 - ☐ b peripheral
- Tenure:
- ☐ a No rights on public land
 - ☐ b No rights on private land
 - ☐ c Quasi-legal right of occupation on public land (e.g. temporary occupation licences/certificates)
 - ☐ d Quasi-legal right of occupation on private land
 - ☐ e Privately owned by individual(s)/co-operatives/companies
- Dwelling type:
- ☐ a 'Tents'/shacks
 - ☐ b Traditional domestic
 - ☐ c Traditional rental
 - ☐ d Swahili/courtyard
 - ☐ e Tenement
- Occupancy:
- ☐ a (Mostly) Owner-occupiers
 - ☐ b (Large proportion of) Resident landlords
 - ☐ c (Predominantly) Tenants
- Construction:
- ☐ a Temporary
 - ☐ b Semi-permanent
 - ☐ c Permanent
- Density:
- ☐ a Low (less than 100 dwellings/rooms per hectare)
 - ☐ b Medium (100-200 dwellings/rooms per hectare)
 - ☐ c High (Over 200 dwellings/rooms per hectare)
- Availability of services/
existing networks on site
- | | | |
|----------------------|--|--|
| Water | <input type="checkbox"/> a1: Available on site | <input type="checkbox"/> a2: Not available on site |
| Sewerage | <input type="checkbox"/> b1: Available on site | <input type="checkbox"/> b2: Not available on site |
| Drainage | <input type="checkbox"/> c1: Available on site | <input type="checkbox"/> c2: Not available on site |
| Solid waste disposal | <input type="checkbox"/> d1: Available on site | <input type="checkbox"/> d2: Not available on site |
| Roads/footpaths | <input type="checkbox"/> e1: Available on site | <input type="checkbox"/> e2: Not available on site |
| Electricity | <input type="checkbox"/> f1: Available on site | <input type="checkbox"/> f2: Not available on site |

FIGURE 3.6a: TEMPORARY URBAN

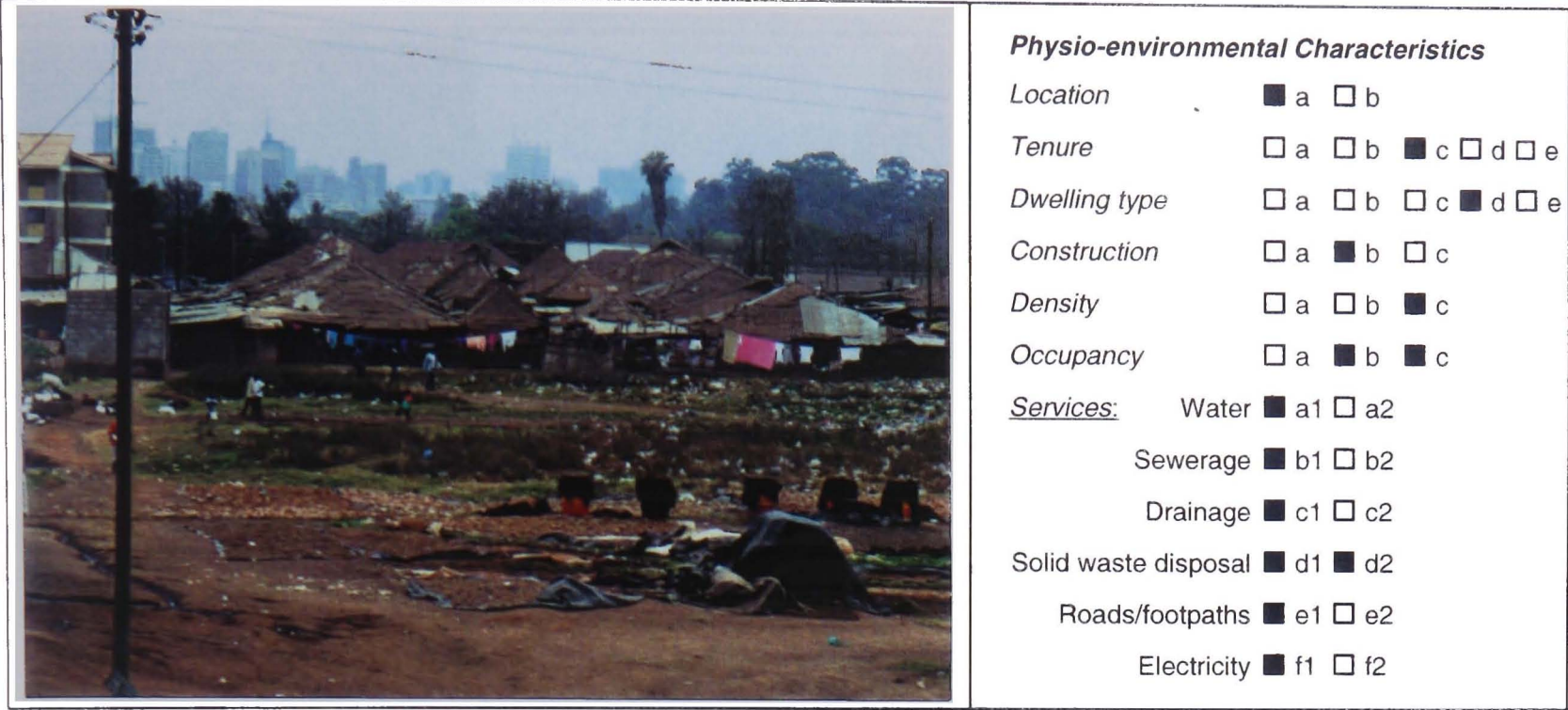


Description

Once a common feature along the banks of the Nairobi River which, as an undeveloped strip flowing through the centre of the city, provided an obvious opportunity for uncontrolled settlement. However, now only found in a few isolated sites—persistent demolition campaigns by the authorities have effectively limited the scale of this type of settlement. Can also be found in a limited number of locations in some of the larger urban centres. Inhabited by destitute households who have invaded public (and occasionally private) land illegally, and erected non-permanent shelters. Construction of the rudimentary dwellings, which are built for the most part by the inhabitants themselves for owner occupation, is typically of scavenged materials (e.g. polythene sheets, sacking, cardboard, old metals sheets, etc.) attached to an insubstantial frame. The number of dwellings in this type of settlement can vary considerably, but densities of strictures are, in most cases, extremely high. Environmental infrastructure is totally lacking. Access footpaths and roads are also non-existent.



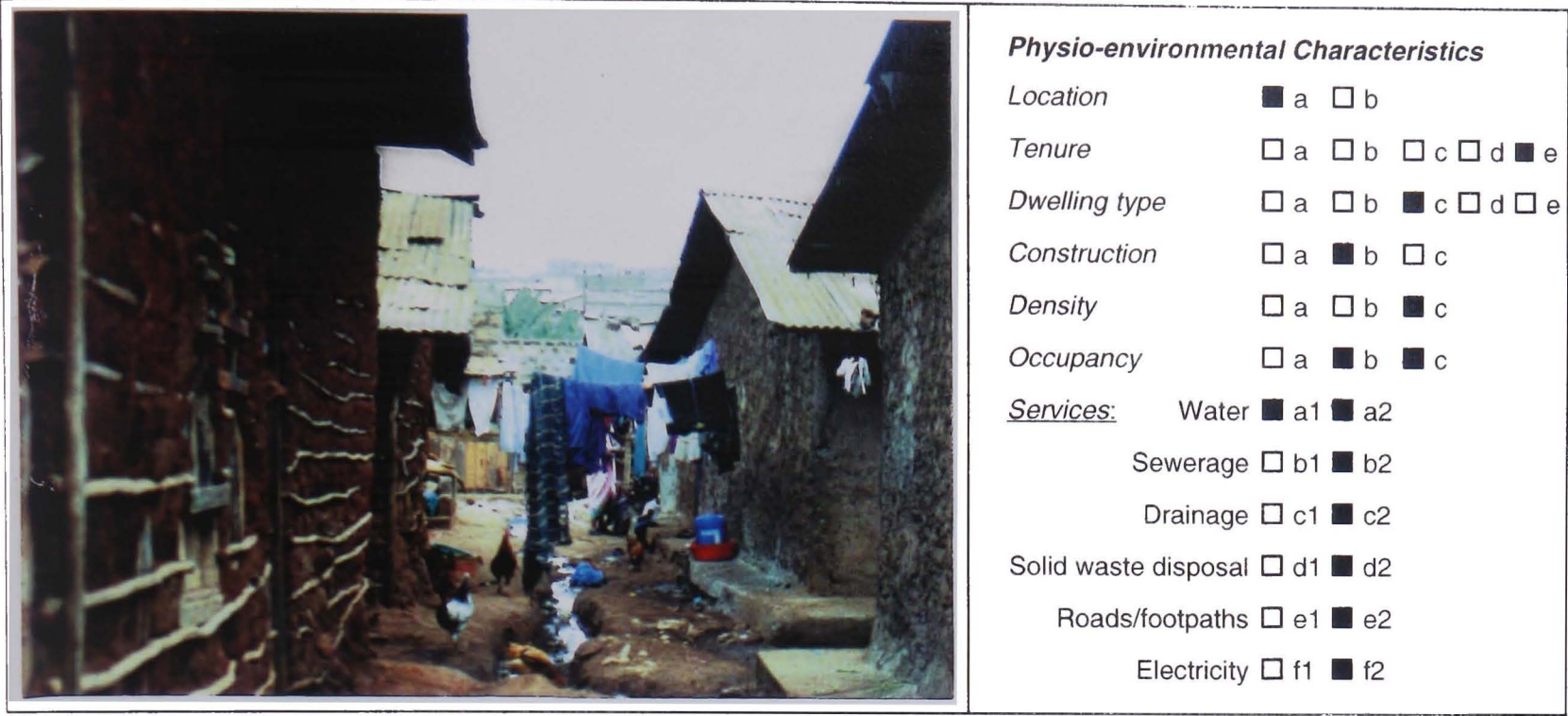
FIGURE 3.6b: MAJENGO



Description
Established by the colonial authorities as 'planned settlements' for the indigenous population in the larger urban centres, *majengos* are typically occupy central sites within the urban jurisdiction. A majority of owners enjoy quasi-legal right of occupation of public land in that they possess temporary occupation licences/certificates. A minority of owners have managed to acquire full legal ownership of their property, but the bureaucratic process is cumbersome and protracted. Communal water points and water borne sanitation was initially provided in some—first 'sites-and-services' schemes. Due to rampant, uncontrolled extension of original 'swahili' type houses, *majengos* have evolved typical characteristics of informal settlements, including very high densities of dwelling units. Rental of rooms in houses the norm, but high proportion of resident landlords. Structures, most of which are of semi-permanent mud-and-wattle construction, for the most part in poor state of repair owing to constant threat of demolition. Environmentally infrastructure is generally grossly inadequate. Roads provide vehicular access within most settlements, but pedestrian access has frequently been impeded by the uncontrolled extensions. Electricity is available on most sites, largely owing to the inner-urban location and evolution of the neighbourhoods.



FIGURE 3.6c: TRADITIONAL URBAN RENTAL

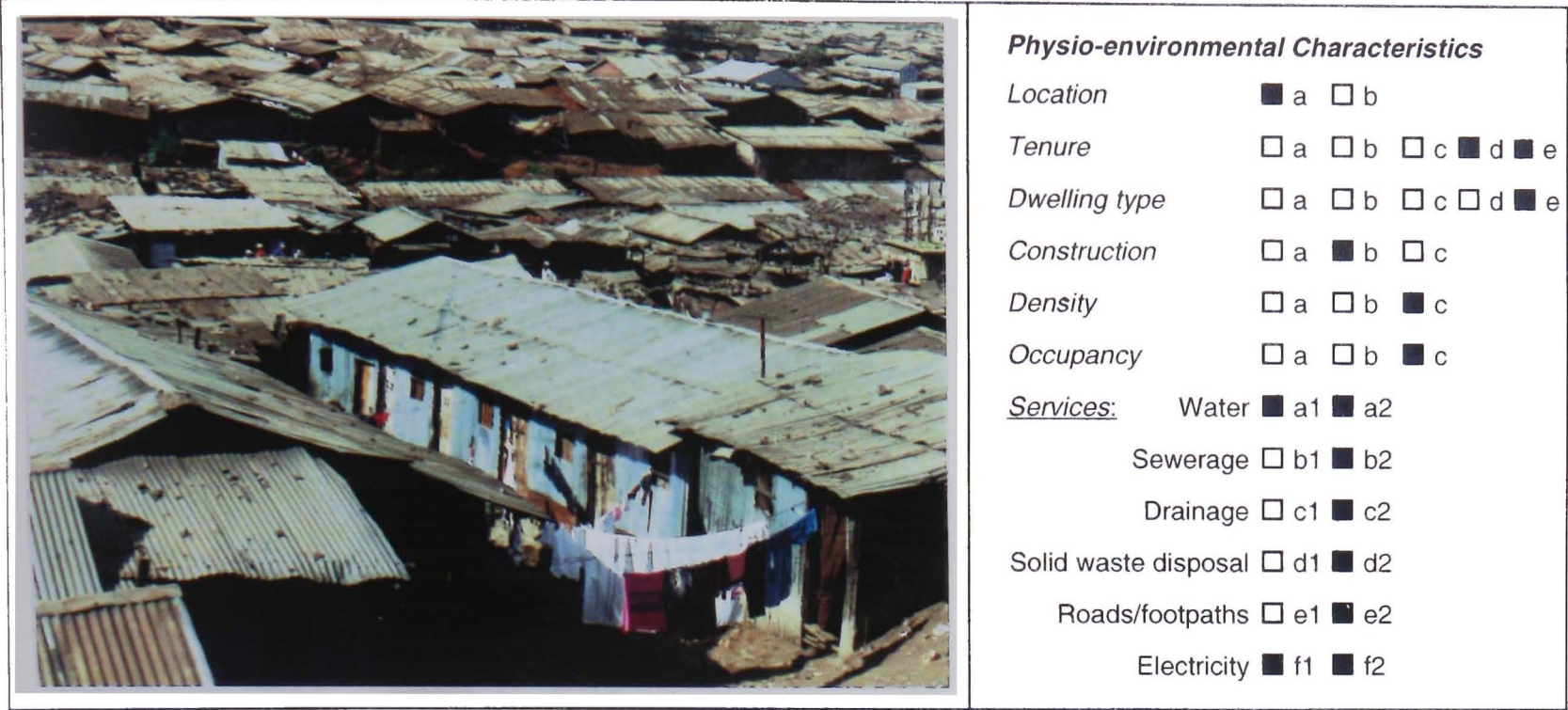


Description

The origins of the commercialization of housing in informal settlements in Kenya are to be found in this settlement type. Structures are mostly functionally cheap single blocks with mud-and-wattle walls and corrugated iron roofs, comprising rows of rooms with external access. Settlements have developed either on public land or private land, sometime with and sometimes without the permission of the landowner. The construction of housing structures, though semi-permanent by conventional standards, is of a type traditionally found acceptable in rural areas of Kenya. Densities of dwellings and people are high. Structures are commonly in poor state of repair owing to lack of maintenance. Environmental infrastructure is typically deficient—principally insufficient number of communal pit latrines; water is, in most cases obtained from kiosks. Roads, where they exist, are most earthen roads which are frequently impassable following heavy rains. Few residential structures have electricity.



FIGURE 3.6d: URBAN TENEMENT



Description
This type of settlement is rapidly expanding in many growing urban centres. Layout of residential structures is typically rectilinear.; densities of dwellings are very high, with households in most cases occupying a single room. Structures in more recently developed settlements are in a fairly good state of repair. Environmental infrastructure, where available on site, is grossly inadequate, largely due to the fact that the extremely high densities of structures leave little or no room for the construction of pit latrines.

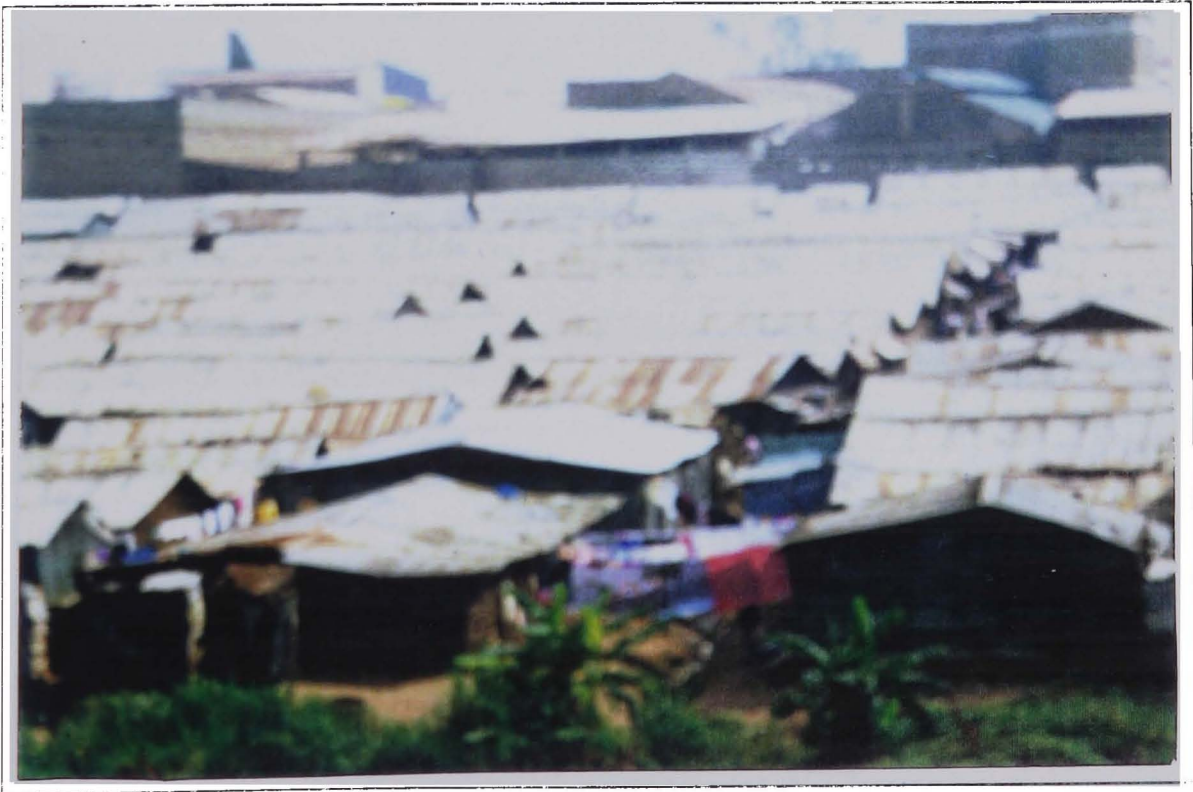
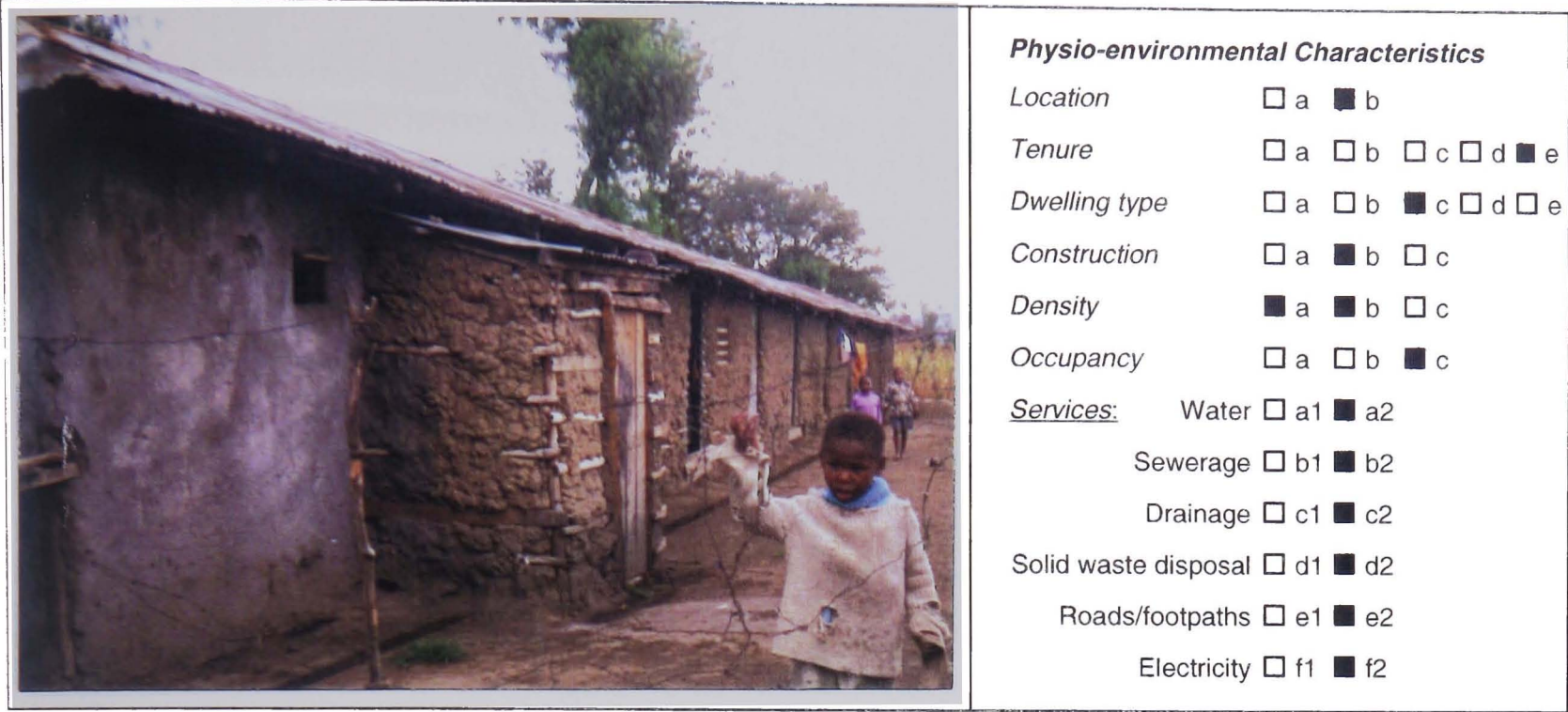


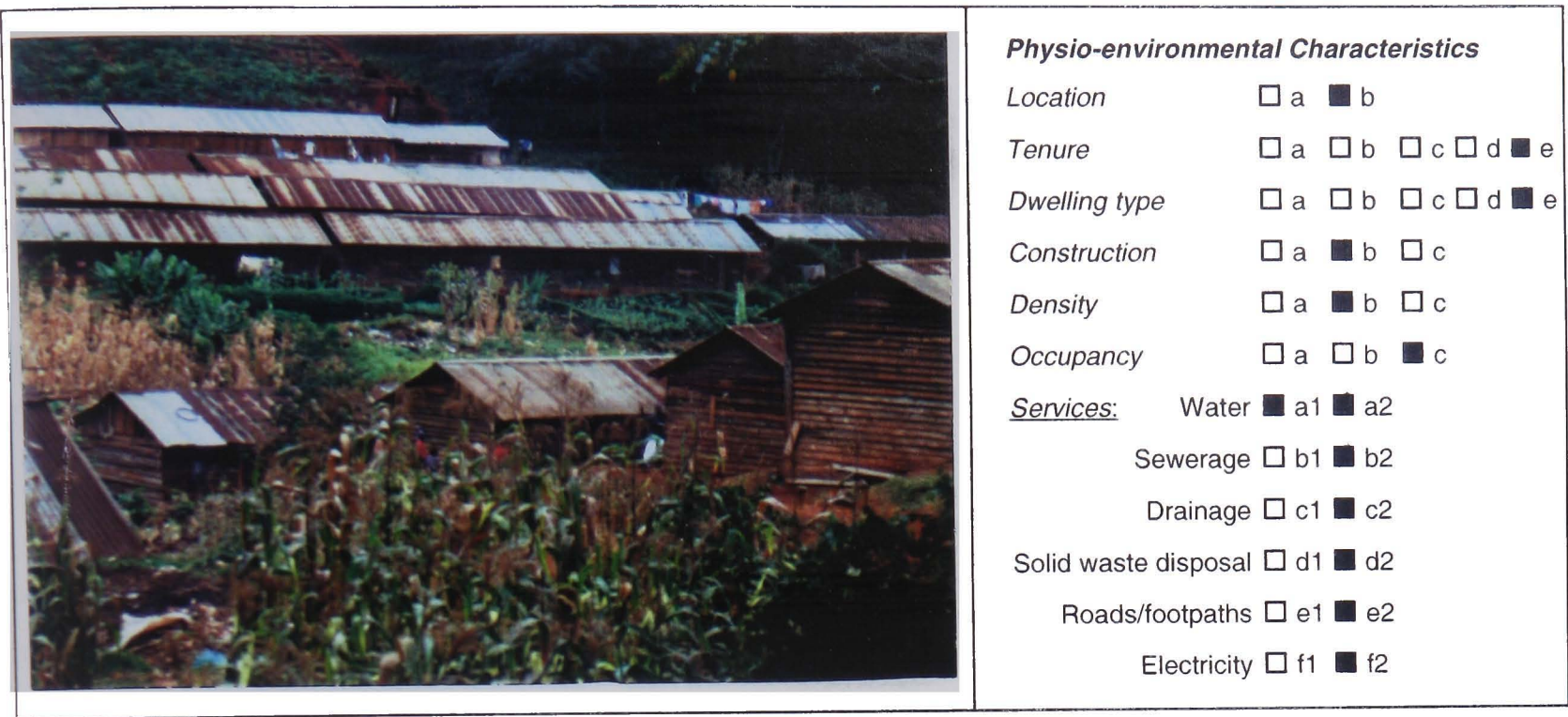
FIGURE 3.6e: PERI-URBAN TRADITIONAL RENTAL



Description
Most of these settlements have developed from per-urban traditional settlements which were originally rural but gained urban status following boundary expansion. This settlement type includes settlements that have developed on land in private ownership, as well as many farms purchased by co-operatives/companies. With relatively low densities of housing structures built using traditional materials and techniques, many still retain rustic character. Environmental infrastructure comprises communal pit latrines, and in some cases communal water points. But water frequently has to be purchased from outside the settlement or from commercial itinerant water vendors. There are no access roads as such within most settlements, and there is commonly no electricity



FIGURE 3.6f: PERI-URBAN TENEMENT



Description
This type of settlement is proliferating in most of the larger urban centres owing to the paucity of land in inner-urban locations. Many are being established on what were once farms on private land. Rental accommodation in this settlements type is fast becoming a predominant form of accommodation for urban low-income households. As most have been established fairly recently, physical condition of structures is relatively. Environmental infrastructure is, however, lacking in many cases—settlements are often not served by water supply and sewerage networks.



3.11 Summary

Urban low-income residential areas and the inadequate housing conditions that poor, disadvantaged and vulnerable urban dwellers who inhabit them have to contend with have long been the concern of various interested parties, among their number academics of different disciplines. Most of the early scholarly work was either based on experience in the North or propounded in the context of Latin America. And much of the academic endeavour has centred on urban low-income housing characteristics (including those of the residents), developmental typologies, taxonomic classifications and classificatory analyses as a means to understanding the development processes in operation, and generalization on improvement strategies.

A number of studies of urban low-income settlements in Kenya have also been undertaken and documented. But few, if indeed any, of the studies to date have paid any attention to the implications of settlement characteristics for improvement strategies, and more specifically for settlement upgrading. Thus a methodological proposal of classificatory analysis of informal settlements in Kenya based on characteristics and factors that may be of operational relevance to effective improvement strategy formulation, programme options and project design has been set forth in the last part of this chapter. Having done this, settlement upgrading, which has been presented as one of "the prime instruments for improving the housing conditions of the urban poor" (UNCHS, 1987a:179), will now be discussed in greater detail in the following chapter.

Chapter Four

SETTLEMENT UPGRADING: THE PRAGMATIC SOLUTION

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4.1 Introduction

The amelioration of the housing conditions of the low-income stratum of the urban population is by no means a recent concern. Indeed, with respect to the solution of the urban housing question in Europe in the 19th Century, Dr. Sax (1869:14, cited in Engels, 1991:414) asserted that:

by improving the housing of the working classes it would be possible successfully to remedy the material and spiritual misery . . . , and thereby--by a radical improvement of housing conditions *alone*--to raise the greater part of these classes out of the morass of their often hardly human conditions of existence . . . ¹

Although the ultimate motivation for improving the housing conditions of the working classes of the time may have differed somewhat from the objectives of present-day settlement upgrading,² a mutual concern in both cases is the improvement of the residential circumstances and environment of the urban poor.

This chapter reviews the evolution of settlement upgrading as policy in the South; it introduces the basic concepts, objectives and components of upgrading; and it highlights the special nature and advantages of upgrading. The chapter further presents issues and experience of upgrading in a number of countries in the South, using comparative evidence to reduce the danger of parochialism. Some of the arguments against upgrading are also mentioned. The chapter ends with a brief account of settlement upgrading in Kenya.

4.2 Evolution of Settlement Upgrading as Policy

The concept of settlement upgrading has become an important component of the housing strategy of a majority of governments in the South. With housing deficits so large, governments are increasingly ready to accept the argument that their primary task is to improve the prevailing shelter conditions of poor households that constitute the greater proportion of their urban populations. But it has not always been the intrinsic merits of upgrading that have resulted in its widespread adoption as policy (Angel, 1983b; Conroy, 1987; Skinner *et al.*, 1987a).³

¹ The expression 'working classes' includes all "'impecunious social classes', and in general, people in a small way, such as handicraftsmen . . . , as well as actual workers" (Engels, 1991:414).

² Commentators like Engels were concerned with urban environmental degradation less because of its aesthetic desolation than for the health risks it engendered among those it affected most. Contrarily, representing the perceived interests of the industrial bourgeoisie, governments in industrializing Europe ignored calls for reforms to reduce environmental health hazards. But the evident association between degraded residential conditions and health problems, both endemic and epidemic, prompted the formation of pressure groups which compelled government to take steps to improve public health: legislation for and implementation of hygiene regulations, publicly funded water and sewerage systems, housing standards, and paved streets (Main, 1994). As Macpherson (1979:67) affirms: "The incontrovertible fact is that the improvement in health which accompanied improvements in housing and sanitation in [Northern] countries occurred long before most of the effective treatments for disease which exist today had been discovered."

³ The political élite's reaction to the continuing existence of informal settlements is particularly crucial because the settlements are visible evidence of their incompetent administration of social problems and because the inhabitants continue to defy the legal system without punishment. The prestige and performance of those in power is tarnished by this situation. Their growing interest in upgrading has developed coincidentally with the historical failure of large-scale construction programmes on the one hand, and the high political costs of eradication policies on the other. They have recognized the value of supporting upgrading programmes as effective mechanisms for gaining popular support in low-income areas, and also appreciate that the per household (or vote) expenditure on upgrading infrastructure, compared with conventional approaches, is

As expounded in the preceding chapter, the accelerated urban growth rates of the 1960s precipitated the proliferation of informal settlements, illegal subdivisions and other such solutions to the provision of shelter at the lower end of the housing market. At that stage, there was no official or formal intervention apart from often extensive settlement clearance programmes with the, usually unrealized, intention of rehousing the inhabitants (Wakely, 1989). In the 1960s and early 1970s, governments in the South had accepted the impossibility of bridging the housing deficit or rehousing/resettling the rapidly increasing number of urban households living in informal settlements through conventional public housing policies.⁴ The latter had consistently failed to produce an adequate housing supply annually and at sufficiently low cost (Martin, 1983; Skinner *et al.*, 1987a). That 'self-help' housing was a rational response by the expanding low-income urban population came to be widely recognized (Moser, 1982). Indeed, one of the most experienced and distinguished authorities in the field, Professor Otto Koenigsberger (cited in Turner, 1983b:7) was to assert: "if government is to improve a low-income majority's housing conditions then it must not build houses."⁵

Studies of the mechanisms by which informal settlements developed and were managed introduced an appreciation of the resourcefulness and ability of the urban poor to produce (or procure) and manage their own shelter and basic infrastructure.⁶ They reinforced the importance of security of tenure as a precondition for investment in housing development. They also evidenced that few urban households actually constructed their own dwellings using family labour—cost effective solutions were realized through stringent control of the acquisition of building materials and punctilious supervision and management of the construction process.⁷ Moreover, they demonstrated that house construction was a lengthy, sometimes interminable,

relatively low (Angel, 1983b). See also Martin's (1987) account of the controversy and lobbying that led to the adoption of upgrading as policy in Lusaka.

⁴The underlying assumptions of public housing were that it would be affordable, effectual and ultimately eliminate insalubrious conditions and town planners' perceived disorder in informal settlements (Pugh, 1994a).

⁵Juppenlatz (1970:39) mentions that Professor Koenigsberger also propounded the thesis that, "where the moral and social philosophy of the established provides three needs for the in-migrants on a programmed basis, namely work, shelter and a welcome into the community, the in-migrants can become a blessing to the community as a whole, and not a liability."

⁶Pioneering studies and formative work that led to the appreciation of informal settlements as rational and viable alternatives to the housing deficit include those of Abrams (1964), Mangin (1967; 1970a) and Turner (1967; 1968; 1976). These writers who questioned the negative view of informal settlements provided the conceptual foundation which enabled individual examples to coalesce into an alternative housing strategy (Payne, 1984). A number of generalizations with relevance to upgrading based on the studies were advanced, including the following, which Laquian (1983:16) identifies as being amongst the most important:

- (i) Informal settlement dwellers have the resources, skills, and personal motivations to provide adequate shelter for themselves.
- (ii) When given security of tenure and resources, informal settlement dwellers can build their own houses and improve them as their life situation improves.
- (iii) Informal settlement dwellers develop their own market mechanisms and can provide themselves with building materials appropriate to their needs.
- (iv) Informal settlement dwellers are well organized and use mutual aid and self-help in building their own houses and community facilities.
- (v) There are valid reasons for the locations chosen by informal settlement dwellers and these usually dictate their choice of housing sites.

⁷See Footnote 8 below.

process of development that corresponded to the changing circumstances and demands of the owners and users (Wakely, 1989).

Concurrent with these observations was an increasing official awareness of the extent of environmental degradation in the burgeoning informal settlements. The role of housing in urban economic development was also beginning to be perceived differently and economic and political arguments for public investment in low-income housing were being refined. The relationship between environmental health and productivity was expostulated more accurately, and, with a better understanding of the informal sector as a major contributor to the urban economy, the importance of informal settlements as the location of commercial and manufacturing productivity became more evident. Increasingly it was observed that, given tenurial security, household savings and surpluses, however minimal, were invested in its development, and the development of recognized housing generated increased contributions to property taxes, a primary source of municipal revenue. In addition, domestic security was seen to promote political stability (Wakely, 1989).

Governments in the South thus adopted policies to upgrade informal settlements. Upgrading rather than redevelopment was a logical policy consequence of the view that informal settlements are mainstream and not marginal—a part of the new paradigm for housing development (Hamdi, 1991). The new approach involved a redistribution of roles among actors in the shelter production and improvement process (Table 4.1). Settlement upgrading depends on the "progressive development" model,⁸ which largely assumes security of tenure is sufficient

⁸ Keare and Parris (1982:v) define "progressive development" as "a method of housing construction or upgrading achieved through:

- (a) staged development in which the infrastructure and occasionally parts of the house are built by a contractor, and the rest of the shelter is completed by the household;
- (b) flexibility in housing design, construction time, and materials used; and
- (c) self-help components, which can be organized in the following ways:
 - (i) *mutual help*, in which families work together in groups, often with supervision from project management;
 - (ii) *self-help* construction in which the household hires a contractor to build the shelter;
 - (iii) *self-help* construction in which the household hires and supervises individual labourers;
 - (iv) *self-help* construction in which the household uses its own labour to build its house.

Hansen and Williams (1988) present an alternative model in which progressive housing development is characterized as a path of low-income households as they move through four different stages of housing development:

- Stage Zero: preownership;
- Stage One: initial settlement;
- Stage Two: self-motivated upgrading;
- Stage Three: external-shock-motivated upgrading.

This path, Hansen and Williams (1988) acknowledge, is highly stylized because, obviously, not all households move through these stages.

Empirical investigation has evidenced that only for the very poorest is the process of informal progressive development truly 'auto-construction' (Peattie, 1982:134). More typically, owner-occupants and their households will supply much of the unskilled labour, but contract out to neighbourhood masons, carpenters, roofers, plumbers, etc., the more technical parts of the work. Studies have also shown that many households, in fact, prefer to hire labour owing to the opportunity cost of using their own labour (Bamberger *et al*, 1982). In Zambia, a study of three upgrading projects revealed that 85-92% of households relied on hired labour for house construction and improvement. Most of the evidence collected by Shankland Cox (1977) likewise indicates that masons and other skilled craftsmen are employed to carry out the work in 'self-build' projects. The manner of their employment is radically different from that of medium- and large-scale contractors with residents acting as supervisors, and the household as labourers. All this results in the work being highly productive and cost effective. The operatives are often relatives or friends who work at weekends for meals or for nothing. On the other hand, in Malaysia, the government has preferred a more formal

incentive to motivate householders to improve their properties over time as resources permit (Conroy, 1987; UNCHS, 1984b). Cheema (1986:7-8) distinguishes five stages in the evolution of explicit and implicit upgrading policies:

- (i) clearance and forced migration for the poor to other areas or their eviction without providing them with alternative facilities;
- (ii) the initiation of housing and other schemes followed by clearance of slums and squatter settlements;
- (iii) the provision of minimal services for some of the existing slums and squatter settlements;
- (iv) the extension of tenure and physical upgrading;
- (v) the recognition of the legitimate role of slums and squatter settlements in urban development and the extension of social services with appropriate standards.⁹

The World Bank's influence on policy is both financial and intellectual; and unlike most proponents of new theories and innovative approaches, the Bank has singular opportunities for bridging the divide between theoretical principles and practice (Pugh, 1992).¹⁰ In 1975, having learned from programmatic experience that "master planning" and new construction had failed to reach the urban poor, the Bank pronounced that settlement upgrading and sites-and-services schemes should be "the prime instruments for improving the housing conditions of the urban poor" (cited in UNCHS, 1987a:173). The sites-and-services and settlement upgrading approach was subsequently so widely endorsed in principle that it legitimately became the 'new orthodoxy' UNCHS (1987a:174); indeed, it is difficult to recollect how recently these became a significant part of most government's housing policies (UNCHS, 1996a).¹¹ In some countries, however, upgrading was not considered to be an appropriate government policy (Hardoy and Satterthwaite, 1981).¹²

The higher priority accorded to upgrading programmes and the development of novel approaches to upgrading is identified by UNCHS (1996a) as one of the five most important innovations in

to low-income housing because: "community and individual participation in house construction does not work in urban areas (Tan and Hamzah, 1983:79).

⁹But if slums are considered to be decrepit conventional housing, it is unlikely that they will play as significant a role in urban development as informal settlements in which so many informal sector activities and income-earning opportunities are located (Cheema, 1986).

¹⁰The role and influence of the World Bank in urban housing policy in the South is discussed in greater detail in Appendix A.

¹¹Stephens and Harpham (1991), however, observe a distinct policy trend in the early 1980s: a shift from single sector settlement upgrading to multisectoral improvement projects, although timing and details differ between countries. They also note that the shift in terminology appears to derive from the fact that 'upgrading' is perceived by many to indicate physical improvement only.

¹²Iraq, for example, continued to condemn temporary buildings and *saritas* and try to rehouse some of those displaced in new settlements, with little attention paid to improving conditions in older housing stock (Hardoy and Satterthwaite, 1981).

housing policy in the South over the last 10-15 years.¹³ And in the Habitat Agenda, governments have committed themselves to:

Promoting, where appropriate, the upgrading of informal settlements . . . as an expedient measure and pragmatic solution to the urban shelter deficit. (*Commitment 43h*)

4.3. Settlement Upgrading

4.3.1 Definition of Upgrading

According to Tayler and Cotton (1993:xi),

Upgrading may be defined as a systematic attempt to improve living conditions for people residing in informal settlements.

Upgrading is frequently taken to include only infrastructure improvements; a wider definition would include improvements to some or all of the following (Tayler and Cotton, 1993:xi):

- housing (both improvements in fabric and additional rooms);
- on-plot facilities (particularly sanitation);
- social facilities (schools, health facilities, etc.);
- environment (tree planting, parks).

Upgrading is also used in its comprehensive sense to embrace "the improvement to service and social infrastructure in existing settlements and in addition the consequential improvement of the buildings themselves by those who live in them" (Shankland Cox, 1978: 157).¹⁴

4.3.2 Objectives of Upgrading

A discussion of the objectives of upgrading informal settlements in the South, according to Angel (1983b:5), risks turning into a irksome list of banal clichés ranging from the eradication of poverty to the enhancement of quality of life, and is "usually not regarded seriously". He further argues that there is no reason to assume that all the participants in the upgrading process share the same objectives. In his opinion, instead of asking "What are the objectives for the improvement of infrastructure in low-income settlements?" the question to be asked first is: "whose objectives?" (Angel, 1983b:5). Be that as it may, for purposes of the present study, a statement of the objectives is deemed necessary. This is especially so because a fundamental

¹³The others are: (i) the development of national shelter strategies by many governments that broadly follow the guidelines of the GSS; (ii) the increasing attention given to identifying and reducing discrimination against women and 'gender-blindness' in housing and service provision; (iii) the increasing influence of human rights movements or campaigns within housing; and (iv) the recognition by government of the importance of rental housing, with some initiatives to support its development (UNCHS, 1996a:342).

¹⁴In formulating its programmes, in which housing was the third priority after education and health, the Ministry of Housing and Human Settlements (MINVAH) in Nicaragua defined upgrading schemes broadly to include "not only housing improvements but a whole spectrum of services—physical infrastructure, schools, health [centres], markets, and recreation facilities" (Vance, 1987:171).

contention of the thesis is that the orthodox paradigm of upgrading is inappropriate to the Kenya context.

The apparently simple question—"Why is upgrading practised?"—as Martin (1983:85) affirms, yields a wide variety of answers. Generally, upgrading policies have been pursued in order to reduce the ever-increasing housing deficit (Skinner *et al.*, 1987a). In this regard, upgrading is indubitably practised because it 'solves' the housing problem by transforming 'illegal' dwellings into 'legal' ones, thereby improving housing statistics (Martin, 1983:55). But the objectives of settlement upgrading as determined by a United Nations Seminar held in 1970¹⁵ are

[to incorporate] the initiative, organizational ability, and capacity for work of the marginal population in the urban community and [to achieve] the greatest social benefit with the limited resources available.

According to Buranasiri (1983:124), a variety of goals are pursued in an upgrading programme including the following:

- To rationalize the existing services and promote the installation of water and electricity;
- To improve the living environment such as access, drainage, etc.;
- To increase directly or indirectly income-generation opportunities;
- To encourage savings through improvement of the residents' dwellings;
- To provide programmes which will ensure the security of long-term land tenure;
- To maintain the flexibility in providing low-cost housing; and
- To avoid government commitment to direct construction of housing.

Upgrading projects, especially those supported by bilateral and multilateral agencies, have also had other objectives. The most important of these, according to UNCHS (1987a:175), include the following:

- Projects should be 'affordable' for the urban poor.¹⁶
- Projects should be self-financing and have high levels of cost recovery.
- Projects should lead to the gradual improvement of housing on the basis of realistic standards as well as low overall costs.
- Upgrading projects should provide for income generation and employment creation.
- Projects should be 'integrated', providing for the systematic and co-ordinated delivery of physical and social infrastructure.
- Programmes and project impacts should be extensive in terms of coverage and reach.¹⁷

¹⁵United Nations (1971) *Improvement of Slums and Uncontrolled Settlements*. UN: New York, cited in Payne (1984:3). Note also the use of the term 'marginal populations'.

¹⁶Projects should aim to reach a large proportion of urban households normally bypassed by housing programmes. These include those for whom sites and services schemes are unaffordable, most of whom constitute the lowest 10% of the urban population (Payne, 1984).

Upgrading has also attempted to address the problem areas of land ownership, insecure tenure and poor quality housing. Projects have aimed to restore formal control over officially unplanned areas and house building processes, while endeavouring to mobilize the resources of low-income groups for either the improvement or creation of shelter (UNCHS, 1987a). They have likewise been designed to facilitate the gradual improvement of housing over time, thus enabling poor households with severely restricted resources the time and flexibility to consolidate their housing and attain certain formal qualities, in addition to gaining access to infrastructure (Kellett and Napier, 1995). Through the improvement of access to basic infrastructure, upgrading also aims to reduce health risks resulting from inadequate provision of potable water and sanitation. In many informal settlements, environmental improvement is itself critical aspect of poverty alleviation (McGranahan *et al.*, 1996).

Upgrading emphasizes the benefits of incremental development, flexibility and efficiency in the utilization of scarce resources and the need to achieve a 'multiplier effect' (Hardoy and Satterthwaite, 1981; UNCHS, 1987a, 1991b). But rarely has upgrading been motivated by an intention to conserve what is there on the merit of its aesthetics¹⁸ (Kellett and Napier, 1995).

There has generally been much more emphasis on infrastructural and physical improvements in upgrading projects, and to a lesser extent economic development. Considerably less attention has been paid to social upgrading and community development even though these are equally important (Miah and Weber, 1990; UNCHS, 1991c). As underlined by an Expert Group Meeting (UNCHS, 1977), informal settlements are composed of people, not just housing. Hence, physical upgrading of the environment, without enhancing the self-respect of the inhabitants will not produce lasting improvements. Some governments have, in fact, explored the possibility, within the provisions of their constitutions, of rehabilitating informal settlement communities, with a view to integrating families into normal urban life and citizenry,¹⁹ and dealing with the land tenure problem separately (Juppenlatz, 1970).

¹⁷ Upgrading projects have been undertaken at a scale sufficient to benefit the majority of low-income households in a number of countries. The Kampung Improvement Programme of Indonesia (KIP), which started in the capital of Jakarta and Surabaya and then became institutionalized and replicated across the whole of Indonesia, with the support of a series of World Bank-financed projects, must represent the greatest achievement in this respect, as it has benefited almost all low-income residents of informal settlements in Jakarta, Surabaya and Bandung. The concentration in KIP, however, was on the physical upgrading of public services, and an engineering approach that did not attempt the full recovery of project costs was adopted. Still, residents were stimulated to make substantial secondary investment in shelter improvements, which dramatically improved living conditions and public health throughout each city, at density levels that would have been difficult to achieve in new development projects (UNCHS, 1991b; 1991c; World Bank, n.d.).

¹⁸ Laquian (1983:76), however, reports that in a project in the Philippines, supported by the National Housing Authority and UNEP, several "model houses" were constructed that illustrated how old and salvaged materials from demolished informal settlements could be aesthetically and economically used in an upgrading project. The models successfully conveyed the acceptability of such standards and demonstrated their feasibility.

¹⁹ Certainly, in Tunisia, upgrading projects are assumed to "give to the inhabitants quality of life, dignity and aptitude to play a full social role in the urban ammonite" (Mhenni, 1990:113).

Political expedience may also underlie the implementation of upgrading projects. Improving the residential circumstances of entrenched and increasingly active informal settlement communities may help to diffuse political agitation for improved housing by residents and create security and stability among communities. Moreover, it can stimulate investment in house improvement by residents. To the policymaker this is an evident case of the physical goal incorporating economic, social and psychological considerations (Payne, 1984; Skinner *et al.*, 1987).²⁰

4.3.3 Components of Upgrading

Programmes to upgrade informal settlements differ with respect to objectives and programme components. A majority of policy packages, however, are derivatives of "the global technocratic paradigm of recommended action for settlement improvement—municipal service extension, tenure security, capital recovery, socio-economic stimulation and local participation" (Baross, 1983:156). The implementation of the policies will differ in emphasis, orientation and scale in different countries, reflecting the practical constraints imposed by the diverse types of informal settlement processes that these policies are designed to assist, or, alternatively, to discriminate against (Baross, 1983).

Most upgrading programmes entail a degree of legalization of tenure rights to land, a policy designed to control the growth of informal settlements and the basis to issuance of titles. They also typically include water supply reticulation systems, sanitation and drainage systems, access roads and footpaths, and supply of electricity, along with such social facilities and amenities as schools, health facilities, and community centres (Baross, 1983; UNCHS, 1987a). Not infrequently, they also include an employment and income-generation component (Skinner *et al.*, 1987a). Where some of these services and amenities already exist, they are improved (UNCHS, 1987a). A majority of programmes, inevitably and out of necessity rather than desire, confront the interests and demands of the local community (Hamdi, 1991).

Upgrading projects may or may not contain components specifically designed to secure improvements in housing and environmental conditions.²¹ It is, however, invariably hoped that residents will improve their dwelling conditions once security of tenure is ensured and basic infrastructure installed (Rakodi, 1988). But, according to Angel and Chirathamkijkul (1983), upgrading commonly tends to improve environmental conditions without really affecting land tenure conditions. In some cases, interventions such as the stabilization of land slippage, the

²⁰ Shankland Cox (1977) affirm that political, or economic or social factors such as the need to create employment within localities, may require the introduction of upgrading to very poor areas at high cost, as was found to be the case in Papua New Guinea.

²¹ For example, in Chawama in Lusaka, project provision to encourage improvement and construction of housing units included loans, building materials supply and technical assistance with construction (Rakodi, 1988). In Tanzania, low interest loans for property upgrading and small-scale enterprises were made available to beneficiaries (Werlin, 1988). On the other, upgrading programmes may exclude home improvement loans for various reasons, e.g. credit institutions may not be prepared to take on the combination of relatively high overheads for small loans and the perceived high risk constituted by the urban poor (Wegelin and Chanond, 1983). Indeed, access to capital plagues even low-income workers with secure employment who are likewise considered high risk by formal financing agencies (Ward, 1982b).

drainage of lands subject to flooding, and the eradication of vermin and pests hazards all improve the quality of the residential environment and stimulate investment by residents (Ward, 1982b).

4.3.4 The Special Nature of Upgrading

Settlement upgrading has a number of distinctions as a mode of housing delivery for poor urban households. The principles underlying upgrading, as identified by Shankland Cox (1978:157), are as follows:

- to optimise the use of existing housing and infrastructure;
- to provide levels of service that government and the people can afford;
- to provide assistance and incentives for the peoples in these areas to improve their own housing through their own effort over time.

Settlement upgrading acknowledges the existing housing stock, which represents an accumulation of initiatives, ingenuity, and self-reliance of the householders. It further aims to build on the established investments by providing major prerequisites for further investment and self-help: the legitimization of the settlement and improved security of tenure (where this is lacking) through the issuance of titles, and improved infrastructure, services and amenities (Conroy, 1987; UNCHS, 1984b).

In a majority of informal settlements it is the residents who have built and control their shelter environment (Martin, 1983). Consequently, given the opportunity, a majority of the inhabitants would rather improve their existing housing conditions than be relocated elsewhere (UNCHS, 1991a). Relocation commonly results in losses of employment opportunities, income and satisfaction because people are removed from networks of reciprocal exchange which serve to maximize economic security among low-income populations, as well as social kinship and friendship networks. Hence, any interventions by outside agencies, including public authorities, multilateral and bilateral agencies and NGOs, may be in conflict with the needs and aspirations of the residents. Indeed, in the long run, they could prove counterproductive (Laquian, 1983).

Participants in upgrading schemes are not self-selecting, unlike those who acquire public housing or site and service plots. The only option most inhabitants have is either to accept or reject an upgrading scheme. If the community accepts, then each resident is in the scheme, irrespective of their personal reaction (Martin, 1983).

Informal settlement residents, specifically squatters who have occupied the land on which they live illegally, are in defiance of the state, and sometimes of private landowners as well. However, by being outside the legal system, the residents have greater freedom than people in

other housing situations (for example, they pay no rent and face no external controls on land use or building). Upgrading, therefore, implies a loss of these liberties, a cost that residents must weigh against the advantages to them of upgrading. A full understanding of the costs and benefits of upgrading interventions is thus crucial for success (Martin, 1983). Besides,

[Settlement] upgrading represents more than a reduction of the housing deficit; it is an explicit recognition of the right to have [a] decent place to live, stressing the social character of land as opposed to its use by specific groups for speculative purposes. It can be an instrument to reduce the spatial segregation in the city, induced by the enormous income concentration and the social conflicts. By 'including' some of the [inhabitants] back into city life, urban violence . . . is reduced too. (Denaldi *et al.*, 1997:45)

4.3.5 Advantages of Upgrading

Upgrading has been considered to be a most appropriate policy response to the question of provision of urban services to informal settlements inhabited by the urban poor majority in the South for several reasons. The main advantage of upgrading, as conceived by the World Bank, is that it can reach down to all but the poorest groups of the urban poor (Urban Edge, 1984b).

Upgrading has a number of advantages which are found in the plurality of situations,²² as noted by various analysts (Bamberger *et al.*, 1982; Martin, 1983; Shankland Cox, 1977), including the following:

- It preserves existing economic networks and opportunities for those most in need, the urban poor.
- It preserves a community which has many integral linkages, and safeguards the interests of individual households and the community. Indeed, an important feature of upgrading as opposed to other housing processes is that it reinforces existing community ties by the additional security of physical and social upgrading.
- It preserves a low-cost housing system, frequently at advantageous locations, thus enabling the inhabitants to retain the maximum disposable income. Informal settlements usually have favourable locations with respect to employment opportunities so that their improvement *in situ* has advantages in this respect.²³

Experience in Jakarta, reported by Shankland Cox (1978:158), has also demonstrated that well-planned and implemented upgrading projects

- do not deplete the housing stock;

²²Advantages which are peculiar to specific situations have also been identified. For example, Martin (1977:95) distinguishes the following three in Lusaka, Zambia: "First, it is affordable by both the nation and the individual. Secondly, it is an enabling mechanism which gives individuals the chance to improve their housing conditions how and when they like. Thirdly, it enables them to retain a measure of social and economic control over their environment."

²³This is especially true in the case of most *majengos* in Kenya, as most are located in advantageous locations within the municipalities where they were established.

- providing a breathing space whilst new housing is provided for the increasing population;
- protect and perhaps enhance the delicate community relationship;
- can be carried out on a scale which makes a major impact on the problems;
- can be carried out at a cost which is affordable by the even the poorest household;
- can be carried out at cost which even the government can afford;
- can be carried out with a relatively simple technology;
- can be carried out very quickly;
- can be staged over time to give a basic level of service initially with the promise of gradual improvements in the future.

The alternative to upgrading is relocation in one form or another. The relocation of total communities adversely affects community organization and neighbourhood relationships. In addition to being socially disruptive, it usually involves being moved to a far less favourable location, especially in terms of access to (informal sector) employment opportunities and transport costs (Martin, 1983).²⁴

Upgrading places considerably fewer demands on public resources since the communities' participation can be more readily mobilized (Cheema, 1988). Also, an important consideration in the implementation of low-income housing projects is the maximization of local initiative and control over the project components and the way in which they are organized. In this respect, upgrading has an advantage over new shelter projects since residents are in place and usually desirous to articulate their needs and resources (UNCHS, 1991b). Moreover, because the target group is in place and informal-sector activities are established, small-scale enterprise-support components can be integrated into projects in the most efficient manner (UNCHS, 1986a).

4.4 Upgrading: Issues and Experience

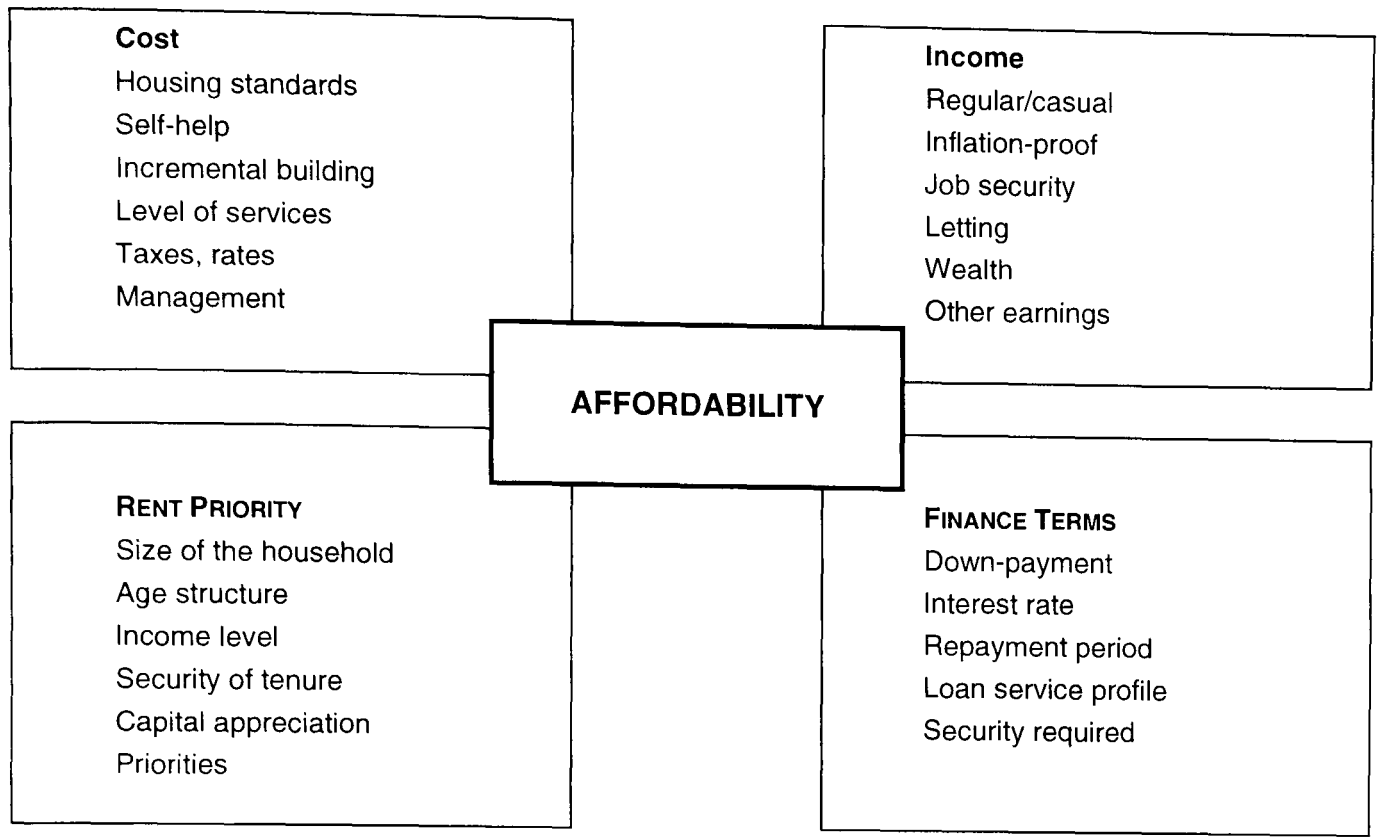
4.4.1 Affordability-Cost Recovery-Replicability

In the 1970s, physical standards and costs of urban investment were determined by economic exigency, which connoted the adoption of 'low cost' solutions. The determinant criterion for urban investments in shelter and infrastructure, at least for those financed by external agencies, became affordability (Cohen, 1990). The World Bank thus began its involvement in housing—specifically, sites-and-services and settlement upgrading—on the basis of its fundamental package of ideology, reform and user pays economics which came under the banner of three terms: affordability-cost recovery-replicability ideology (Pugh, 1990). The objectives of Bank housing policy in the 1970s were as follows:

Implement projects to provide *affordable* land and housing for the poor; achieve *cost recovery*; create conditions for large-scale *replicability* of projects. (World Bank, 1993a:52)

²⁴ Indeed, the National Housing Authority in the Philippines, affirming the urgency of an upgrading programmes in that country, recognizes that "Relocation to the urban periphery not only causes physical and psychological displacement, but leads directly to increased household expenses. Not only do the expenses of travelling to work increase, but also the economic opportunities fall drastically. As a result of these pressures, the poor who are affected by such programmes frequently abandon their structures and plots and gradually return to the cities." See also Lomnitz's (1988) study of *The Social and Economic Organization of a Mexican Shantytown*, and also Racki *et al.* (1974) and Skinner (1983). But, according to Parry and Gordon (1987), there are usually some who prefer to be relocated.

Figure 4.2: Primary components of housing affordability



Source: After Parry and Gordon (1987)

The Bank subsequently 'learned by doing' (Pugh, 1990:110). In implementing various programmes, the Bank was learning 'lessons from experience', adjusting its theory and practice of development, and adding to the advocacy of broader social and environmental programmes to supplement macro-economic (enabling) orthodoxy (Pugh, 1994a:360).

4.4.1.1 Affordability

Economists distinguish four primary components of housing affordability (Parry and Gordon, 1987), which are shown in Figure 4.2 together with the factors which influence each component.

The World Bank interpretation of affordable housing, however, implied that housing had to be set to standards, to forms and types, and to conditions which reached the low-income groups. In contrast to the public housing approach, the aim was to reduce unit costs to a level affordable to low-income households without the payment of subsidies (Pugh, 1990). The ability to achieve this objective is clearly dependent upon the patterns of income distribution and the costs of land, services, building and finance attributable to the project. These will, in turn, be determined by their market, or opportunity cost and the minimum standards of initial provision deemed acceptable by those concerned (UNCHS, 1991b).

While more sensitive to urban poverty than conventional low-cost housing schemes, upgrading projects have nevertheless been unable, for the most part, to reach the poorest groups. One

possible explanation for this, according to UNCHS (1991b:8), may lie in the concept of affordability itself:

Any approach that determines forms and standards of provision based on what households with different levels of income can afford for housing, or other expenditure, is forced into making assumptions that may not be justified.

Although affordability can be assessed through surveys,²⁵ the key to resolving the potential conflict between the cost of services and affordability is the selection of an appropriate technical and institutional solution (Lindfield, 1993). Affordability has been reduced by excessively high standards, by limitations on the way in which loans can be used, by restrictions on the use of housing for income-generating and informal-sector activities, and by the application of rigid requirements for mutual aid. This has resulted in a moderation of requirements in recent years—for example, a change from building-materials loans to construction loans, and to a wide recognition of the need for rental accommodation (UNCHS, 1987a).

But as far as Kosta Mathéy (1990b:15) is concerned:

the 'cheap recipe' of Sites-and-Services and Slum Upgrading, promoted as it is by the international agents, does not offer a solution which can be implemented on a large scale at affordable cost to the residents.

In the final analysis, it is cost that determines projects' affordability and accessibility to low-income groups (Laquian, 1983).

4.4.1.2 Cost Recovery

Cost recovery should be seen as a necessity and means of realizing positive results in the face of some hard realities and dilemmas. Cost recovery has several mutually reinforcing purposes: it ensures financial controllability of projects, minimizing demands on government resources and makes the 'user pays' principle overt and real; it ensures, in principle, the availability of housing capital is held intact, enabling a replication of investment projects as the modest surpluses of early projects are recycled to finance later projects; and without the operation of a 'user-pays' principle, housing and utility services may induce uncontained rural-urban migration and a self-perpetuating and limitless expansion of subsidies, ultimately resulting in the financial and managerial collapse of housing programmes (Mayo, 1987; Pugh, 1992; 1994a; World Bank, 1993; 1994).

²⁵For example, Vance (1987) reports that, in Managua, Nicaragua, a survey of household income, expenditure and employment was conducted, and the data were used in setting a realistic level of repayment for households. Several findings from the survey further influenced policy formulation.

Cost recovery takes diverse forms,²⁶ but its principles are always the same: "those who use a service should pay for it, or at least help substantially to pay for it" (UNCHS, 1991c:22). Security of tenure is frequently used as a *quid pro quo* for cost recovery in upgrading (UNCHS, 1991c). Pugh (1990:112) also affirms that:

Cost recovery becomes more than it seems in a 'learning by doing' process. It has to be related to various elements in housing—land, site preparation, off-site infrastructure, roads, drainage, project administration, and the continuing costs of maintaining utilities and infrastructure.

Cost recovery has proved to be the most serious of all upgrading problems, and also one of the most complex.²⁷ The degree of cost recovery of projects determines to a large extent the immediate rise in housing expenses the residents are confronted with (Kool, *et al.*, 1989). Cost-recovery records range from good in a few instances to bad in the majority and frightful in a not insignificant number.²⁸ In many countries, and especially in low-income communities, it has proved impossible to administer (Cheema, 1988; UNCHS, 1987a).²⁹ The most important factors determining the realization of cost recovery, based on country experiences, are: "(i) provision of accurate information to project participants; (ii) development of effective sanctions in cases of default; (iii) establishment of clear procedures for billing, collection, payments, recording, etc.; (iv) determination of the level of satisfaction with services rendered by management; and community pressure" (Laquian, 1983:110)

Although cost recovery remains problematic, upgrading has been generally accepted and projects are being implemented widely without provoking the heated debates of the 1970s (Van der Linden, 1994). Indeed, the World Bank, appreciating the significant contribution to improved shelter made by informal housing, has been devoting more resources into upgrading and service provision (Gilbert, 1997; World Bank, 1993).

²⁶ Cost recovery may operate through premium payments, user charges (i.e. direct payments by residents), surcharges on utility connections and consumption fees for water, sewage and electricity; general tax revenues; local taxation, levies on rental property, head taxes, or other fiscal instruments (Cheema, 1988; Lindfield, 1993; UNCHS, 1987a; 1991c). But according to UNCHS (1991c), housing, water, shops, markets and industry are all viable sources of user charges, but sanitation, drainage and roads are much less so. In general, where cost recovery through long-term finance is unrealistic or infeasible, indirect cost recovery, particularly through property tax, may be considered (Wegelin, 1983).

²⁷ In addition to collection of charges far below the targets set, examples abound of serious delays in the implementation of projects, of poor performance by contractors responsible for installing infrastructure and of poor maintenance by the public agencies (Kool *et al.*, 1989).

²⁸ Cost-recovery becomes more effectual when evictions are implemented among defaulters; but this can be politically hazardous (Pugh, 1990).

²⁹ In El Salvador, initial impressive cost recovery was attributed to several factors, including: judicious selection of project participants, an efficient billing and record-keeping system, strict collection procedures with the development of a high sense of social responsibility, regular visits by loans collectors to households, the threat of eviction to defaulters, and the active involvement of the community in the collection process. The cost recovery, however, subsequently deteriorated due to severe economic and political constraints (Bamberger *et al.*, 1982; Bamberger and Deneke, 1987). In Lusaka, endeavours to ensure cost recovery included incentives for early payment, the utilization of direct payments from employers, etc.; but they ultimately foundered as there was no legal machinery to deal with defaulters in the early days and the inadequacy of the debt collection system (Martin, 1987; Wray, 1991). The late completion of infrastructure and dissatisfaction with the services provided, especially solid waste collection, street lighting, and lack of maintenance also contributed to the level of non-payment as did the insufficient understanding of the breakdown of the different charges due (Wray, 1991). Poor cost recovery in Metro Manila was attributed to: uncertainty over the final land and service prices; inadequate lead time for establishing arrangements on a cost recovery basis; unwillingness to impose payments until all the physical works were operational; initial unfamiliarity on the part of the residents with the practice of regular repayments; and political and financial constraints on the implementing agency impeding its determination to collect outstanding repayments (Viloria and Williams, 1987).

Contrary to the popular notion that fully recovering costs afflicts the poor, full cost recovery in the delivery of infrastructure services may actually benefit them. The poor frequently pay much higher prices for infrastructure services because they are not connected to public service networks that have lower costs,³⁰ and because they do not gain from subsidies to users of the public system—typically the better-off. Hence, expansion of access benefits the poor by providing them with less costly services. Local governments have been more successful in recovering costs indirectly—e.g., "valorization" taxes have paid water supply and other local public services. With valorization, costs are allocated to affected properties in proportion to expected benefits (World Bank, 1994).

The questions of affordability and cost recovery represent two sides of the same coin. Unless the affordability issue is resolved, there is always the possibility of missing the target group; while cost recovery prospects are better in cases where affordable facilities are provided (Datta, 1987). Hence, Lee (1985) asserts that there may be need to adopt a more open and inquisitive attitude to the question of how households view their own problems of affordability. He submits that two complementary changes would be beneficial:

encouragement of potential beneficiaries themselves to determine what they can afford, basing the project design and principles of cost recovery on the outcome; and, simultaneously, taking a less dogmatic approach to income targeting. (Lee, 1985:140)

The World Bank (1993) affirms that projects it supports to upgrade infrastructure informal settlements will seek to achieve a substantial degree of cost recovery, in order that limited subsidy budgets can be spread as widely as possible.

4.4.1.3 Replicability

The ultimate objective of housing policy in the South, as affirmed by Cohen (1988), must be to generate an adequate supply to meet the demands of a growing number of low-income urban households. Consequently,

The issue of replicability and scale must . . . be viewed as a primary criterion . . . of new efforts in shelter design and delivery. It also is coincident with the issue of urban poverty, because the majority of households in need of urban services are and will be poor. Shifting from highly targeted projects for the very poor to a search for levers³¹ and mechanisms to address the many, does not imply less concern with poverty, but rather the realization that the problem of poverty is ultimately a problem of numbers. (Cohen, 1986:4)

³⁰ In most cases, greater efficiency and reduced unit costs can be realized by installing public services as a package, for example, instead of delivering separate infrastructure for water, sewerage, electricity and transportation. The realities of tenure in a majority of informal settlements, combined with uncoordinated planning and bureaucratic rivalries in the public sector, mean, however, that governments usually deliver services incrementally and not as a package to poor areas (Leonard and Petesch, 1990).

³¹ The "levers" referred to here are policy and institutional levers which might multiply the production of shelter and infrastructure, without adding to the organizational burden of the public sector housing agencies. These levers include housing finance, institutional development, training, improving land management and regulation, diffusion of technology, active efforts to encourage non-public systems of shelter and infrastructure provisions such as private enterprises, co-operatives and community organizations (Cohen, 1986).

Replicability brings affordability and cost recovery into a full cycle of interdependent consistency: if all costs are recovered because they are affordable, it will be possible to replicate projects (Pugh, 1992). Replicability is intended to result in a succession of projects over time with the wanted impact—environmental upgrading of informal settlements through the installation of basic infrastructure leading to better living conditions in informal settlements, and overall improvement of the urban low-income housing stock. Thus, through replicability of upgrading projects, there is the possibility that housing supplies and stock accumulation will better meet economic demands and needs (Cohen, 1988).

The replicability of projects is especially important in the light of the concept of 'demonstration' projects. Replication of projects requires the will and desire to execute them, the technical capacity, and the availability of land and/or finance. The replicability of projects requires that all are satisfied (Davidson, 1984:145). In other words,

the achievement of replicability is dependent on the extent to which the technical, financial and social measures adopted in the projects to improve the supply of land, utilities and services, and housing finance, and facilitate the construction and improvement of housing, are appropriate and sustainable. (Rakodi, 1989:2)

Replicability depends on the institutional capacity to plan and implement upgrading projects at the scale required, as well as on political commitment (UNCHS, 1991b). It has been suggested, also, that replicability is to some extent undermined by economic subsidies in the form of low rates of interest on funds, in written down land costs in some cases, and in the underpricing of some housing provisions (Pugh, 1992).

While settlement upgrading and sites-and-services schemes represented promising alternatives to the solutions of the 1960s, their implementation has not been without problems. Replicability, as it was conceived, has not been achieved, nor have the preconditions for large-scale shelter and infrastructure provision been put in place. Growing demands for decent shelter thus remain unmet (Cohen, 1983; 1990; Doebele, 1983). Nevertheless, upgrading projects have apparently fared better in achieving replicability than new development projects³² (UNCHS, 1991b).

4.4.2 Implementation Record

Upgrading policies have been pursued in order to reduce the ever-increasing housing deficit. More specifically, they have attempted to deal with particular problem areas in low-income housing, including those of tenure and housing quality. The formulation of appropriate policies and strategies, be it at an international level or a local level, however, does not guarantee

³² The Kampung Improvement Programme in Jakarta, for example, enabled virtually all low-income households to obtain security of tenure and services within a period of about 12 years. Similarly, the upgrading programme in Manila, if implemented as planned, was expected to expand to the necessary scale within about 15 years (Williams, 1984).

successful implementation on the ground. There have thus been failures as well as successes in upgrading efforts.³³ In each problem area, upgrading interventions have had merits and demerits; they have afforded the possibility of improving the situation in some of its aspects, but also the chance of worsening it in others (Pasteur, 1979; UNCHS, 1991c). As may happen in any change action, upgrading will solve some problems while creating new ones (Skinner *et al.*, 1987a). But various successful upgrading programmes demonstrate that the failings of earlier programmes are being overcome—costs and subsidies have been reduced significantly, access to the very poor (though still not the poorest) has been promoted, and security of tenure awarded (UNCHS, 1991c; 1996a)

The majority of upgrading projects implemented to date have been based on prototype schemes developed by the World Bank. As mentioned earlier, the Bank has exerted considerable influence in the development of housing theory and practice in the South since entering the low-income housing domain in 1972. Its preponderance arises partly from its role as a major financier which enables it to express its favoured policy reforms in the conditionality clauses attached to loan agreements with governments and the negotiations associated with them (Pugh, 1994a). Hence, despite several particularities, it is possible to identify a number of common problems. The problems identified by World Bank evaluations of projects include gaps in housing finance, excessively high standards and low cost recovery. These problems have occurred in varying degrees in projects, depending on the quality of implementation in localized institutional, political and cultural conditions. There is, therefore, "no valid generalization for either success or failure, but rather mixed results" (Pugh, 1997a:95).

The World Bank promoted sites-and-services and upgrading projects vigorously during the 1970s, and both were successful in so far as they demonstrated the feasibility of implementing low-cost housing provision, and that "housing the poor" is possible (World Bank, 1990:132).³⁴ The former, however, fell from favour because although the programmes of the 1970s and 1980s reduced the costs of shelter and infrastructure, they usually failed to reach the poorest households. Cost recovery was also unsuccessful (Gilbert, 1997).³⁵

Upgrading schemes have had more success than sites and services in reaching the poor.³⁶ This is largely because, as Pugh (1994a) observes, they have been specifically targeted at the poor

³³Expectations concerning the success of upgrading are conditioned by the wider economic context of development and the individual ability of residents in informal settlements to benefit from it (Lea, 1979).

³⁴Modifications in design standards introduced by some of the projects, in some cases, reduced costs dramatically. In Zambia, for example, the cost of houses in sites and services projects was less than one-fifth that of the least expensive government-subsidized housing. houses in the sites and services project in El Salvador cost less than half as much as the cheapest conventional houses in the public sector (World Bank, 1990).

³⁵ But in the sites-and-services projects in Madras, which represent a good example of balancing economic and social objectives, cost recovery reached 95% (Pugh, 1997a).

whereas sites and services plots have generally been allocated to households able to repay the costs.³⁷ Also,

the experience around the globe in the 1970s indicates that secure tenure, adequate infrastructure and shelter improvements can frequently be provided at half the cost in existing settlements as compared to the provision of new serviced sites, because the latter requires the acquisition of land and the meeting of official standards. (Bamberger and Deneke, 1984:52)

Policies aimed at increasing owner occupation through upgrading have doubtlessly added to the much needed potential for home ownership (Malpezzi *et al.*, 1990). The evidence also suggests that upgrading is a highly effective method of encouraging rental housing and increasing the housing stock for the urban poor, operating both on the demand and the supply side (Gilbert and Varley, 1991).

The Bank continues to recognize that informal housing makes a significant contribution to improved shelter; hence it has been committing more resources to upgrading and infrastructure provision (Gilbert, 1997). Upgrading has the great advantage that it is inexpensive: "[upgrading] projects . . . have proved effective, low-cost ways to improve the living conditions of the urban poor" (World Bank, 1992, 7.10 cited in Gilbert, 1997:53).³⁸

But, although upgrading appears to be a relatively straightforward operation, it seldom works out this way in practice because the welfare of informal settlement residents is not the only, or even the main, goal (Drakakis-Smith, 1981). Moreover, as Lea (1979) underlines, expectations concerning the success of upgrading projects are conditioned by the wider economic context of development and the ability of the community to benefit from it.

4.4.2.1 Reaching the Target Group

A fundamental issue in the definition of a strategy or policy for financing urban housing development is the question of who are to be the beneficiaries—the 'target group'. But it is one matter to define them, and entirely another to ensure that they are the ones whom the benefits

³⁶Keare (1983) affirms that, in Indonesia and the Philippines, upgrading efforts have been so successful that they are being replicated on a national scale in both countries.

³⁷Sites and services have, however, also been said to "require a bare minimum of physical facilities and represent essentially controlled and planned slum dwellings" (Western, 1979:55).

³⁸Gilbert (1992b) asserts that there has been a down-grading in the nature of intervention in informal housing, in that sites-and-services originated as core housing which could be progressively developed, but "has evolved into low-cost land development and the upgrading of existing settlements" (Malpezzi, 1990:972). On the other hand, according to Pugh (1994a:161), the World Bank's housing policies have changed from simplistic to intricate approaches to and understanding of the nature of housing. This reflected in various aspects of housing, including state-market relationships and appropriate representations and balances between the 'social' and the 'economic', and the manner housing and other policies are related to each other.

actually reach (Tym, 1984).³⁹ Reaching the 'poorest' is a complex process requiring detailed understanding of prevailing economic and social circumstances (Stephens and Harpham, 1991).

A range of interest groups are usually present in informal settlements. The significant differences in tenure, income status and priorities make it exceedingly difficult to target upgrading projects solely to the lowest income groups.⁴⁰ Given the composition of informal settlements, both in terms of housing conditions and resident populations, upgrading is apt to affect a broad order of incomes. Hence, although projects are able to penetrate the lower-income-group percentiles, the positive equity aspect is frequently countervailed because they also benefit higher income groups living in the settlements (Hansen and Williams, 1988; Keare and Parris, 1982; Kellett, 1991; 1992).⁴¹ Keare (1983:161) thus affirms: "[the] leakage of project benefits in upgrading [programmes] must generally be accepted as an inevitable consequence of *in situ* development activity." Upgrading projects have also tended to serve the most able and enterprising among the urban poor, leading to suggestions that they may have a polarizing and 'creaming-off' effect among the poor (UNCHS, 1987a:175).⁴²

The inability of projects to benefit those most in need of assistance remains a most disturbing feature of upgrading (UNCHS, 1987a). Indeed, that self-help housing and upgrading projects have largely benefited the poorest urban households is still a common misconception. The evidence is clear that both approaches have substantially catered to the urban working class, state employees and those working in the formal sector rather than the urban poor (Burgess, 1987). Certainly, in Kenya, studies in Kisumu (Macoloo, 1988) and Mombasa (Macoloo, 1994b; Magutu, 1997) have shown that upgrading projects, like sites and services schemes, have subsidized the upper income groups rather than assisting the lower income stratum for whom they were intended.⁴³

³⁹World Bank (1990) confirms that it is difficult for urban projects to reach the poorest groups. The most comprehensive study undertaken by the Bank found that those in the middle rather than the lower part of the income distribution tended to gain the most.

⁴⁰Evidence from many cities in the South shows that informal settlements are not exclusively inhabited by the poor. Furthermore, there tend to be notable differences in income levels amongst 'the poor' themselves (Baken *et al.*, 1991:46; Keare, 1983).

⁴¹Interestingly, Laquian (1983:149) asserts: "Household income, despite problems in estimating it, is a good guide to setting target groups ...It is especially useful in sites-and-services projects where eligibility criteria can be formulated and enforced. In ...upgrading, a more desirable method of defining target groups is to identify slum and squatter areas in cities. Once these areas are identified, the bona fide residents of those areas become the target groups regardless of their income levels."

⁴²In an account of their study of 13 informal settlements in Bangkok, Wegelin and Chanond (1983) mention the need to study further the "survival for the fittest" thesis that households who know how to cope with the process of urbanization tend to gravitate toward informal settlements with higher land tenure security, leaving behind those less able to move ahead in low tenure security areas.

⁴³In a study in which he takes an economic approach to public sector involvement in urban housing development, by analyzing the affordability, implicit subsidy and alternative mortgage repayments of various National Housing Corporation projects, Ondiege (1988:19) concludes: "low income households in Nairobi may not afford the conventional public housing in Nairobi, though they may afford the site and service schemes unsubsidized. These cheaper sites could be affordable at the market interest rates if we assume that the lower income households spend 30 percent of their income on housing. However, if they have to spend less than 20 percent, then interest subsidization would be necessary." See also Muller's (1982) study of two site-and-services schemes in Kenya.

The diversity of households and housing conditions found in most informal settlements can be extremely difficult to co-ordinate, and will likely affect leadership structures,⁴⁴ inhibit collective organization and action, and complicate coordination with public authorities (Hansen and Williams, 1988; Keare and Parris, 1982; Kellett, 1991; 1992). Because households are often at diverse stages of consolidation,⁴⁵ their willingness to participate in mutual aid efforts varies. Within any community, differing priorities can lead to a lack of commitment for projects that can ultimately result in project delays and cost-recovery problems (Hansen and Williams, 1988). Significant conflicts of interest between poor and wealthier low-income owners and between owners and non-owners can further undermine the strength of community action and participation in self-improvement of housing conditions (Edwards, 1982; Ward, 1982b). On the other hand, the heterogeneous nature of project is not necessarily a negative factor as it is likely to mean that the communities involved are more representative of the wider community and offer greater employment opportunities for their low-income members⁴⁶ (Keare and Parris, 1982).

Upgrading programmes that have been efficacious in reaching the lowest-income groups are comparatively rare. But it is apparent that upgrading is less-expensive and more cost-effective than sites-and-services though, even in the former, the very poor have frequently been passed over or pushed out. This has been partly due to the failure of most housing policies to address the needs of tenants, who constitute the majority of low-income households in numerous Southern cities (UNCHS, 1991c).

In sum: "shelter programmes and activities intended to benefit low-income groups have often been misdirected, inefficient, inaccessible, inadequate and fragmented . . ." (UNCHS, 1991c).

4.4.3 Tenure

Title and security of tenure are enshrined in most housing policies for the urban poor (Zetter, 1984). Legalization and security of tenure is commonly considered the cardinal element of upgrading, and a *sine qua non* for the provision of services, house improvement and settlement consolidation, both by the residents and by the government (Connolly, 1990; Martin, 1983; Rakodi, 1987; 1988; Varley, 1987; Vitoria and Williams, 1987). Indeed, the 1994-1996

⁴⁴The structure of local leadership in informal settlements is important for a settlement's fortunes, as measured by the degree of integration (installation of public services) and physical improvement (of housing structures) attained (Ward, 1978).

⁴⁵A study cited by Angel (1983a) found that where there are significant variations in the economic status of households in informal settlements, house improvement and consolidation vary accordingly: "The better the economic status of the households, the higher the investment in consolidation."

⁴⁶Studies of informal settlements have revealed that households in these areas are not "all of a kind": they encompass a wide range of income levels (Laquian, 1983:78). The efficient operation and functioning of these communities is partly traceable to their heterogeneity because it allows individuals and groups to perform all roles: leaders and followers, financiers and borrowers, and buyers and sellers. Much of the petty trading and income-generating activities in the informal sector arise from the fact that people "live off each other" in a most positive way in informal settlements (Laquian, 1983:78).

Development Plan (RoK, 1994) emphasises the importance of security of tenure in the upgrading process, and propounds that the Government will endeavour to provide this to beneficiaries wherever advantageous and practical.⁴⁷

The threat of eviction or demolition in informal settlements is considered to deter investment in improvement of residential circumstances; legalization, it is believed, eliminates this trepidation.⁴⁸ Thus, the justification for the use of land tenure legitimization as a settlement upgrading policy is that stability and security of tenure (ownership or leasehold) provides an impetus for the improvement of housing and community environment, and fosters willingness among residents of informal settlements to contribute to their own infrastructure (Choguill and Choguill, 1996; UNCHS, 1977). The origins of this argument, as affirmed by Varley (1987), are founded in the reiteration of authors, from Charles Abrams to John Turner onwards,⁴⁹ that greater security of tenure is associated with improved housing conditions in informal settlements. Indeed, the World Bank (1993) considers financing projects to upgrade infrastructure in informal settlements important because

they tend to generate greater tenure security and hence increased levels of domestic investment in housing. They tend to preserve a key component of the housing stock, one which directly serves low-income households.

However, Varley (1987) holds that, although tenurial security may be an important influence of housing investment behaviour, it cannot be claimed tenure legitimization is a *sine qua non* of housing improvements and settlement consolidation.

The question of tenure has been widely discussed by analysts of informal housing in the South, but there is no clear consensus as to its impact in facilitating investment in housing improvement. Payne's (1989) review of the literature, however, concludes that *perceived* security of tenure appears to be more critical in releasing investment for housing consolidation than legal status as such. Angel (1983a) similarly asserts that tenure security, whether backed by documents, by promises or by aspirations, is fundamentally subjective. The feeling of security is an expectation, a speculation that the property is not threatened and that eventually the right to stay will be

⁴⁷ In a socioeconomic evaluation of the Third Urban Project in Kenya, which had settlement upgrading as one of its components, Syagga *et al.* (1989:30) similarly assert: "There are . . . two essential ingredients of all successful upgrading programmes: security of tenure and the consultation, and active participation, of project beneficiaries."

⁴⁸ There are two main options as far as legal status applicable to informal settlements is concerned: to provide full legal titles or some form of regularization which gives security of tenure without the right to sell on the open formal market. The major advantage of the latter, as argued by Payne (1989), is its flexibility. The degree of legal status can be adjusted from a simple statement that a settlement will not be demolished, to one in which households are granted formal use rights for a stipulated or indeterminate period according to circumstances.

⁴⁹ For a comprehensive exposition of the marked transition that the concept of self-help underwent between the mid-1960s and the mid-1970s, which corresponds roughly with the publication of Charles Abrams' *Man's Struggle for Shelter in an Urbanizing World*, in 1964, and John Turner's *Housing by People*, in 1976, see Rodell and Skinner (1983).

legitimized.⁵⁰ If such anticipation is high, people can safely invest in their houses without jeopardizing their savings.⁵¹ In other words:

While tenure is generally considered a legal category, it is, just as fundamentally, a matter of the state of mind of the persons concerned. Stated operationally, the critical element may not so much be the legal category involved as the perception of the occupant of his security in relation to the investment contemplated . . . [The] amount of investment seems to be closely correlated with the perception of the risk of removal, irrespective of the technicalities of legal title. (Doebele, 1983:349-350)⁵²

The evidence in the literature, according to Payne (1989), suggests that it is not always necessary, or even advisable, to grant *de jure* tenure status in informal settlements in order to provide adequate security and stimulate investment in housing and consolidation. Any form of *de facto* tenure which provides a sense of security is generally sufficient, especially if bolstered by the phased installation of public services and amenities.⁵³ On the other hand, a UN study (UN, 1989) found that tenure security has not always been a sufficient condition to catalyze consolidation. It is frequently not the mere increase of security of tenure but the magnitude of that increase that explains the amount of stimulus provided. Whether or not legal titles are issued, however, is an important determinant of the attraction of an area to higher income groups which may attach more importance to having a "proper" title⁵⁴ (Kool *et al.*, 1989: 191).

Research in Latin America by Harms (1997) has also shown that the legal characteristics of tenancy (e.g., status as renters) have not been important factors in the decision to invest. Most investments are indicative of the residents willingness to invest considerable resources despite

⁵⁰ Taylor (1987) found that, in Jakarta, higher levels of home improvement expenditure were attributable to a greater sense of security among residents, who perceive KIP (Kampung Improvement Program) inputs as indicative of government commitment to the *kampung*, implying that spontaneous investments will be relatively protected.

⁵¹ The availability of resources to households in project areas or the proportion of those resources that households would or should expend on housing improvements is a matter of some debate (Lee, 1985; Rakodi, 1992). But a study by Mhenni (1990) in Tunisia found that, in order to improve their housing, beneficiaries in the Third Urban Project spent their savings. Also, in relation to this, England and Alnwick (1982) contend that there is a risk that the acquisition of improved housing on the assumption that target populations can afford a proportion of their income (20-30%) will be achieved only by further depressing poor households' nutritional status (see Chapter 2.4.2). Indeed, surveys of Chawama, Zambia, revealed that, because the cost of food increased much faster than incomes, households found it increasingly more difficult to spare any money at all for housing (Martin, 1982). This problem, as Martin points out, cannot be solved simply through housing policies, although there is scope for modifying the standards to make the solution cheaper. Indeed, Rakodi (1995a) identifies postponing house improvement or repairs as one of the strategies that urban households have adopted to cope with the impact of recession and structural adjustment.

⁵² In relation to this, Spence *et al.* (1993) observe that considerable effort is expended in upgrading schemes surveying complex boundaries between properties which, in densely built inner-city locations may include situations such as rooms overlapping other people's houses, despite the fact that perceived security of tenure does not necessarily depend on legal documents. Turner (1972) earlier noted that, not only the significance of alternative forms of tenure, but also the significance of physical, emotional and financial security were yet to be understood.

⁵³ Yap (1989) similarly asserts that once governments announce their intention to regularize tenure in informal settlements, most residents are no longer interested in becoming legal owners of the land they occupy—the mere announcement of regularization gives them a maximum level of *de facto* security of tenure at no cost. In Lusaka, Zambia residents in settlements that were upgraded were initially given *de facto* security of tenure. The new land tenure system could not be implemented, however, until upgrading operations had been substantially completed. But when the legal preconditions for issuance of occupancy licences had eventually been fulfilled, actually obtaining the licences had lost its significance, as the residents were fortified by their *de facto* security of tenure (Martin, 1987; Rakodi, 1987).

⁵⁴ With reference to Turner's studies of the urban poor's housing activities, Choguill and Choguill (1996) assert that households who earn erratic incomes in an unstable economy regard property as a primary means of security in much the same way as middle and upper classes viewed banking services, access to credit and insurance. Conversely, Jones and Ward (1994) hold that the issue of land title is not a priority for low-income resident, and that "while the Bank sees the lack of tenure security as an impediment to the acquisition of resources and especially credit, the poor may see it as a cost avoided" (Jones and Ward, 1994:47).

the knowledge that the investments will not be recouped. It also shows that tenants do not view their situation as temporary. Contrarily, they consider it permanent, and have consequently developed certain attitudes and activities, defined as "urban space occupation strategies"⁵⁵ (Harms, 1997:206).

The upgrading and regularization of informal settlements with secure land tenure, the provision or improvement of infrastructure and services, and improved housing is usually of most benefit to owner-occupiers, as it is the value of their asset that is increased (Mitlin, 1997). Whether owners do, in fact, gain from legalization and upgrading is, however, largely dependent upon the terms of the intervention. If land titles are expensive, owners may be compelled to sell to meet the cost of the deeds. Similarly, owners may be forced out of the settlement if lump-sum payments are required for infrastructure improvements and the consequence of defaulting is legal action (Gilbert, 1992).⁵⁶ As Payne (1989:47) puts it:

regularisation of legalisation can be double-edged sword. For owners, it represents their formal incorporation into the official city, and the chance to realise what may be a dramatically increased asset. For tenants, or those unable to pay the additional taxes that usually follow, it may push them off the housing ladder altogether.

Improved tenure can create instability rather than consolidation; it will probably cause land values and rents to rise (accruing to owners and not necessarily tenants) and impose the additional costs of government land and property taxes with consequential effects upon affordability. These are the conditions for the invasion of informal settlements by more affluent groups who can invest in affordable, now titled, land (Zetter, 1984).

Problems of legalization of tenure appear to arise largely from the process of projects interfering in powerful land markets on behalf of the urban poor. It has been argued that too radical a move towards tenure security in informal settlements can upset the equilibrium of the low-income housing market, especially the rental prices being paid (Baross, 1983). One possible outcome of manipulating urban housing markets in favour of the poor may be "the expulsion of the poor from their self-help settlements-turned-into-commodity. Renters in these settlements will be the first victims" (Kool *et al.*, 1989:188).

The matter of tenure is of especial import to upgrading interventions in Kenya due to the prevalence of renting and (absentee) landlordism in informal settlements. The conventional paradigm of upgrading presupposes owner-occupation, whereby issuance of tenure will facilitate

⁵⁵ The principal components of this "strategy" were found to include: (i) considering their stay to be permanent; (ii) preventing the arrival of more people to live in the neighbourhood or property; (iii) maximizing the use of existing space; and (iv) expanding the living space to accommodate households and families already living on the same site or in the same building who "have nowhere else to go" (Harms, 1997:206).

⁵⁶ In a study of the possible impacts of upgrading in Santa Marta, Colombia, Kellett (1989) notes that it is estimated that the commercial value of property will increase up to 300% with a concomitant increase in costs to owners to reflect the improved conditions.

access to formal sector credit by householders as they will be able to use the land as collateral and thereafter be in a position to improve their dwellings. But granting tenure can not only lead to an increase in land values, but also precipitate speculation and large-scale landlordism in informal settlements. Thus, landlords stand to profit while renters are placed in an extremely vulnerable position (Cheema, 1988; Doebele, 1983; Earthscan, 1983; Majale, 1993). Granting legal tenure in the Kenyan context has very different implications. For tenants living in informal settlements, regularization will produce few direct benefits (Gilbert, 1986); rather, landlords can potentially profit at the expense of renters by imposing rent levels which are unaffordable by the latter (Majale, 1993). Indeed, Amis (1990) affirms that all the research evidence in Nairobi suggests that landlords, both large and small, will seek to maximize returns.

Improved land tenure can be perceived by all members of the community as an incentive to participate in upgrading activities and to agree to the readjustment of plot boundaries and to the necessary removal of structures (Angel *et al.*, 1983). Most significantly, they gain recognition of their existence as urban citizens and security from eviction, although this can unfortunately make them liable for land and property taxes they can ill afford (Stephens and Harpham, 1991).

The regularization of informal settlements is by no means a cost-free panacea to the housing crisis, as it is sometimes suggested. The regularization of informal settlements often entails high costs for remedial, *post hoc* planning and laying of the infrastructure (Van der Linden, 1994). Indeed, it may be more costly to install services and utilities to areas of irregular housing than to provide them in advance in new residential areas (O'Conner, 1983). Moreover, costs may compare favourably with conventional development costs, but they compare unfavourably with informal development costs (Matthews Glenn and Wolfe, 1996).

Contrary to most assertions, Saleem (1983) contends that since security of tenure provides for long-term occupancy rights, it may have the adverse effect of freezing the physical development of settlements for a considerable time, thereby precluding desired improvements.

4.4.3.1 Site Planning and Reblocking Process

In many cases, informal settlements have evolved in an irregular and essentially unplanned manner.⁵⁷ Consequently, complex problems of 'reblocking', 'replotting' or 'rationalization' may arise. In general, reblocking addresses itself to the improvement of the physical environment of the project sites, and involves

planning the physical layout of the road network and land allocation for residential, commercial and institutional use, subdividing the residential area into individual lots for awarding to eligible beneficiaries and

⁵⁷UNCHS (1977), however, asserts that, in Africa, what appears to be a haphazard layout of structures in informal settlements is often found to be a characteristic pattern of village housing based on vernacular arrangements.

realigning the existing structures so that they fit into generated lots and infrastructural networks can be laid. (Leynes, 1990:17)

The procedure thus involves examining the disposition of structures within settlements and providing development plans that correspond, as far as possible, to the existing layout. However, there is a trade-off: for the greater the effort to equalize, square up and rationalize the layout of plots to facilitate the installation and/or expansion of basic services and rights-of-ways (access roads and footpaths), the greater may be the need to physically clear and/or move existing structures (Davidson, 1987; Doebele, 1983; Potter, 1985; Turner, 1980b; UNCHS, 1987a).⁵⁸ Minimum displacement and/or demolition of structures may result in irregular layouts with unequal-sized lots; this is, however, generally found to be more acceptable economically and socially (Turner, 1980b). In relation to this, *Habitat Recommendation C17* (cited in Hardoy and Satterthwaite, 1981:255) states that governments should concentrate on providing services and on the "physical and spatial reorganization of [informal] settlements in ways that encourage community initiative."⁵⁹

In the event of reblocking, it is not improbable that refusals to co-operate and claims for compensation may arise. Should such a situation arise, an able administration will be needed to arbitrate disputes and overcome possible political resistance (Doebele, 1983).

4.4.3.2 Densification

An almost universal consequence of upgrading programmes is densification of the population and/or dwelling units in settlements. This can occur through the construction of additional rental accommodation by landlords investing in land and property within the newly legitimized settlement, expansion of households, doubling up in existing dwelling space, or through the subdivision of existing plots (Gilbert, 1986; Kool *et al.*, 1989).⁶⁰ Densification leads to an increasing potential demand for goods and services within the settlement (Hansen and Williams, 1988).

⁵⁸A study of zonal improvement programme (ZIP) sites in metropolitan Manila found that the reblocking activities had adversely affected 41% of the structure within the reblocked area. Adversely affected were those "realigned with or without any portion of the structure cut or chopped, and those moved to another lot" (Leynes, 1990:21).

⁵⁹ However, in the upgrading programme in Tondo, Manila, as part of the site planning and reblocking process, three alternative layouts were presented to the community. These ranged between a very modest adjustment to the existing layout ("as is, where is" plan) to a fairly radical rearrangement of most structures (Viloria and Williams, 1987:18). Following discussion, the community opted for the most regularized layout, which involved considerable movement, effort and expenditure. The subsequent realization that the cost of reblocking was to be met by the individual households gave rise to objections and delayed implementation.

⁶⁰The upgrading programme in Epworth, the largest squatter area in the Harare region, opted to continue agricultural cultivation—it was probably politically easier to accept upgrading if the area was not defined as urban. Hence, instead of planning for subdivisions and infill of additional housing, tenurial security on large plots was granted (Schlyter, 1990). Similarly, in Zambia, the argument for larger plots was based on the need expressed by project beneficiaries to have a garden (Laquian, 1983).

Regarding the impact of upgrading on changes in types and amount of rental space, in number of persons occupying such space, in rent levels, and in renters' response to increased rents in *kampungs* in Jakarta, Taylor (1987) found that, although total rental space had not increased, occupancy within this space had increased by between 50-100%. Situations where one-room dwellings, which had previously been occupied by households of 5-6 persons, were accommodating 9-10 persons were not uncommon. Hence, while occupancy declined in owner-occupied dwellings, there was evidence that many of the lower-income renters were "doubling up" to pay higher rents (Taylor, 1987:50). In Colombia, a tendency of nuclear families' developing into extended families as a result of an upgrading project was also noted. The common denominator in these examples is that increases in expenses following upgrading are shared by more individuals, with densification being the result at the dwelling and neighbourhood level (Kool *et al.*, 1989).

4.4.3.3 Dedensification

One of the drawbacks of upgrading, according to Shankland Cox (1977), is that it makes no initial impact on the reduction of density in overcrowded areas. But they note that a reduction in density can, however, be anticipated over time when home improvement has followed infrastructure upgrading, provided there is somewhere for those who so wish to move to.⁶¹ Related to this, UNCHS (1997) asserts that, because the provision of infrastructure to densely populated settlements without some form of disturbance is extremely difficult, new settlements, in fact, tend to emerge even from an upgrading project.

The process of incremental improvement in existing informal settlements, as affirmed by Pasteur (1979), will only be successful if there is adequate space for expansion. To facilitate this, and generally to reduce densities within the settlement as a whole which is often necessary, areas of excessive density have to be thinned out. This can be a highly controversial issue among the various interest groups.⁶²

On the other hand, UNCHS (1977) holds that densities should be accepted as a fact, at least where there already exist, as changing them may be infeasible. If anything, it is more probable that they will increase due to the factors that mass people in high concentrations. Hence, infrastructure and the rest of the settlement should be adapted to high densities rather than the reverse, that is, attempting to adapt densities to conditions.

⁶¹UNCHS (1977) asserts that it seems obvious that reduction of densities and room occupancy rates should complement efforts to increase the supply of environmental services in informal settlements. In practice this is an impracticable accomplishment unless the supply of housing and reception sites begin to catch up with demand. At the same time, attempting to move people out of settlements to another location in order to improve living conditions may be self-defeating. The supposition could be that the density in the existing settlement is too high; but it has been argued that densities are never absolutely too high except with respect to the existing infrastructure and amenities.

⁶²In Lusaka, the selection process of dwellings to be demolished and households to be relocated evolved with experience; it was, however, a matter of much disputation within the implementing agency (Pasteur, 1979).

4.4.4 Standards

Excessively high standards is the classical problem of the South (Gakenheimer and Brando, 1986; 1987). Indeed, the question of standards underlies much Turnerian thought—which influenced the first fundamental shift in World Bank housing policy in the post-war years. According to Turner (1972:148):

The fact that the enforcement of unrealistic standards (unilaterally defined as the minimum acceptable) serves only to worsen the housing conditions of the poor raises the basic issue in housing—that of its meaning and value for people.⁶³

The essential purpose of design and construction standards, according to Tayler and Cotton (1993) is to ensure that facilities fulfil their intended functions and will continue to do so over their expected life spans. This being the case,

They should . . . be related to the location and required functions of facilities rather than being set arbitrarily on the basis of standards adopted in another quite different set of circumstances. (Tayler and Cotton, 1993:6)

Unrealistically high, inflexible (and often unattainable) standards for subdivision, infrastructure, and construction, governing the physical form and cost of neighbourhoods, make it impossible to build low-income housing legally (Crooke, 1983; World Bank, 1993). The constant breaches of minimum standards by low-income groups point to the inability of public authorities to impose essentially unworkable principles in housing in the South (Burgess, 1978).

High standards imply high costs, which implies a heavy burden on beneficiaries in terms of cost recovery, or else to the authorities through large subsidies (Martin, 1983).⁶⁴ The standards applied can significantly affect both the level of charges and the degree of attractiveness (Kool *et al.*, 1989). High standards inevitably result in the eventual occupation of housing by a more affluent group than the intended beneficiaries (Turner, 1980a; 1980b). Moreover, they can be a major constraint to local resource mobilization (Lyby, 1992).

Standards are relative and must necessarily vary considerably from place to place and time to time. They cannot have universal applicability and should not be thoughtlessly transferred from one environment to another where they may be economically and socio-culturally irrelevant (Turner, 1980b). Indeed, *Habitat Recommendation C3* (cited in Hardoy and Satterthwaite, 1981:240) states:

⁶³As Fichter (1972) affirms, when housing is regarded as a physical product, it will be judged entirely by physical criteria. Conventional housing standards thus assess acceptability in terms of occupant-area ratios, services, ventilation, etc., determined on the needs of some hypothetical standardized inhabitant.

⁶⁴In some instances, prevailing high standards have not been a conscious choice; they are simply a colonial legacy. In other cases, high standards have been demanded as evidence of economic development and modernization. Still others have argued in favour of the high capital costs required to meet high standards in preference to high maintenance costs, but the implications of high standards for low-income households has usually been overlooked; as has cost recovery which is major issue for public administrators (Rodwin and Sanyal, 1987).

Standards for shelter, infrastructure and services should be compatible with local resources, be evolutionary, realistic, and sufficiently adaptable to local culture and conditions . . .

Pragmatic efforts to formulate appropriate standards have shown that conditions in the South reflect a continuum that ranges from the situation in the subdivisions and residential neighbourhoods of the affluent to that in informal settlements. Standards should consequently reflect the full gamut of these prevailing conditions and not attempt to impose a universal code applicable to all situations (Laquian, 1983). Hence, legislation which enables the use of reasonable standards and gives the relevant authorities fairly wide scope for interpretation is a critical aspect of upgrading (Turner, 1980a; 1980b). Indeed, the replicability of projects, and their ability to reach all or a majority of poor urban households over time, is largely conditioned by how low standards (and therefore costs) are set and on the extent to which costs are recovered from beneficiaries. It is essential, therefore, that project design is based on estimated levels of affordability rather than on predetermined standards of infrastructure, construction or facility provision (Linn, 1983).

In this respect, the World Bank⁶⁵ (cited in Turner, 1980b:219) recommends an 'ad hoc iterative approach', basing levels of service on existing norms, which would then be explored in terms of adapting standards to produce a project within the cost ceiling imposed by the need to recover costs from the beneficiaries. The nature of facilities to be provided could then be assessed for realism by comparison with the pattern of household budgets in the income category concerned. As it is quite impossible to upgrade existing settlements successfully without the active co-operation of the residents, they should be involved in basic decisions and allowed to choose between different options in terms of standards and costs (Turner, 1980a; 1980c).⁶⁶ Conceivably, "by increasing access, cutting standards in projects can bring enough people out of [slum conditions] to appreciably raise standards overall" (Rodell and Skinner, 1983).

4.4.4.1 Actors in 'the standards stalemate'

Although high standards are increasingly recognized as a major constraint to the provision of shelter for low-income households, the formulation of more appropriate standards remains a difficult task. This is, perhaps, largely because it is no longer a technical but an institutional problem (Rodwin and Sanyal, 1987). The problem of standards must be understood through the positions of several interacting parties (Gakenheimer and Brando, 1986; 1987). The "standards stalemate", according to Gakenheimer and Brando (1987:135), has been perpetuated by the

⁶⁵ *Sites and Services Projects*, a World Bank Paper (Washington, April 1974), pp. 10-11.

⁶⁶ Martin (1983) remarks that, despite the evident link between cost recovery and subsidies, few project planners appreciate that, unless the residents accept the standards established in the project, they are being compelled to consume a good they did not see the need for. However, in the formulation of the upgrading programme in Lusaka, considerable effort was put into ensuring that standards were affordable and would not prejudice the targeted beneficiaries—but the deliberately low standards were far exceeded by the participants (Martin, 1982). Similarly, in the Philippines, people persisted in using cement, hollow blocks and steel rods in upgrading projects—despite attempts by the implementing agency to introduce lighter materials (lumber and plywood) to improve affordability. This suggests that the most significant factor may not be regulation and control of materials standards, but rather a more accurate estimate of what households can actually afford (Laquian, 1983).

mutually reinforcing behaviours of the interacting participants in "the unintentional conspiracy". The principal decision-makers are averse to altering standards, more so because they do not want to appear to be "demodernizing" services; the responsible public agencies seek the invulnerability of over-specified construction; and project designers and contractors seek substantial, modern solutions. The suppliers, the users, and the international agencies also play a part. Laquian (1983:85) sees it thus:

The wide divergence between existing conditions in [informal settlements] and the "minimum housing standards" sought by planners and housing designers is more than a reflection of the dualism that exists in most [Southern] countries today. In many ways, it is the result of differing attitudes, values, and "world views" between professional engineers, architects, and planners and the urban poor . . . [who are] influenced by different environments and thus see things in different lights.

The main advantage of building codes and housing standards in informal settlements is that they can help preclude the haphazard and uncontrolled construction that occurs when such areas are ignored. They can also be useful in upgrading when existing conditions are improved and regularized. The effect of this, however, is the "formalization" of initially informal activities (Laquian, 1983:80). Hence, the biggest challenge to housing authorities, as far as standards are concerned, is:

assuring the vitality, creativity, and dynamism that is found in the informal building sector does not get emasculated by the introduction of codes and standards. . . . The main issue . . . is not whether they should exist or not, but whether they can assist the real building process. (Laquian, 1983:80)

4.4.5 Infrastructure

The Vancouver Conference identified the provision of shelter and its supporting infrastructure and services as one of the principal issues to be addressed by human settlements policies. The Conference's Plan of Action (cited in UNCHS, 1987) pronounced that the paramount objectives of settlements policies should be to make shelter, infrastructure, and services available to those who need them, in the sequence in which they are needed and at an affordable monetary or social cost. Social justice, it further asserted, depends on the manner in which these facilities are distributed among the population and the extent to which they are made available. Next to land, the provision of (minimum) infrastructure to residential settlement areas is the most important impediment to meeting the shelter demand for all income groups (van Huyck, 1987).

Despite some real progress in the provision of infrastructure since Habitat I, access to potable water, waterborne sewerage, efficient drainage systems, solid waste collection and all-weather roads remains low in the poorest of settlements in the South (UNCHS, 1991c). Hence, two decades later, the Habitat Agenda (UNCHS, 1997c:1) is still committed to

Providing adequate and integrated environmental infrastructure facilities in all settlements as soon as possible with a view to improving health by ensuring access for all people to sufficient, continuous and safe freshwater

supplies, sanitation, drainage and waste disposal services, with a special emphasis on providing facilities to segments of the population living in poverty.

Inadequate water, sanitation and solid waste services have environmental and health impacts that rate amongst the most critical problems facing human settlements in the South.⁶⁷ The public sector, indubitably, has a paramount role to play in the provision of infrastructure services; economies of scale, externalities, and the possibility of monopoly conditions under private sector are notable arguments for the public provision of urban utility services (Linn, 1983). An increasing amount of evidence suggests that inappropriate government legislation, regulations, controls, incentives and methods of service delivery commonly increase the costs of providing urban services. The impacts of these deficiencies are greatest on the urban poor living in the burgeoning informal settlement surrounding most cities which typically remain outside the reach of local authority services, including formal infrastructure facilities; a condition arising predominantly because of their nonpermanence of tenure. Infrastructure is vital for ensuring that growth is consistent with poverty reduction; access to minimal infrastructure services constitutes one of the essential criteria for defining welfare. To a great extent, the poor can be identified as those who are unable to consume a basic quantity of potable water and who are subject to unsanitary surroundings, with extremely limited mobility or communications beyond their immediate settlement. Consequently, they have more health problems and fewer employment opportunities (Rondinelli, 1988; Satterthwaite, 1995b; UNCHS, 1995b; 1996a; 1997a; World Bank 1994).

In most respects the type of physical development undertaken in an upgrading project differs little from the basic infrastructure provided in conventional housing development: if it does differ in its physical characteristics, it is because it is not as complex (Pasteur, 1979). Issues pertinent to the provision of services and utilities in upgraded areas include appropriate standards and technology to be adopted, implementation and cost recovery (Rakodi, 1987). Additional principles that should be kept firmly in mind in considering infrastructure options are: (i) services levels must be appropriate; (ii) they must be co-ordinated; and (iii) they must allow for later upgrading (Parry and Gordon, 1987),

4.4.5.1 Appropriate Technologies

Deficient infrastructure services in the South are due in large measure to an insistence on inappropriate technologies (Ridgley, 1993).⁶⁸ Without doubt, much technology is inappropriate because it is designed to meet theoretical economic or scientific views of what is needed, and disregards what people actually want (Thomas, 1978).

⁶⁷ At least 220 million urban dwellers lack access to potable water, more than 420 million do not have access to the simplest latrines, and an estimated 20-30% of solid waste remains uncollected (Baharoglu, 1997).

⁶⁸ Many politicians, administrators and engineers, for example, are ready to discount the value of pit latrines in favour of more 'modern systems' (Cotton *et al.*, 1995).

With few exceptions, the technologies currently proposed by urban public utilities in the South are the same as those employed in the North. These technologies, which were developed by wealthier nations in different circumstances, typically exhibit numerous demerits when applied in the South, among them: (i) they are too costly, meaning that only a restricted proportion of the urban population can be served; (ii) they require substantial amounts of capital, skilled manpower, and energy, all of which are in limited supply; and (iii) they necessitate the importation of material and components, resulting in a flight of scarce foreign exchange. The utilization of appropriate technologies can obviate many of these problems (Ridgley, 1993). In practice, the use of the concept of appropriateness of technology means the deliberate application of criteria for selecting which technology is appropriate in a given set of circumstances (Thomas, 1978).⁶⁹ In other words:

[Appropriate technology] should first and foremost be an indigenous creation of the [Southern] countries themselves (Jéquier, 1976:25 cited in Howes, 1979:119) . . . the real issue is not to develop new hardware, but to build up an innovation system (McRobi, 1976, cited in Howes, 1979:119)

The World Bank affirms that, given their limited resources, local authorities in the South should adopt policies that promote low-cost basic services for the many rather than high-priced services for the few (World Bank, n.d.). The solution of urban environmental problems in the South is contingent upon the use of appropriate technology (Page, 1988).

4.4.5.2 Implementation

Informal settlements are typically the poorest neighbourhoods in urban areas, not only in terms of the socioeconomic status of the inhabitants, but also in terms of provision of infrastructure. Hence, in their case for incremental upgrading, Cotton and Franceys (1991:6) contend:

In reality, many [informal settlement] dwellers exist in an environment which totally lacks drainage, sanitation, suitable access, solid waste removal, and power supply; there may be only access to small quantities of grossly polluted water. In effect, this corresponds to a 'zero baseline' service level. Any improvement in service is therefore likely to result in some benefit to the inhabitants. This suggests an alternative approach where the level of service is increased in an incremental fashion to give incremental benefits in health, safety, social well-being and convenience over a period of time, and to move away from the view that conventional service standards are an objective in their own right.

Cotton and Franceys (1991:6) thus suggest infrastructure development which begins with provision of a 'primary' level of service: i.e., "that which produces the first and lowest stage of improvement above the zero baseline of physical infrastructure to satisfy basic needs in each sector." They consider it a beginning in the realization of objectives which are commensurate with the standard of housing. Primary level service can subsequently be upgraded in an incremental manner. They deem the provision of primary level service an appropriate first stage

⁶⁹Wegelin (1983) alleges that: "Planning of infrastructure usually a heavy-handed top-down affair based on inadequate guesses about needs. Vested interests besides those of the users have an especially heavy weight in top-down planning: appropriate infrastructure often does not make for equally lucrative contracts (both officially and unofficially) as high-standard infrastructure does."

Table 4.3: Technical options for infrastructure

TECHNICAL OPTIONS: INCREASING SERVICE LEVEL THROUGH UPGRADING				
SECTOR	OBJECTIVES	PRIMARY LEVEL	SECONDARY LEVEL	TERTIARY LEVEL
Drainage	Safe disposal of sullage; rapid disposal of storm water	Soakage pits Lined drains from water points Earth storm drains	Lined sullage drains Lined road drains Profiled and compacted earth drains	Open drains covered in cluster Piped drains
Roads	Pedestrian and vehicle access to all houses	Profiled and compacted earth roads	Profiled and compacted gravel roads Water bound macadam roads Bituminous surfacing	Bituminous macadam pavement Concrete pavement
Water	Potable water within reasonable distance	Water point per 200 people for 20 litres pc	Water point per cluster Yard connections Metered house connections	Metered household connections In-line water storage Solar water heating
Sanitation	Safe disposal of excreta	Household improved pit latrines Household off-set pour flush latrines	Communal septic tanks Reduced cost sewerage	Conventional sewerage
Solid waste	Adequate removal and disposal of slid waste	Communal bin within 100 metres	Increased number of communal bins Street corner collection	Kerbside or household collection
Power	Economic power consumption Future power line installation	Allowance for improved cooking stoves; Clearance maintained between plot boundaries and access routes for overhead lines	Security street lighting One-amp semi-conductor fuses Full street lighting Five-amp semi-conductor fuses	Household energy metres

Source: After Cotton and Franceys (1994)

in upgrading because it also enables householders to take up residence on virgin sites and commence house construction. Incremental upgrading beyond the primary level can ensue; various options suggested by Cotton and Franceys (1994) are shown in Table 4.3, which can eventually lead to what is commonly described as conventional high service levels.

In implementing upgrading projects, it is important to establish potentially replicable approaches of working in and with low-income communities (Rakodi, 1991b). Because upgrading of infrastructure and basic services in informal settlements cannot, to a sufficient degree, be reached without the participation of the residents themselves in organization, work and financing, it is essential to view shelter as a productive investment in a long-term perspective (UNCHS, 1994c).

The job of retrofitting settlements with water and sewerage networks, and access roads and footpaths can be expensive. Also, it imposes severe costs on certain households that must relocate temporarily or permanently (Hansen and Williams, 1988; Matthews Glenn and Wolfe, 1996). But, Yahya, (1982:51), while acknowledging that substantial capital investment is required in upgrading, holds that "once the funds are available the design and laying of engineering services is a fairly easy task".

The problems that can arise during the implementation of upgrading programmes are such that they cannot readily be foreseen, since they emerge out of the peculiarities of each situation. However, a number of problems, which can be categorized as political, financial, technical and socio-cultural, are likely to arise (Mumtaz, 1982). In some cases, smooth and efficient implementation of upgrading programmes has been greatly impeded by complex bureaucratic procedures (Nuru, 1990).

4.4.5.3 Maintenance⁷⁰

The anticipated life-span of infrastructure elements or buildings requires the provision of some basic regular maintenance during the service period of the facilities. Because of the relatively low quality of construction in most informal settlements, maintenance is even more consequential than in 'high-cost construction'. Maintenance is all the more critical for low-income construction because a majority of poor households cannot afford the replacement cost, should buildings or infrastructure deteriorate to the point of failure (UNCHS, 1996a).

Maintenance of housing and infrastructural facilities is an aspect of projects which must be designed and managed efficiently. Because these project features are often the responsibility of over-burdened and under-funded public agencies, there is potentially a problem of inadequate maintenance. However, since maintenance is frequently dependent upon, and can in turn influence, cost recovery and active community participation, some flexibility does exist for implementing agencies to formulate long-term financial and social solutions for maintenance.⁷¹ Related to this is the issue of maintenance costs. If costs are excessive, whether because of low capital investment or poor design, the benefits can be rapidly dissipated; if design standards are kept irrationally low and do not facilitate maintenance, facilities will decline in quality (Keare and Parris, 1982).

Improved services and facilities in upgraded settlements will bring lasting benefits only if conscientiously operated and maintained (Tayler and Cotton, 1993). In general, the least satisfactory aspect of many upgrading projects completed to date has been inadequate maintenance subsequent to implementation. It is not uncommon in upgraded areas, for instance, for newly constructed water pipes and sewers to leak, drainage channels to leak or become filled in, and footpaths and roads to break up. When flooding occurs and drainage channels are blocked, environmental conditions are little better than before. This is one reason why residents of upgraded settlements commonly feel justified in withholding payment of their betterment

⁷⁰ Upgrading is distinguished from maintenance by its scale (involving major building operations) and its probability of including extension and even complete reconstruction of units (Tipple, 1994a).

⁷¹ For example, KIP expects kampung inhabitants to participate in the operation and maintenance of the infrastructure and facilities constructed during the improvement programme. For certain maintenance works, the whole community has to be involved, but other works can be done individually. The former include cleaning public taps and bath- and washrooms, which can be undertaken by the residents' own labour or by hired hands. The individual tasks include cleaning of drainage ditches and cutting grass along roads adjacent to plots (Suyono, 1983).

taxes (UN, 1989). Consequently, when appraising upgrading options, it is imperative that their operation and maintenance requirements in relation to the available resources and institutional capacities are taken into consideration (Tayler and Cotton, 1993).

4.4.5.4 Community Participation

The notion that people should participate in all phases of the execution of human settlement projects gained acceptance gradually among governments and development agencies with the introduction of site and service schemes and settlement upgrading projects.⁷² In a significant development from procedures in which the community was regarded as the passive recipient of facilities planned and supplied by central government, community participation has progressively gained increasing prominence in development philosophy (IRC, 1985); to the extent that it is "these days considered a panacea for most, if not all human settlement problems" (Lohann and Muller, 1986:25).⁷³

The GSS recommends that communities, represented by CBOs, have a role to play in assisting in the implementation of local authority strategies, especially because local authorities lack sufficient resources for all the tasks they are expected to fulfil. CBOs would be strategically placed to undertake the day-to-day implementation of policies affecting their neighbourhoods, to act as intermediaries between households and the local authority, and with finance agencies (in which role they can act as honest brokers, or as the corporate entity with which proceedings for distraint may be joined), and to encourage groupings of entrepreneurs or artisans who can negotiate for contracts or infrastructure provision and maintenance (UNCHS/ILO, 1995).

Agenda 21 and the Habitat Agenda similarly underline the need for building capacity and enabling communities to improve their living environments, as well as building equal partnerships between communities, CBOs, NGOs and local authorities. Chapter 23 of Agenda 21 underlines that broad public participation in decision-making is a fundamental prerequisite for the achievement of sustainable development.⁷⁴ There is need for individuals, groups and organizations to participate in environmental impact assessment (EIA) procedures and to be cognizant of and participate in decisions,⁷⁵ especially those which potentially affect the communities in which they live and work.

⁷²In light of the high rate of failure of several infrastructure projects in the past, it is accepted that the target population should be involved at all stages of a project, from conception through to design to implementation and operation. Experience from low-income housing projects has demonstrated that involvement of beneficiaries in improvement of human settlements is crucial (UNCHS, 1981; 1984). Planners, certainly, have come to the realization that community participation is essential for successful projects in water and sanitation programmes (IRC, 1985).

⁷³Indeed, community involvement was a central concept in United Nations policy documents prepared for Habitat II (Andreasen, 1996).

⁷⁴The general principle of civic engagement calls for broad participation in development processes from all people, including men, women and children; citizens and non-citizens; regional and ethnic minorities; the business community; NGOs; and government officials and administrators (UNCHS, 1995)

⁷⁵EIA has been, and remains for the time being, a very important environmental planning and management tool—though not always for the reasons one would expect (McDonald and Brown, 1995); but there are a number of constraints on the operationalization of EIAs in sub-Saharan

Community participation, is also frequently stated to be an essential component of upgrading.⁷⁶ Indeed, Alan Turner (1980b:255) emphasizes:

there can be no possibility of successful upgrading if the participation process is not taken seriously. If it is not, there is a danger that the community may be antagonised to the extent that they will refuse to co-operate and may even sabotage the project because they feel threatened.

But Davidson (1987) suggests that "desirable" might be a more appropriate term than "essential", as there is not always a predisposed community organization to work with, and establishing one requires ability and time.

It is evidently true that participation by all groups is essential if the benefits of development are to be accessible to all; and participation can render housing improvements more effective (Edwards, 1990). One of the reasons that upgrading projects are conducive to participatory practices is that they involve already established populations who will often have developed their systems of internal interaction and organization over a long period (Skinner, 1983).

Although many governments have incorporated community participation components into upgrading programmes, not infrequently, participation has been limited. The contributions of local organizations to upgrading schemes vary according to aims and objectives of the participants, the support given by the authorities, and the importance attached to them by the planners and technicians ((Vance, 1987).

The majority of currently popular proposals for enhancing participation are false leads in the context of informal settlements in Kenya. Many simply perpetuate a political economic system in which programmes involving the urban poor are carried out as marginal exercises and experiments of limited impact (Douglass, 1992). The undertaking in our case is, more appropriately, one of empowerment of both owners and tenants in informal settlements by radically enhancing their access to the public domain and the productive resources of society. This being the case, in the vocabulary of Douglass (1992:25), "the key word is legitimization, without which households cannot sustain their collective voice in public affairs and the state can have no 'partners' in development".

Upgrading projects typically involve the introduction of services and new roads, rearrangement of densities, etc. Community organizations, where they exist, can be quite valuable in establishing priorities for action and in mediating between the public authorities and the

Africa countries, including Kenya. These include legislation, institutional framework, cost of EIA, basic data, and public participation (Kakonge and Imevbore, 1993). See also Omara-Ojunga (1992) and Treloar (1992).

⁷⁶ As mentioned in an earlier footnote in this chapter, Syagga *et al.* (1989) identify community participation together with security of tenure as the two essential components of all successful upgrading programmes.

community and among members of the community themselves. When they work well, the savings in public funds and time can be substantial. Their existence can also be deciding in assuring adequate maintenance and the protection of public investments after construction is completed (Doebele, 1987).

Community participation is an end in itself: through community contracts, people are involved in the planning and design of facilities in their own neighbourhoods and participate in the implementation. Such involvement increases the community's responsibility for the state of repair and maintenance of these facilities, ensuring extended economic life (UNCHS/ILO, 1995). Community initiatives should be promoted in minor works in upgrading of informal settlements: for the following reasons noted by Lyby (1992)

- (i) upgrading based on community initiative may be the only way to make something happen;
- (ii) the community contribution would reduce costs to governments; and
- (iii) community-based maintenance of minor works provided by the community itself could be organized.

Though it may sound romantic, the sum and substance of community participation, is eloquently summed up by a community worker cited in Shah (1984:203-4)

if we want to build houses faster and cheaper, instead of depending on centrally organized and professionally managed housing agencies, we should create and activate local organizations. For building materials, instead of searching formal markets and research laboratories, we should activate and tap those innumerable channels through which slum dwellers and poor villagers obtain materials. For the skills, instead of running after professionals, we should put to use the innate building skills of people. And for the financial resources, public funds should be augmented by people's informal resources. The essence of the whole thing is to release the energies of the people and to put to creative use their natural skills and talents. Once this is done, a multitude of options would emerge and the problem would begin to appear to be solvable.

Having said all this, it is important to remember that, irrespective of the arguments,

community participation is no substitute for professional or governmental interventions or for formal planning or design, but an intrinsic part of both processes. And just as when governmental and professional interventions of the wrong kind can distort programs in favour of the needs of those who dominate, so too can community participation. (Hamdi, 1991:86).

Indeed, whether a community can, in fact, contribute meaningfully to the decision-making process, and if community participation is as effectual as professionals would like to believe, or whether only tokenism is achieved, has been questioned. It has been contended that communities seldom have access to or cognizance of all the relevant facts, nor do they have the intellectual capacity to distinguish between alternative strategies and so to select those which optimize opportunities for the future (Zar, 1993). Alternatively, Domicelj (1988:79) holds that it may also be the subject of political manipulation and a potential excuse for inaction.

4.4.6 Gentrification

A number of upgrading programmes have, doubtless, effectively and efficiently enabled low-income households in informal settlements to obtain greatly improved infrastructure and services (Mitlin, 1997). But the evidence from many upgrading projects is that the very improvements introduced into settlement areas have had a marked impact on land values, house prices and rents. Significant increases in utility charges and property taxes have also been noted. In conjunction with the paucity of housing for the lower middle and middle income groups, these phenomena have had a significant effect on the class composition of the settlements, either forcing lower income groups out of the settlements or into increasingly overcrowded rental accommodation within it (Burgess, 1987). Affordability criteria have also been set too high and insufficient account has been taken of speculative investment which can entice poor households to leave upgraded settlements (UNCHS, 1991c).

Where residents of informal settlements live on centrally located private or government land, which is requisitioned or purchased in order to develop a habitable environment, a pressure is set up for future displacement of the beneficiaries by more affluent groups searching for desirable, centrally located homes. This process is known as *gentrification* (Stephens and Harpham, 1991). Gentrification is defined by the Urban Edge (1984:5) as "the process whereby poor people find themselves priced out of the communities they have worked to improve."

The fact that informal settlements are being comprehensively upgraded makes them attractive to higher income groups. As Silas (1983:232) affirms:

improved areas with better infrastructure and more formal tenure arrangements have attracted higher-income groups. Land prices and rents . . . have increased substantially . . . leading to the uprooting of lower-income groups. The poor remain largely unprotected from economic pressures to uproot them from the land and to move them to less accessible or less productive sites.⁷⁷

At the same time, residents may wish to realize their substantially improved asset. Renting or selling one's property may also be a rational response to mounting financial problems (Asthana, 1994; Kool *et al.*, 1989).⁷⁸

Upgrading schemes have thus had the paradoxical effect of harming renters in informal settlements. In settlements with a predominantly tenant population, any improvements may have

⁷⁷According to Harms (1972:79), poor households "forced out of the market" and seeking alternative accommodation have the following options: (i) double up with other households; (ii) move into very dilapidated housing of lower rent; (iii) pay more than 20% to 25% of their income; or (iv) combine any of the three possibilities.

⁷⁸Affirming that one of the dangers of upgrading is that land values will increase and low-income households will sell to higher income newcomers, Rakodi (1987) reports that some householders in Chawama, Lusaka, decided or were forced by necessity, to capitalize on the possibility of realizing the value of self-help housing labour invested in house construction. In Ashok Nagar, Madras, on the other hand, the relatively low density allowed the construction of additional housing stock, thereby enabling owners to benefit from the increase in property values by other means than selling it (Robben, 1987).

the adverse result of raising rents, either because of the increased value of the accommodation or to pay for improvements, thus contributing either to displacement or overcrowding of poorer residents (Macoloo, 1988; Palmer and Patton, 1988; Rakodi, 1995b; Stephens and Harpham, 1991).⁷⁹ In Chaani in Mombasa, which was upgraded as part of the Second Urban Project in Kenya, the obligation of raising funds for housing development within a stipulated period of time compelled some owners to increase rents above the affordability levels of some existing tenants, thereby forcing them to leave the settlement to alternative accommodation (Macoloo, 1994). Not only did Chaani fail to address the needs of the low-income households for whom it was intended; it ended up primarily benefiting higher income groups, including staff from the government agency that was in charge of the project (Magutu, 1997). In some instances, such increases may be resisted, either as matter of policy or by protest or evasion and the wanted improvements are not achieved (Rakodi, 1995b).

Improved services to and valorization of neighbouring sites can become a charge on the people who can least afford them, while the advantages may accrue to people who contribute nothing to the capital expenditure involved. In circumstances when the obligation of financing infrastructure may put adequate housing beyond the reach of those who need it most, considerable care must be taken to design the cost recovery process so that it does not become yet another hidden subsidy of the rich by the poor (UNCHS, 1987).

It may also be considered somewhat inequitable for poorer communities to have to take on responsibility of maintenance in upgrading projects when areas in which the more affluent reside not only receive higher quality public services but also have the influence to ensure that these are maintained by local government or other public agencies (Hardoy and Satterthwaite, 1989; UNCHS, 1996).

However, Gilbert and Varley (1991) maintain that it is not entirely certain that upgrading is detrimental to the interests of existing tenants. They agree that there is unequivocal evidence of rents rising rapidly after service improvements because owners were required to pay for new services and because the improvements attracted more tenants to the settlements (some from more affluent groups). However, they hold that whether this led inevitably to the displacement of existing tenants is not conclusive. Similarly, with reference to the numerous reviews, evaluations and comments on the relative success and failure of upgrading and sites-and-services programmes, van der Linden (1994:223) affirms:

⁷⁹KIP's improvement of infrastructure in Jakarta resulted in plot holders increasing their expenditure on their dwellings. But, not unexpectedly, it also led to rising land prices and higher rentals which has impacted adversely on poor tenant households (Taylor, 1987). In India, upgrading of settlements that have developed on private land is considered questionable since the law does not safeguard against the imposition of higher rents after improvements. Consequently, settlements on private land were excluded from the Environment Improvement and Urban Slums Programme (EIUS) (UNCHS, 1994c).

Although the record is not without ambiguities, on balance legalisation and upgrading of existing [settlements] has met with a degree of success. The much-feared side-effect of displacement, while occurring here and there, did not assume serious proportions in many cases, and in quite a few cases there has been absolutely no question of displacement.

Kool *et al.* (1989) opine that the conclusion by Skinner and his co-editors (1987:243) that "gentrification appears to be the exception rather than the rule" may be over-optimistic, but displacement is evidently by no means the universal impact of upgrading programmes, as some theories would have. Likewise, Nientied and van der Linden (1987) found little to support the gentrification thesis; there were relatively few cases of tenants having to vacate under a degree of compulsion in another study in Karachi.

4.4.6.1 The Rental Issue

Upgrading poses serious difficulties in informal settlements with a predominantly tenant population. Many existing settlements contain a significant proportion of renters who, not uncommonly, constitute the poorest households in an urban area. By definition, many of these will be unable to afford access to new housing projects, at least in the short term. They will consequently depend upon upgrading projects to secure any improvement in their residential circumstances (UNCHS, 1991b).

If the upgrading project entails charges to the owner, as is usually the case, they are likely to be passed on to renters. Even if the costs of improvements are not attributed to plot owners, the problem may still arise because owners may see the rental value of their property as capable of supporting higher rents and greater profits. Also, if upgrading projects generate significantly higher environmental conditions than existed before the project, tenants will be placed in an extremely vulnerable position. The improved environmental conditions will probably make upgraded settlements an expedient of relatively good circumstances in a dilapidated residential milieu. Landlords will, therefore, be able to attract more profitable tenants, thereby displacing former occupants. Indeed, landlords can evict tenants in the knowledge that they can readily find replacements. Thus, in settlements in which the proportion of rental units is high, upgrading may harm the renters while benefiting the landlords. (Doebele, 1983; Earthscan, Edwards, 1982; 1983; Majale, 1993).⁸⁰

Rent legislation does not normally extend to accommodations in informal settlements as they are typically illegal and in contravention of building codes and planning ordinances. However,

⁸⁰This was indeed the case in the Calcutta Metropolitan Development Authority's (CMDA) Bustee Improvement Program where rentals of housing units increased following improvement in services. The core programme comprised of providing access to urban services (water supply, improved sanitation, improved drainage, paved pathways, streetlighting, and community and recreational facilities) in accordance with pre-set standards (Moitra and Samajdar, 1987). In Karachi, rents increased at a higher rate than the official rate of inflation and the increase in incomes between 1979 and 1983, following implementation of the Baldia upgrading programme. The two main components of the programme were granting of tenurial security through issuance of 99-year leases and upgrading of basic infrastructure (Nientied and van der Linden, 1987). On the other hand, tenants living in settlements in Khulna in Bangladesh have been prepared to pay higher rents following upgrading of their services, even though their tenancy status has not changed (UNCHS, 1991c).

Panama's radically innovative rent control measures of 1973, in which a 'grassroots' approach to community organization was adopted, made it possible for legislation to effectively reach even the lowest-income tenant groups in informal settlements (UN, 1979).⁸¹

Thus, it is imperative that upgrading projects assess the proportion of tenant households and their potential for meeting the probable costs of rent increases resulting from different levels of upgrading. The level to which a settlement is upgraded, or the rate at which improvements are implemented, should reflect this (UNCHS, 1991b).

4.4.7 Income-Generation

Multifarious income-generating activities are located in informal settlements. Moreover, certain informal sector activities are typically carried out in and/or around dwellings in informal settlements (UNCHS, 1986a).⁸² Because of their importance in the daily lives of the inhabitants, local income generating activities, in informal settlements should be taken into account in the planning of upgrading projects (Treiger and Faerstein, 1990). Indeed, as Laquian (1983:85) affirms:

If there is one lesson for planners in the massive literature on [informal settlement] community life, it is the finding that housing in these areas is not for home life alone. A house is a production place, market place, entertainment centre, financial institution, and, also, a retreat. A low-income community is the same, only more so. Both the home and the community derive their vitality from this multiplicity of uses. The imposition of artificial restrictions on both, therefore, would only hinder their growth and their development.

The stimulation of employment and income generation is frequently cited as an ancillary justification for intervention projects in the low-income urban sector (Keare, 1983).⁸³ Indeed, improved services in informal settlements as a result of upgrading are likely to generate an increase in entrepreneurial activities (McCallum and David, 1985; Gilbert, 1992). The gradual improvement of infrastructure and services facilitates the start of small-scale manufacturing activities which rely on accessibility and/or availability of water and electricity (Baken *et al.*, 1991). There is need, therefore, for explicit amendments in policies, such as elimination of controls on subletting, to accommodate income-earning opportunities in dwellings following upgrading. Adaptations in provision of infrastructure services (drainage, pathways and access

⁸¹ Similarly, the introduction of rent controls in January 1980 was an almost immediate action of the revolutionary Sandinista government which came to power in Nicaragua in 1979. Some rents were reduced and tenants protected against eviction. Where sanitary services were deficient, tenants could legitimately withhold rent, install services, and present receipts to landlords (Vance, 1987).

⁸² These are mainly vending of daily needs, food preparation, repair services and small-scale manufacturing (UNCHS, 1986a). Non-residential activities in informal settlements are discussed further in Chapter Six.

⁸³ Such projects have promoted this objective in three ways: (i) through the use of hired labour during construction; (ii) through specific employment and entrepreneurial components; (iii) through induced effects. The working hypotheses were that households will be motivated to offer more labour by the opportunity to own a better, more-secure home, and that improvements affecting the project area will draw together households' labour and employment demands (Keare, 1983). Upgrading projects have had a better record of employment and income generation as they have not disrupted the relation between home and place of work of the residents. Conversely, duplication of the market conditions that govern employment and generation in informal settlements in sites and services schemes has been extremely difficult (Laquian, 1983).

roads, electricity) are likewise required so that types and levels of provision reflect the full range of uses (e.g., the need for wider all-weather pathways in densely populated informal settlements to facilitate the movement of goods) (McCallum and Benjamin, 1985).

An important element in income generation is provision of rental accommodation (Rakodi, 1991b). Views differ, however, on the extent to which housing improvement or construction of new dwellings in upgrading can be used to generate income. UNCHS (1993a) affirms that agencies in charge of upgrading programmes have seldom encouraged the development of rental accommodation; but the World Bank has promoted the construction of additional rooms to rent by owner-occupiers. Indeed, evaluation of World Bank projects has found that renting is one of the most effective ways for project beneficiaries to increase their incomes, and is thus a means of keeping projects affordable, especially for participants in the lowest income strata (Keare, 1983). In addition to increasing household incomes and the probability of their keeping up with obligatory loan repayments and service charges, the additional rooms built help meet the demand for inexpensive rental accommodation (Rakodi, 1988).⁸⁴ Such rental housing provides working households increased access to employment opportunities, and the overall level of services per household is usually higher. Although tenants may have lower income levels, "aggregate ability to pay for services is higher", and the potential for cost recovery is consequently high (Stephen Mayo cited in Urban Edge, 1984a:3).

In an analysis of the effects of upgrading on economic activities in an informal settlement in Rio de Janeiro, Treiger and Faerstein (1990) found that, despite tenure not having been completely regularized, households nevertheless improved their dwellings following the installation of basic infrastructure. The enlargement of housing units was related not only to the betterment of the dwelling itself, but also to the possibility of earning (additional) income from rental activity.⁸⁵ There was also an increase in economic activity, which Treiger and Faerstein (1990) conclude cannot be related exclusively to improvement works. But the number of small shops or *biroscas*⁸⁶ unquestionably more than doubled following implementation of the upgrading project.

Programmes to create employment opportunities and generate income in upgrading projects are not, strictly speaking, traditional components of housing programmes, according to Laquian (1983). They have been instituted, however, because of the realization that the problem of

⁸⁴The construction of accommodation for rent was, however, discouraged in Tanzania and Zambia for ideological reasons. In Zambia, it conflicted with the then President's intent to abolish landlordism and to obviate the construction of new rental housing by private individuals (Rakodi, 1988; 1991b).

⁸⁵See also Mehta and Mehta's (1990) conceptual model relating the use and improvement of dwellings for income generation to various factors.

⁸⁶Apart from selling refreshments, food and other commodities, *biroscas* serve as community meeting places often offering recreational facilities, such as televisions, tables for billiards, cards or other games. The *biroscas* range from the most rudimentary types accommodated in a corner of a dwelling and selling only refreshment or alcoholic drinks to a fairly large number of people offering a variety of both goods and recreation. These small-scale independent producers, operating in the settlements, create a circuit in which the poor producers sell to poor consumers (Treiger, 1991; Treiger and Faerstein, 1990).

housing the urban poor does not involve housing alone—housing is typically a function of people's poverty and if such poverty can be alleviated, housing would probably improve. But programmes to enhance employment and income have not met with much success. This is partly attributable to the inexperience and incomprehension on the part of the housing authorities in the management of such programmes. Evaluations have shown that programmes have tended to be academic, formalized, bureaucratic, overorganized, and irrelevant to the actual situation in informal settlements.

4.4.8 NGOs' Involvement in Settlement Upgrading

A major factor in the success of upgrading projects has been the involvement of NGOs. The commitment and accountability to local communities, in addition to the innovation and high degree of professionalism which most NGOs manifest, place them in an optimal position to act as intermediaries between public authorities and communities (UNCHS, 1991b; 1991c). As UNCHS (1996a:428) affirms:

NGOs' capacity to work with low-income groups in participatory ways to improve shelter and provide or improve services, to negotiate with governments and donors for funds and to develop the alliances and networks which promote political change (very often with federations or coalitions of community-based organizations) gives them an important role within new models of urban development.⁸⁷

Many NGOs have a natural interest in micro-policy reforms supportive of people-centred development, perceive development as primarily a people-to-people process, and are not impeded by the inherent structural constraints faced by the large donors. They can thus be particularly useful in mobilizing communities which may otherwise not know how to organize themselves. Such NGOs can help the benefits of upgrading interventions to reach a higher number of potential beneficiaries in upgrading projects (Choguill, 1996; Hamdi, 1991; Korten, 1987). However, UNCHS (1993a) notes that, unfortunately, there are few examples of NGOs having engaged in activities to develop rental housing.

The major value of NGOs lies in the "leverage" they are able to exert over various aspects of the shelter process, multiplying the impact of community efforts and disseminating successful experiences (UNCHS, 1991c:44). But while this is undoubtedly true, a serious problem with NGOs is that they perform laudably on a one-off project basis, but frequently encounter difficulties in the sustainment of their efforts over a series of projects (Choguill, 1996). Indeed, NGOs have found it notoriously hard to scale-up their efforts and innovations beyond the level of a single neighbourhood, though there are one or two exceptions to this rule (UNCHS, 1991c).

⁸⁷NGOs are among the strongest advocates of participatory practice in housing development. In recent years, a wide range of such organizations have been involved in various (experimental) projects throughout the South. Despite a common thread binding them all—confidence in people and participation as a means of change—NGOs differ considerable in philosophy, approach and method of work (Shah, 1984).

Moreover, NGOs in the South commonly suffer acute lack of funds to develop and sustain programmes of research, monitoring and lobbying (Hardoy and Satterthwaite, 1989).

4.4.9 Weakness in Terms of Sustainability

The two most serious difficulties with upgrading programmes are, perhaps, how to sustain the initial impetus and how to expand them to the point where they reach all or most of those in need (UNCHS, 1996a).

Upgrading seeks to compensate a lack of past investment in basic infrastructure and services. In effect, a series of basic investments which should have been made on a continuous basis by public agencies are made instantaneously. While it may initially improve conditions considerably, only infrequently does it increase public agencies capacities to maintain the new infrastructure and services and to continue with the process of upgrading. Hence, upgrading only temporarily makes up for a failure in local government's investment and implementation capacity—the basic institutional deficiency is not eliminated (Hardoy and Satterthwaite, 1989; UNCHS, 1996a). Alternatively, Shankland Cox (1977) contend that upgrading is essentially a holding operation—it can never add to the housing stock. And Angel and his co-editors (1983a:5-6) assert:

improvement [programmes], more directly aimed at the poor, have in many cases proven to be superficial measures of no lasting significance. [Settlements] are improved, services are installed, but their temporary nature continues to be underlined.

Still, as Martin (1983) observes, irrespective of whether upgrading projects are regarded as permanent, or just vicarious measures, they have been implemented on an increasingly wide scale, to the extent that the 1970s witnessed an almost universal course towards upgrading.

The Kampung Improvement Programme (KIP) in Indonesia remains one of the most successful government initiatives to improve housing and living conditions of the urban poor. In fact, it has more than fulfilled its original objectives and expectations (Keare, 1983; Suyono, 1983). KIP was conceived as a partnership with the local community rather than a public works programme, with the *kampung* residents involved in the decision-making process. Unlike in many other cases, the improvements made in water supply, drainage and other aspects have been sustained. Community organizations and households have made significant contributions not only to maintenance, but also further investments (UNCHS, 1996a).

4.4.10 Implementation of Upgrading

Upgrading programmes and projects have institutional or bureaucratic consequences. Frequently undesigned, these result mainly from the demands that new upgrading procedures (e.g., reformulated building regulations, innovative credit mechanisms, the right of residents to

consultation) impose on existing institutional structures. Such courses require institutional accommodation rather than radical change. However, in some cases, change is sought. Typically, this takes the form of a new agency that is established to carry out upgrading activities, either within an existing organization or as a separate unit. Its end is to make upgrading as efficient as possible; after implementation the unit loses its *raison d'être* and is commonly left to disintegrate. The impact of such an institution on the old structure is clearly temporary. In some cases, however, institutional change is designed to be more fundamental and permanent (Skinner *et al.*, 1987).

4.4.11 Implications of Settlement Upgrading

Despite criticism that projects have often been overplanned, that their rate of cost recovery has been poor, that they have failed to reverse the trend of illegal occupations—indeed in some cases have encouraged it, and that they tend to serve the most able, physically and politically, and the most enterprising, the implications of settlement upgrading have been profound. All of the instruments of town planning, all of the established standards for design, and all of the established work habits of architects, planners and engineers have been brought to question and challenged (Hamdi, 1991).

4.4.12 Arguments against Upgrading

As mentioned in the previous chapter, unless poverty is eliminated, the elimination of informal settlements in urban areas in the South will remain an achievable goal. Realism suggests that informal settlements should consistently form part of the deliberations of planners and policymakers. The institution of conditions supportive of human dignity and safety in informal settlements should be accorded high priority. The evasion of issues related to residents of informal settlements, their needs, and their impact on urban areas may result in insurmountable problems in the future. But McKee (1994) contends that it may be ill-advised to provide for settlement upgrading with the intention of removing them from the informal settlement category. Such an objective, if realized, might well ensure that improving settlements would be supplanted by others as bad or worse, which would create further dilemmas for the planners and policymakers.⁸⁸ Also, upgrading may result in an inopportune revision of government priorities which may well impede overall efforts at developmental planning (McKee, 1994).⁸⁹

There are other arguments against upgrading. The urban poor often occupy prime locations in Southern cities. And, in a number of cases, informal settlements are clearly against the interests

⁸⁸Burgess (1978:1128), arguing against attempts to improve housing activities in the Turner fashion, similarly asserts that "any significant improvement in the low-income housing situation would lead immediately to a quickening of the rate of rural-urban migration and, given the diminishing supply of rental housing for low-income groups, these deficits would quickly reappear."

⁸⁹The present author noted with interest that McKee (1994) does not list any of the works of Abrams, Mangin or John Turner—almost invariably cited in discussions of informal settlements and upgrading in the South—in his bibliography.

of the populace in general, and undermine the rule of law often. Granting residents secure tenure and other inputs may create political, economic and social pressures on individual communities which become 'islands' of legalized improvement. Policymakers may also find regularization of tenure rather unattractive for fear that it will encourage rural-urban migration, large scale invasions of vacant land and further illegal settlement. Moreover, regularization means the legalization of an illegal situation, namely the occupation of someone else's property, and politically powerful public and private landowners tend to strongly oppose the idea, as they consider property rights sacrosanct (O'Conner, 1983; Yap, 1989; Zetter, 1984).

4.5 Settlement Upgrading in Kenya

During the 1950s and 1960s, the housing problem was perceived largely as a financial problem of adjusting standards, costs and subsidies to enable houses to be built at affordable costs. However, as population growth rates increased, and rural-urban migration accelerated, it became evident that policies of subsidizing urban housing were incapable of satisfying demand either in terms of rate of supply or cost for three main but inter-related reasons: lack of resources; the low priority accorded to housing provision, and poor administrative responses largely derived from an induced conservatism and reluctance to explore new solutions. The fact that these policies were ineffectual was patently manifested by the proliferation of informal settlements (Haywood, 1986).

4.5.1 Official Responses to Informal Settlements

The advent of political independence in 1963 meant that the onus of employment, infrastructure, housing and social services for the urban poor was transferred to a new breed of politicians and administrators who replaced the British colonial authorities. Their initial response was the continuation of policies that had existed in the preceding colonial era, including the construction of family-type dwellings utilizing permanent building materials. Their response towards squatters in Nairobi, where the issue of urban low-income informal settlements first arose, was non-recognition and denial of their existence (Ross, 1973).

However, the public, influenced by prominent politicians, including the President, developed the attitude that squatters and the other unemployed groups should "go back to the land" (Ross, (1973:92) and contribute to economic development through their agricultural abilities. This, of course, presupposed they had land to return to—an assumption which was usually unfounded. At the same time, the Government apparently adopted a dual policy towards squatters in Nairobi, permitting them to remain in certain locations, but forcibly evicting them from others. In point of fact, some settlements, most notably Mathare Valley, enjoyed tacit political patronage. Thus, between 1969 and 1971, a total of 10,000 rental rooms were constructed of semi-permanent materials in Mathare Valley, while the Nairobi City Council is recorded to have demolished 49

informal settlements containing 7,000 dwelling units and housing over 40,000 people in 1970 (Gatabaki-Kamau, 1995). In 1971, water standpipes were installed within five days in Mathare Valley and Kibera following an outbreak of cholera. Although this action was quite obviously of a fundamentally self-centred nature, the installation of infrastructure was the first example of a policy of limited acceptance. But small inner-city sites without the benefit of political patronage, continued to be eradicated.⁹⁰ A commissioner for squatters was appointed who, with the chief administrative officer of the central government (the district commissioner) was responsible for containing and regulating squatter settlements (Amis, 1990; Ross, 1973).

At the same time, the Nairobi City Council, charged with the responsibility of constructing and administering most of the public housing in the city, soon realized that the gap between the housing demand and its ability to supply adequate dwellings was increasing annually. Hence the Council began to pursue alternatives to the costly public housing. The earliest experimental endeavour was the Kariobangi 'sites-and-services' scheme. The Council installed water points, latrines and roads, and then rented out plots to householders who were obliged to live in the scheme. Many renters were squatters who had been displaced from sites nearer the city centre. Each plot was large enough to accommodate the construction of a 4-roomed dwelling; typically the allottees lived in one room and rented out the others. Within a short period of time, mud-and-wattle houses had been erected on virtually all plots, and were later replaced by dwellings built with conventional building materials. By 1970, the area clearly demonstrated that the Government could help direct the development of urban housing without having to pay its entire cost (Ross, 1973).

Just as the Government has formulated policies and strategies in response to the proliferation of informal settlements, so have local authorities, in particular Nairobi City Council, adopted diverse strategies directed to cope with the rapid growth of the private low-income housing market over the years. These include the following outlined by Morrison (1974):

- Demolition to eliminate small and relatively unimportant settlement areas.
- Improvement of existing settlements through the provision of infrastructure and planning assistance; demarcation of plots; and access to credit for house owners wanting to improve or replace their dwellings. Being heavily reliant on self-help, these schemes have been difficult to implement.
- Provision of sites and services. However, despite being extensively planned and heavily subsidized, these projects have experienced serious technical and political problems.

⁹⁰In this context, between 1969 and 1978, the Nairobi River Valley site was demolished at least five times. The most dramatic demolition occurred in 1977 when the entire site was obliterated and approximately 10,000 inhabitants were moved to form the nucleus of the newest large informal settlement, Korogocho (Amis, 1990).

- Control of house construction and settlement development. Individuals and groups engaged in low-income housing construction are given assistance in designing, building and financing their developments. The role of the government is limited to that of supervisor while actual construction is left to the private entrepreneur.⁹¹

The last strategy, as noted by Morrison (1974), affords the greatest potential for low-income housing provision at the rate and cost demanded at the time. By transferring the onus of actual house construction to the profit-motivated private-entrepreneur, local authorities may, in the long run, circumvent many of the delays and frustrations that plague their own housing projects.

In Nairobi, the official response to the problems created by unauthorized urban expansion in Dagoretti in the 1960s was to call for a freeze on all development in the area until a comprehensive development plan could be prepared and to demolish all buildings that did not comply with the appropriate by-laws and zoning ordinances. Implementation of such an approach, however, proved unviable owing to its total lack of political acceptability locally and its financial infeasibility. Thus, in the early 1970s, the Council sought to formulate and implement a more broadly based, positively oriented and sympathetic policy. This came about largely as a realization of two factors following the experience of redevelopment policies for informal settlements advocated earlier (Memon, 1982):

- that, in the final analysis, the only solution to the planning problems being created by growth of spontaneous, uncontrolled low-income settlements was to raise the income levels of the inhabitants resident in such settlements through creation of employment opportunities; and
- that public agencies lacked the resources to achieve the goal of providing suitable shelter for all low-income households, but private sector investment was capable of making a valuable and urgently needed contribution towards meeting the demand for low-income housing.

The evolution of official attitudes toward informal settlements can also be traced in pronouncements in Kenya's first Housing Policy Document, Sessional Paper Number 5 of 1966/67 (RoK, 1966) and subsequent National Development Plans (RoK, 1964; 1970; 1974; 1979; 1984; 1989; 1994; 1997).

The 1970-1974 Development Plan, in particular, signalled a revised point of view and a change in attitude of housing administrators, as well as a definite move towards acceptance by the Government of the inevitability of informal settlements, in that it recognized that:

⁹¹This negates UNCHS's (1996:342) assertion that: "Kenya signalled its move away from state-dominated shelter policies to the enabling approach with a 'Sessional Paper' on housing in 1986..."

If no alternatives are available, the lowest income families will build temporary houses they need anyway, as witnessed by the existence of large and expanding illegal squatter areas near the urban centres. (RoK, 1970:519)

A number of truisms regarding upgrading interventions in informal settlements in Kenya have been noted (Memon, 1982:158):

- ... policy innovations designed to achieve progressive improvements in environmental conditions in low-income settlements appear more realistic compared to previously advocated solutions based on demolition and comprehensive redevelopment.
- Designation of local improvement areas and preparation of environment improvement proposals in consultation with local community leaders will help to harness resources and skills already existing within the settlement and also ensure that those social and physical characteristics considered desirable by the local inhabitants are retained.
- The eventual degree of success of policies and programmes of upgrading and improvement, however, will have to be assessed with reference to the social, economic and physical impacts of these on the residents of the low-income settlements, the urban poor.⁹²

4.5.2 NGOs' Involvement in Settlement Upgrading in Kenya

The NGO sector, concerned with the plight of the urban poor in Kenya, has been helping poor communities in informal settlements to improve their living conditions. The wide range of activities in which the NGOs have been actively involved include shelter provision, water and sanitation improvement, solid waste disposal, health, education and training, and small enterprises (Agevi, 1995; Kinuthia, 1993; MDC, 1993).⁹³

Kinuthia (1993) asserts that NGOs play a significant role in the improvement of low-income housing. She attributes the success of most NGOs to their "willingness to overcome their biases and assumptions about the poor" (Kinuthia, 1993:257). She maintains that they have a good understanding of the lives of those they seek to assist because:

NGOs are able to penetrate deep into the communities with whom they work, understand them, and shape development according to the need of the people. (Kinuthia, 1993:257)

⁹²Memon (1982) adds that a key question that needs to be asked is whether it is probable that the environmental improvements and provision of better employment opportunities in informal settlements will lead to higher rents and thus displace the existing low income tenants,

⁹³See MDC's (1993) inventory of Nairobi's informal settlements for a listing (by type and service provided) of NGOs involved in informal settlements in Nairobi. See also Kinuthia (1993) for a more detailed discussion of the activities of NGOs in two of Nairobi's informal settlements, and Wegelin-Schuringa and Kodo (1997). In addition, the Catholic Diocese in Nakuru has been resettling elderly people living in informal settlements in Nakuru (Ngumbi, 1996). Elderly households without adequate pensions and dependent on irregular or non-existent support from their offspring are included in Rakodi's (1995a) listing of households in poverty or more vulnerable to impoverishment.

4.6 Summary

Settlement upgrading has been distinguished as a prime means of improving the housing conditions of the poor. Moreover, the higher priority that upgrading has been accorded and the development of novel approaches to upgrading has been recognized as one of the most important innovations in housing policy in the South over the last 10-15 years. The range of upgrading programmes and projects that have been implemented in the South is considerable, but experience and comparative evidence from several countries point to a number of cardinal issues that need to be addressed.

In Kenya, however, settlement upgrading has yet to be adopted widely as a strategy for bettering the residential circumstances of the urban poor compelled to live in informal settlements. A limited number of informal settlements in secondary towns in Kenya were upgraded under the auspices of the World-Bank funded Third Urban Project in Kenya. In Chapters Six and Seven, through a comparative study of two *majengos* (one of the settlement types in the classification of informal settlements in Kenya propounded in the previous chapter) we shall examine whether the housing and environmental conditions in one of the settlements which has been upgraded have improved.

Chapter Five

RESEARCH DESIGN AND METHODOLOGY

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5.1 Introduction

The intent of this chapter is to offer a comprehensive and systematic explanation of the course followed in the present study. The chapter aims to elucidate the thinking underlying the overall research design and structure, and to rationalize the methodological approach and execution of the study. Hence, the consequence of the literature review to the present thesis is expounded; the case for methodological integration is argued; the selection of the research locations is clarified; the questionnaire design, measurement practices and sampling approach are described; the appointment of research assistants and questionnaire administration is explained; and, lastly, data collection, data analysis and data presentation procedures and techniques are elaborated.

5.2 Literature Review

A common point of departure for any empirical research or scholastic thesis is a conscientious survey of pertinent literature and existing studies (Hakim, 1987). Indeed, Sayer (1984:19) affirms that:

To develop 'knowledge' we need raw materials and tools on which and with which we can work. These are linguistic, conceptual and cultural as well as material. In trying to understand the world, we use existing knowledge and skills, drawn from whatever cultural resources are available, to work upon other 'raw' materials - knowledge in the form of data, pre-existing arguments, information or whatever. It is only by this activity, this process, that knowledge is reproduced or transformed: it is never created out of nothing.

The primary goal to be realized in the literature review is developing a knowledge and understanding of the previous work or activity in regard to the topic being researched. A perusal of related literature establishes evidence for the significance of the study for practice and policy, and as a contribution to knowledge. It addresses the important need to inform the researcher as to the main findings, trends, areas of debate or controversy, areas of neglect, and suggestions for additional research. It also defines and delimits the key intellectual traditions that direct the study, thereby developing a conceptual framework and defining significant and viable research questions. The literature review also enables a researcher to acquire an adequate grasp of the theories and methods of analysis in the field of enquiry and strengthens background knowledge. It usually further provides a broad conspectus of what primary sources are available and have been used by previous researchers (Adams and Schvaneveldt, 1991; ESRC, n.d.; Marshall and Rossman, 1995).

Substantial cognizance of what literary and related research work has been accomplished in the field of inquiry is thus imperative before a novel contribution can be adequately planned. A conscientious literature search was embarked upon at the conception stage of the thesis during the composition of the research proposal, in the knowledge that:

A literature review is not simply a passive assessment of the state of knowledge, but an active synthesis of that knowledge within the context of the investigator's particular interests. In this sense, it goes beyond the reflexive idea and becomes developmental. There is no right way in which a given literature review must be done: procedures must vary with the interests of the investigator and the context of the research situation. (Phillips, 1976:11)

The literature review involved a careful inspection of abstracts and other guides to relevant research that has been conducted or is in progress; a systematic review of journals and reports of import; a diligent perusal of texts and monographs germane to the subject of interest; and the compilation of an extensive bibliography. Several online publications which were available on the Internet were also referred to. The literature survey was instrumental in the theoretical and methodological preparation for the study, as well as in the formulation of the conceptual and contextual frameworks of the thesis. It provided a frame of reference for establishing the importance of the study, as well as a benchmark for comparing the findings of the study with other findings (Creswell, 1994). It was also all-important in establishing the significance of the research for policy and practice. The literature review was, unequivocally, a protracted exercise which lasted almost the entire duration of the study. The present dissertation was, to a considerable extent, contingent upon the extensive literature review, in addition to the collection and analysis of the field survey data. In point of fact, these were the paramount obligations in the study.

5.3 Research Design, Methodology and Execution

Survey literature abounds with portentous conclusions based on faulty inferences from insufficient evidence incorrectly compiled and misguidedly collected. Aware of this, the survey was intended to provide accurate answers to the questions at issue; to avoid the accumulation of nonessential data; and to avoid inefficient use of resources, including manpower, finance and time (Moser and Kalton, 1971; Oppenheim, 1966:4). The design of the survey aimed at "precision, logic-tightness, and efficiency" (Oppenheim, 1966:4). But at the same time, the surveys were viewed as a useful way of exploring the field, and of collecting data *around* as well as directly *on* the subject of study, so that the problem could be brought into perspective and points worth pursuing identified (Moser and Kalton, 1971, italics theirs).

5.3.1 Research Design

Expositions on research methods customarily give the impression that they are universal. Whereas this is may be a convenient assumption for authors of the methodology texts and for lecturers in the subject area, it is a long way from actuality (Peil, 1993). Furthermore, as Miles and Huberman (1984: 251) observe:

Many methodological texts are heavy on theory, with bland examples that always seem to work out clearly, even effortlessly. Yet when one actually comes to grips with collecting and analyzing real life data, things

seldom work out that way. Research-in-use is almost always intractable, disjointed and perverse than research in theory . . .

Even for experienced researchers, it is "a messy and chaotic business" (Hakim, 1987:157).

Research design decisions are dependent upon a number of factors, including the purposes of the study, the nature of the problem, and the alternatives appropriate for its investigation. Once the purposes have been stipulated, the study should have explicit scope and direction, and attention can then be focused on a delimited target area. The nature of the problem, therefore, plays a paramount role in determining what approaches are appropriate (Isaac and Michael, 1981). 'Contextual' and 'methodological' considerations should be examined together, not as two distinct categories in which the first impedes the pursuit of the second (Devereux and Hoddinott, 1992a:xii)

The development of sampling theory and techniques in the early part of the twentieth century has resulted in the sample survey becoming one of the most extensively used methods of data collection in social research.¹ The ad hoc sample survey offers a multi-purpose research design with several advantages for both theoretical and policy research. Surveys are multi-purpose in that the design can be adapted to all but a few social science research topics. The survey design can also be used to study not only individuals but also social roles and networks and organizations (Hakim, 1987).

In emulating the physical sciences, social science endeavours to develop a theoretical and methodological perspective to analyse issues; to be as 'objective' as possible in its analysis and in the approach of the researcher; and to quantify, as much as possible, the outputs of policies and projects. However, in the social sciences, the scope for quasi-experiments, and more especially controlled trials and scientific experiments, is far more limited than in the physical and biological sciences. It is a lot more difficult to alter one variable in order to observe its impact whilst holding all the other variables constant in the social sciences (Willis and Tipple, 1991). Thus, quasi-experiments in the social sciences are conducted by finding some counterfactual position against which to evaluate the situation under investigation; that is:

to compare the situation *with* the policy or project to that which would occur *without* the policy or project. In this way the *net* impact of the policy or project can be determined (Willis and Tipple, 1991:9, italics theirs).

The most common research design used in the social sciences is the cross-sectional (or correlational) design. This approach involves collecting measures from at least two samples at

¹ A principal attraction of the sample survey design, both for theoretical and policy research, is its "*transparency or accountability*—the fact that methods and procedures can be made visible and accessible to other parties" (Hakim, 1987:48). The deposit of a copies of the present thesis in university libraries and with the Office of the President will increase the accountability further by making the documentation available for re-analysis by others, who could become 'auditors' of the work (Hakim, 1987:48).

one point in time and comparing the extent to which the two differ on the dependent variable. The cross-sectional design does not have a time dimension and thus cannot be employed to help look at causal influences. Instead it attempts to simulate this by the statistical elimination of the two groups at a second point in time. The assumption is that if the two groups can be matched in all respects except on the experimental variable, then any differences in the dependent variable must be due to the experimental variable (de Vaus, 1990).

5.3.1.1 Quantitative versus Qualitative Research?

There has been considerable debate about quantitative and qualitative research in the social sciences, in particular about the relative merits and disadvantages of the two styles of inquiry. The former is typically taken to be exemplified by the social survey and by experimental investigations, while the latter tends to be associated with unstructured in-depth interviewing and participant observation. Quantitative and qualitative research are each associated with distinctive research strategies and methods of data collection, but their differences are not as lucid as some of the more programmatic statements suggest (Bryman, 1988). In this respect, Burgoyne (1994:189) asserts:

It can be argued that too much is made of the quantitative/qualitative distinction: both words and numbers are kinds of language, and ones that are often mixed and indeed need each other—pure qualitative or quantitative statements are difficult to achieve!

On the basis of their own experience, Devereux and Hoddinott (1992c:35) assert that "fieldwork necessarily involves the acquisition of both quantitative and qualitative data", and have found it useful to ask 'Why?' as well as 'What' and 'How many?' in diverse contexts. However, they also point out that the need to find the right balance between 'numerical' (quantitative) and 'anecdotal' (qualitative) data—an issue which is rarely considered by texts or courses on fieldwork methodology.

5.3.1.2 Methodological Integration

The past few decades have witnessed a growing recognition of the need to merge two or more research methodologies in the same study (Warwick, 1993). In the course of critically examining their the epistemological foundations of their data sources, many researchers have come to appreciate the limitations of single sources of data.

Different research strategies are 'ideal types' which are frequently used together in a research project.² Indeed, the position taken in the reference work edited by Bulmer and Warwick (1993), which specifically addresses the problems of conducting social research in the South, is that:

²The quality of results obtained from a project obviously depends decisively on the competence, experience, interest and commitment of those who conduct the research. For example, all the merits of the sample survey are implicated or potentially lost if the survey agency is disorganized, makes critical mistakes, disregards significant details of sampling, etc. (Hakim, 1987).

different research methods are not alternatives to be chosen between on *a priori* grounds, but methods which are more or less appropriate to particular problems. In total, different methods are *complementary* to each other rather than in competition . . . (Bulmer, 1993a:10, his italics)

The kind of methods that are employed in an investigation, therefore, do not depend upon the superiority of one method over another, but upon the research problem that is posed by the investigator (Burgess, 1986). Not only must apposite methods be selected for collection of the data; the methods must also be adapted to the sources of data (Peil, 1993). Hence, "[we should] get on with the business of attacking our problems with the widest array of conceptual and methodological tools that we possess and they demand" (Trow, 1957:35 cited in Burgess, 1986:182-83). Indeed:

The human reality must be apprehended by a variety of viewpoints, not by one alone, because this very reality is in part a construct, always in part an image, and only by encouraging difference in perspective and approach can one obtain the needed richness of imagery, and consequently, theory. (Bennet and Thaiss, 1967:307 cited in Warwick, 1993:275)

A collaborative research programme which aimed to study social change in rural Peru and involved the use of several research methods (Whyte and Alberti, 1993) provides conclusive evidence that methodological integration is not only possible but productive.

Ward (1993) maintains that it could be in order to adopt some form of conscientiously selected purposive survey design where the investigator selects the target groups and problems in which there is policy interest. This involves going straight to the crux of the matter, using supporting evidence and information to guide the direction of enquiries. Although probability sampling is still considered to be the fundamental tool in survey procedures, it is nevertheless possible to make more selective choices using qualitative in-depth surveys. This approach is arrived at not by way of default, but simply because it possesses intrinsic merit. It can also be employed in conjunction with existing conventional methods.

Purpose-designed inquiries, especially sample surveys, can in principle contribute significantly to the process of data collection in the South. They are, in particular, superior to data from administrative sources in cases where the sole purpose is research and investigation, as they are not by-products of administrative or bureaucratic processes (Bulmer, 1993a).

Among the various of methodologies that the present researcher determined to use, the most important is the quasi-experimental design. In this approach, households living in Bondeni, which has been upgraded, were regarded as the "experimental group", whereas the sample of households living in Swahili Village, where no upgrading interventions have been implemented, was the "control group." Particular interest was focused on the appraisive environmental

perceptions and cognitions of householders in the two tenure strata in the two *majengos*, and on their levels of satisfaction with the infrastructure to which they have access.

The research methodology adopted in the present study, however, like 'stakeholder analysis' (Burgoyne, 1994),³ does not claim a grand, unique or particularly coherent base in a specific epistemological and ontological world-view.

5.4 Selection Of Research Locations

In line with a number of qualitative research traditions, the present study assumes that systematic inquiry must occur in a natural setting rather than an artificially constrained one (Marshall and Rossman, 1995). The ideal research location, as described by Marshall and Rossman (1995) is where (i) entry is possible; (ii) there is a high probability that a rich amalgamation of the processes, people, interactions, and structures of interest are present; (iii) the researcher is likely to be able to develop a rapport with the participants in the study; and (iv) data quality and credibility of the study are reasonable assumed. This ideal, however, is seldom attained—as was the case in the present study.

Robert Burgess (1984) also affirms that selection of research sites is more complex than might at first appear. He cites several criteria that can be identified in selection of research sites, but are seldom fulfilled, thereby necessitating some compromise depending on the substantive and theoretical interests of the researcher and the constraints on their work. These include, simplicity (a site that allows researchers to move from studying simple to more complex situations); accessibility (the degree of access and entry given to researchers); unobtrusiveness (situations that allow researchers to take an unobtrusive role); permissibility (situations that allow researchers free or limited or restricted entry); and participation (the possibility for researchers to participate in various ongoing activities).

Hence, it is not uncommon for researchers not to be concerned about whether a site is 'typical' or 'representative' because of the focus of their studies. Research sites may be selected where the situation is convenient for the researcher, where there is ease of access, where individuals are willing to cooperate, or where the researcher already has some contacts established (Burgess, 1984). Conversely, in some cases (e.g., Olsen, 1992), selection of research sites has been quite arbitrary!

³ Burgoyne's (1994) treatise, which locates stakeholder analysis in the spectrum and history of research methods, describes it as a broad organizing principal for research, with which it is possible, indeed necessary, to use the more tactical research methods (e.g., questionnaire, direct observation of behaviour). From the theoretical point of view, 'stakeholders' are of interest because their needs, wants, desires, conceptualizations and perspectives are different. Generally, a stakeholder is "any interest affected by or affecting the phenomenon" (Burgoyne, 1994:191). In the context of policy research, 'stakeholders' is used to refer to the various parties who are affected by policy decisions, whose interest are at stake when changes are proposed (Hakim, 1987). In the present study, the stakeholders are the residents in the two *majengos* (both owner and tenants households), and the phenomenon under investigation is settlements upgrading.

Most studies in the social sciences focus on a single location, but the strongest designs involve comparative studies (Hakim, 1987:67). Swahili Village in Machakos and Bondeni in Nakuru (see Figure 6.1) were selected for study primarily for two reasons. Firstly, they are both *majengos* (see Figure 3.6b)—which though not representative of all informal settlements in Kenya are one of the six main typologies of informal settlements distinguished in this thesis for purposes of classificatory analysis (see Chapter 3.10.1). Secondly, they maximized comparability and allowed access to a wide range of perspectives. The two settlements were established at around the same time in two of Kenya's secondary towns: Nakuru and Machakos, ranked fourth and fifth respectively in size in the urban hierarchy. Although the towns in which the two *majengos* are located differ in many respects (e.g. geographic location, population and population growth rates,⁴ degree of urban and industrial development, etc.), the two settlements are also similar or at least comparable in many ways. These include their origins (colonial influences; economic forces and urban growth); settlement trends (unauthorized extensions); current environmental and settlement problems; demographic composition; socio-political cultures; and a comparatively large proportion of owners living within the settlement. The sites were selected for comparability along these dimensions.

However, more significantly, the *majengo* in Machakos, Swahili Village, has not been upgraded while the one in Nakuru, Bondeni, is one of the few informal settlements in Kenya which has been formally upgraded, and this as part of the World Bank-funded Third Urban Project in Kenya.⁵ This constituted a fundamental basis for their selection as research settings for the present study. Choice of sites was also planned around practical issues including the researcher's and research assistants' ease, and access to a range of sub-groups and situations (Marshall and Rossman, 1995).

5.5 Questionnaire Design

Manifold approaches can be used to collect survey data. While the methodology used for data collection varies with the field of study, training and inclination of the researcher, the utility of various methods will also be affected by the situation in which the research is taking place (Peil, 1993). The data can be collected by observation, informal and in-depth interviews, content analysis, questionnaire or by a range of other techniques. The most widely used technique is the questionnaire, which represents a highly structured data collection technique. It is a means of obtaining a large number of quantitative data relatively quickly, in a form amenable to relatively rapid analysis (Devereux and Hoddinott, 1992c). The extensive usage of questionnaires as the main device in collecting data testifies to their utility, their flexibility, and the degree to which

⁴ Findings from the 1989 Population Census indicate that Machakos and Nakuru have populations of 116,293 and 163,927 respectively. The 1979-1989 inter-censal growth rate in Machakos was 3.21% compared with 5.68% in Nakuru (RoK, 1994).

⁵ See Syagga *et al.* (1989) for a comprehensive summary of the project components of the Third Urban Project in Kenya. See also section 3.

they are believed to be the best method for data collection.⁶ If not, the questionnaire has become so conventionalized that researchers do not pursue the use of either better or more creative alternatives (Adams and Schvaneveldt, 1991). Questionnaires were considered apropos for use in the present research precisely because of their utility and flexibility.

The design of questionnaires, according to Moser and Kalton (1971), is perhaps the most substantial task in the planning of surveys. Practitioners have "their experience, **common sense** and certain general principles to aid them, but they cannot rely on theoretical guidance in the same sense as they can in sampling decisions (Moser and Kalton, 1971:45, emphasis mine): "Questionnaire design cannot be taught from books; every investigation presents new and different problems (Oppenheim, 1966:vii). Still, decisions on the content and scope of the questionnaire, question sequences and question types, etc., have to be taken, however non-theoretical the basis (Moser and Kalton, 1971).

Various approaches can be used in the development of initial indicators for questionnaire research. This can be expedient in building up a cumulative body of knowledge, rather than each individual conducting their own idiosyncratic research with idiosyncratic measures. The use of well-established indicators is advantageous as it facilitates comparison of results with those of other researchers (de Vaus, 1990). For purposes of this study, several measures developed in previous research were referred to. These were evaluated and adapted accordingly to fit the context of the study⁷. Informal knowledge and personal experience, however, also played a significant role in the design of survey questions (Converse and Presser, 1986).

The goal of standardized measurement is pivotal to survey research. It was, thus, essential to keep the wording of questions constant across respondents as far as possible. But, as affirmed by Converse and Presser (1986:31): "even the same question sometimes means different things to different people." Recent research indicates that this is especially likely with general questions—the more general the question the wider the range of possible interpretations. Hence, questions were formulated that were intended to be clear and straightforward in four respects: simple language, common concepts, manageable tasks, and widespread information (Converse and Presser, 1986). A conscientious effort was also made to avoid the following problem with questionnaire design observed by Sheatsley (1983:200, cited in Converse and Presser, 1986:10):

Because questionnaires are usually written by educated persons who have a special interest in and understanding of the topic of their inquiry, and because these people usually consult with other educated and concerned persons, it is much more common for questionnaires to be overwritten, overcomplicated, and too demanding of the respondent than they are to be simpleminded, superficial, and not demanding enough.

⁶Moser and Kalton (1971) assert that nine out of ten social surveys use some kind of questionnaire. Adams and Schvaneveldt (1991) similarly cite Phillips (1971) who reported that 9 out of 10 articles published in two leading sociological journals, the *American Sociological Review* and the *American Journal of Sociology*, use either questionnaires or some form of interview as the main device in collecting data.

All questions, broadly speaking, are either "open" or "closed" (Oppenheim, 1966:40). 'Closed' questions, in which respondents were offered a choice of pre-specified (pre-coded) alternative replies were used in the present study. The advantages leading to the selection of this approach include the following (Adams and Schvaneveldt, 1991:201):

- (i) ease of completing questions;
- (ii) brevity of response time;
- (iii) specification of the frame of reference for the subject;
- (iv) promotion of objectivity;
- (v) ease in scoring, coding, and tabulation.

These were simpler and quicker to answer, meaning that more questions could be asked within a shorter period of time; and they required no writing and facilitated quantification. Furthermore, they embodied the advantages of expeditious and easy analysis. The use of closed questions has, however, been criticized for various reasons, including: a tendency to limit and direct respondents, loss of spontaneity and expressiveness, and possibly the introduction of bias as a result of 'forcing' respondents to choose between given alternatives and by structuring respondents' frames of reference in such a manner as to make them focus on alternatives that might not have occurred to them and encourage them to provide responses which under normal circumstances they would be incapable of formulating (Mitchell, 1993; Oppenheim, 1992; Potter, 1985). However, as Mitchell (1993:228) affirms: "this is precisely what a well-designed interview schedule is supposed to do, and it presumably has many advantages over traditional research procedures."

5.6 Measurement Practices

Many basic aspects of individuals' appraisive environmental perceptions and cognitions can be investigated by means of uncomplicated attitudinal surveys. Attitudes towards the environment may be investigated by unstructured interviews, which has the merit of flexibility but involves problems of data recording and memory decay for the interviewer (Potter, 1985).

The residential satisfaction, attitude, perception and priority measurements formulated for the present study (mainly basic ordinal scales and rankings) were derived from other studies, including: Hourihan (1984), Korboe (1992), Louviere and Timmermans (1990), McGranahan (1993) Miah and Weber (1990), Michelson (1977), Pacione (1982) Stephens and Harpham (1992) and Whittington *et al.* (1993)

Oppenheim (1966) asserts that thinking on the nature of attitudes has been rather primitive; the tendency has been to perceive them as straight lines running from positive, through neutral, to negative feelings about the object or issue in question. And, indeed, in the present study, attempts at measurement concentrated on trying to place householders' satisfaction on the straight

line or linear continuum, in such a way that they could be described as satisfied, indifferent, dissatisfied; minor, moderate, serious, and so on—in terms of a numerical score or by means of ranking.

The attitudinal scales used were simpler three-point (and in some cases four-point) profiles rather than the more sophisticated five-point forms frequently used by Northern researchers, as Korboe (1992) observes.

In measuring assessments of residential environments, the primary concern was with "unidimensionality—making sure that all the items would measure the same thing" (Oppenheim, 1966:133). The intention was also to get respondents to place themselves on a satisfaction level continuum for each statement—running from "serious problem" to "moderate problem" to "minor problem". These three positions were given simple weights of 3, 2, and 1 for scoring purposes, as it was believed that more complex scoring methods would possess no advantage.

5.7 Sampling

The concept of *sampling* from a population, rather than enumerating the whole population, is widely accepted as the standard method for selecting for study a representative cross-section of a larger population. However, as Bulmer (1993b) points out, sampling according to standard principles poses formidable problems in many Southern countries: sampling text books were not written with the South in mind. Similarly, Hakim (1987) observes that many statistical textbooks offer extensive outlines of the statistical theory underlying sampling which, while theoretically valid, is of little use in the real world context in which most studies are carried out. For example, representativeness is meant to be ensured by the utilization of *probability (or random) sampling* in which each member of the population has a known or non-zero chance of selection. But, implementing proper sampling methodology is not a straightforward exercise: not only is there the 'myth of representativeness',⁷ but in designing the survey, the researcher is also confronted with other dilemmas (Olsen, 1992).

All things being equal, probability samples should normally be used. However, conditions may be such that probability sampling is infeasible or not the most appropriate sample for meeting the research objectives in a particular situation (Open University, 1979). There are also other circumstances in which a purposive sampling approach may be preferred or justifiable—such as if an adequate sampling frame for the population in question is lacking, or if the objective is not to obtain a representative sample but rather to study a limited number of cases, identify problems

⁷ The 'myth of representativeness', according to Olsen (1992:58) goes something like this: "Enumerate all the households in the area. Write all the names on slips of paper and throw them in a hat. Pick out as many as you can handle and that is your random sample. Since every household has an equal chance of getting in the sample, the random sample will be representative of the population."

or generate hypotheses (Bulmer, 1993b; Ward, 1993). Non-probability sampling approaches may also be used where a probabilistic approach is not necessary to gather useful data for certain aims (Adams and Schvaneveldt, 1991).

The principle of selection in *purposive* or *non-probability* sampling⁸ is the researcher's judgement as to typicality or interest, whereby a sample is built up which enables the researcher to satisfy their needs in a particular study.⁹ In purposive sampling there is no means of estimating the probability of units being included in the sample; indeed, there is no guarantee that every element has a chance of being studied. The rationale of such an approach is very different from statistical generalization from sample to population. Non-probability sampling in development research in academic disciplines such as sociology, anthropology and political science is, in fact, more common than probability sampling owing to indefinite populations, unavailable sampling frames, small budgets, lack of time, inexperienced personnel, pressure for results and similar constraints. Non-probability or purposive samples may be drawn in a variety of ways, including chunk samples, cluster samples, convenience samples, judgement samples, opportunistic samples, purposeful samples, quota samples, snowball samples and volunteer samples. These non-probability sampling procedures are among the most common employed in field research (Adams and Schvaneveldt, 1991; Bulmer, 1993b; Burgess, 1984; Mitchell, 1993; Peil *et al.*, 1982; Robson, 1993).

In terms of financial cost, utilization of resources and expeditiousness of delivery of results, as well as depth of perception, the qualitative approach using a rational selection procedure of respondents is indisputably superior to an officially conducted random sample survey of the conventional kind. The main question remaining, however, is whether the information collected is useful, 'reasonably' representative of the group and issues which the survey is intended to address, and whether the data produced are sufficiently reliable for policy purposes (Ward 1993).

Having taken into account the above issue, a non-probabilistic approach to sampling was considered both appropriate and justifiable in the present study.

5.7.1 Sample

One of the first steps in the planning of the survey was to identify the population to be studied—its geographical, demographic and other boundaries—and decide whether it should be

⁸ According to the Open University (1979:11): "a *probability sample* is defined as a sample in which all members have a known chance of selection. In addition, no member is assured of selection, and no member is excluded from selection. With a *non-probability* or *purposive sample* at least one of these three conditions will not be met, that is, the chance of selection is unknown, or some members will be assured of selection, or some members will be excluded from selection."

⁹ Hakim (1987) mentions the use of 'focused sampling', which is the *selective* study of particular individuals, groups, or institutions, or off particular relationships, processes or interactions that are expected to offer especially enlightening examples, or to provide particularly good tests for propositions of a general nature.

fully or only partially covered (Moser and Kalton, 1971). The sample size invariably depends on the purpose of the study, data collection method, and sort of population available for the research problem (Adams and Schvaneveldt, 1991). Because of the small number of plots and houses in both Swahili Village and Bondeni, a decision was made to include all houses in the two *majengos* in the physical survey. Thus, a total of 144 houses (planned=144) were surveyed.

5.7.2 Sampling Units

Two stages are involved in the selection of respondents in all fieldwork based on sampling—identifying a survey area or sampling frame, and selecting households or individuals from within the sampling frame. Defining the key units of analysis for a study is important at the outset, since it influences the composition of the sample; it can further have significant implications not only for the substantive content, but also for costs. The choice will vary according to the nature and purpose of the study, but the sampling units must be relevant to the research purposes and sociological reality (Devereux and Hoddinott, 1992b; Hakim, 1987; Mitchell, 1993). However, Mitchell (1993) asserts that it would seem, for the most part, that the use of different sampling units is only a minor issue in a more complicated problem of sampling.

In the present study, four levels of data collection and analysis were deemed necessary: settlement-level data, house-level data, room-level data and household-level data. The concept of a household informing the present study, for purposes of analytical clarity,¹⁰ is that established by international guidelines (Young, 1993:114, cited in Varley, 1996:506), which broadly defines a household as:

a number of individuals who live together and provide the basic needs for themselves, their children and relevant others (i.e. those who live under one roof and share a common pot).

Two distinct strata are defined within the household variable: owners and tenants.

With the inclusion of all houses, a total of 145 households were included in the survey, 54 in Swahili Village, Machakos and 91 in Bondeni, Nakuru. Within the two *majengos*, individual household sampling was purposive rather than random. The intention was to include an equal number of owner and tenant households in the survey, as a main concern of the research was the relationship between tenure status and attitudes, perceptions and levels of satisfaction. Hence, "random-walk procedures", without the benefit of prelisting, were employed; the author and his research assistants were thus interviewers and at the same time samplers (Mitchell, 1993). The

¹⁰ Writing on Zambia in the late 1940s, Deane (1949:47 cited in Devereux and Hoddinott, 1992c:29) noted: "the sleeping household, the eating household, the cash-earning household, the cash-spending household, and the producing household all represent different combinations and permutations within one wide group of relatives. . . It is usually necessary to place these persons in households for the purposes of analysis on the basis of arbitrary decisions. The decisions will depend largely on the form of analysis." Pugh (1997b) similarly asserts that households, especially family households, involve a variety of relationships between people which express social and emotional bonding relations, and sometimes express explicit or implicit economic transacting.

targeted number of households was considered adequate, especially bearing in mind Adams and Schvaneveldt's (1991:184) assertion that: "It is no doubt wasteful to obtain a larger sample that is necessary, especially if it is not a probability sample."

5.8 Data Collection

The conduct of research in the South is a primary issue. In many instances, the results of social enquiry are not only fed back to fellow academics, but are used to influence the life chances of millions of peoples. Consequently, the means by which social data are collected and the quality of data which results are issues of crucial importance (Bulmer, 1993a).

The primary data collection tool used in the present study was the structured questionnaire survey, the design of which is discussed in Chapter 5.4 above. The data collected fell into two main categories (Burgoyne, 1994:192): (i) data that were, for practical purposes, objective, factual and non-controversial; and (ii) data that were personal/subjective: an opinion, perception, experience, point of view. The field surveys in Swahili Village and Bondeni were conducted between October and December 1995.

5.8.1 Research Assistants

Most researchers who feel their fieldwork was 'successful' comment that research assistants were indispensable, and absolutely key to the execution and success of their work (Devereux and Hoddinott, 1992c; Wilson, 1992).

A sound professional relationship is identified by Wilson (1992) as being the best foundation for a good personal relationship between researchers and their assistants. In the present study this was possible because, at the time the fieldwork was conducted, one of the two research assistants, Joseph Esau, was a member of staff of HABRI whose job description includes participation and statistical analysis of data collected in surveys which constitute a key part of HABRI's activities. The other, Muindi Mulili, had vast experience in fieldwork, having recently retired from after working as a Social Interviewer in HABRI for over three decades. Both, especially the latter, fulfilled several useful functions, including providing vital contextual knowledge—about the two *majengos*, their historical background and evolution, and subtleties of language and responses—that might otherwise have been missed altogether. Moreover, they were able to get along with elements of the local community, and also had a perceptive intelligence, and were able to screen questions that respondents might have objected to or resented (Devereux and Hoddinott, 1992c).

5.8.2 Research Clearance

Fundamental to the ethical questions regarding research access is the dichotomy between covert and overt research (Burgess, 1984). Devereux and Hoddinott (1992b) affirm that all fieldwork, unless it is covert, is conducted within an official (political and bureaucratic) framework. Once research clearance is granted, the field work has been 'legitimized' at a national or Ministerial level, but contact will continue with government officials, the parallel political hierarchy and technical persons. Indeed, for the present study, clearance to conduct the research had to be obtained from the Office of the President, and was granted on condition that a copy of the completed thesis be submitted to that office on completion. But, as Peil (1993) points out, even after permission has been obtained, the political climate of a country often constrains systematic data collection.

5.8.3 Questionnaire Administration

Multilingualism frequently presents problems in the conduct of social research in a number of countries on the African continent (Peil *et al.*, 1982). Kenya is no exception. In the present study, face-to-face questionnaires were administered to the samples in each of the two settlements.¹¹ The questionnaire was composed and written in the English language. The language of administration was, however, the local *lingua franca* in both the settlements, *kiswahili*, which is spoken and understood by the majority of the residents. Undeniably, as Sayer (1984:17) apprises: "knowledge is also gained . . . through interaction with other people, using shared resources, in particular a common language." Since this involved simultaneous translation, precautions had to be taken to ensure that the words used were similar across the interviews and that there was no ambiguity in the concepts and phraseology used as this could have introduced bias (Tippel: 1993). Nevertheless, as noted by Korboe (1992:60): "the precise wording of questions was not always similar, and a pedantic case could be made in respect of translational inconsistencies."

The problem of translation was included in the issues addressed during a one-day training drill of the survey assistants, which was conducted prior to the commencement of the field surveys.¹² The instruction also entailed a briefing of the purposes and objectives of the research, to ensure that the survey assistants were able to explain to the respondents, in general terms, what the survey was about. They were further briefed about the sample, and given guidance on getting the cooperation of the respondents, the meaning of the questions, how to record the answers, and how to probe if the response given was unsatisfactory. In addition, the training session included field experience, albeit very brief.

¹¹ The "one-to-one interview" is the basic methodological technique in most social science fieldwork (Devereux and Hoddinott, 1992c:28).

¹² Preparing survey assistants for their tasks can take a few hours or several days depending on their experience and the complexity of the research being undertaken (Peil *et al.*, 1982).

5.9 Data Analysis

Ultimately, the case for surveys as a research methodology can be made most convincingly through its results. It is one matter to discuss surveys and fieldwork as a research method—equally important is the manner in which data are applied analyzed and applied (Heyer, 1992). In relation to this, George and Mallery (1995:vii) affirm:

While mathematics is generally thought to be the language of science, data analysis is the language of research. Research in many fields is critical for human progress, and as long as there is research, there will be need to analyse data.

The onus is on those of us who have conducted surveys to demonstrate, not only that good data can be collected, but also that significant results can come out of this research if the data are skilfully exploited at the processing and analytical stages (Heyer, 1992). Data analysis requires that the researcher be comfortable with formulating categories and making comparisons and contrasts (Creswell, 1994). But, as Marshall and Rossman (1995:111) assert, data analysis, i.e., the process of bringing order, structure and meaning to the mass of collected data is "a messy, ambiguous, time-consuming, creative, and fascinating process. It does not proceed in a linear fashion; it is not neat."

Although the fieldwork is the central stage of the survey, a considerable amount of work remains to be done after it (Moser and Kalton, 1971). On completion of the field surveys, the raw data collected by means of the questionnaires had to be scrutinized for errors, omissions and ambiguities before they were ready for coding (into numerical form), tabulation and keying into the computer. The annotated data were used to perform the various statistical tests. The data collected in the study were intended to make some contribution to the development of theory¹³ and also practice of settlement upgrading in Kenya, the small-scale nature of the research notwithstanding (see Chapter 1.6.1).

There are several software programmes available for the management and/or analysis of data. SPSS (Statistical Package for the Social Sciences) is widely used and is very useful for the routine management and analysis of survey data.¹⁴ The personal computer (PC) version is particularly easy to use, and also able to cope with most kinds of data;¹⁵ but it is not as versatile

¹³A major approach to data analysis that has been advocated for field research is the use of Glaser and Strauss's model of generating theories from data. This approach gives rise to either substantive grounded theories or formal abstract theories which Glaser and Strauss (1967, 32-33 cited in Burgess, 1984:180) distinguish as follows: "By substantive theory, we mean that developed for a substantive, or empirical area of sociological enquiry, such as patient care, race relations, professional education, delinquency, or research organizations. By formal theory, we mean that developed for a formal, or conceptual area of sociological enquiry, such as stigma, deviant behaviour, formal organization, socialization, status congruency, authority and power, reward systems, or social mobility. Both types of theory may be considered as 'middle range'. That is they fall between the 'minor working hypotheses' of everyday life and the 'all-inclusive' grand theories."

¹⁴The package comprises extremely versatile procedures for performing scaling operations, for constructing tables, and for performing different types of statistical tests and constructing various measures of degree of association (Phillips, 1976).

¹⁵Martin (1987), in an account of experiences with monitoring and evaluation of upgrading in Lusaka, reports that the World Bank supplied SPSS to the Lusaka Housing Project Evaluation Team (LHPET) for use in a mainframe computer in the Lusaka City Council. Tremendous

as some other software packages in more complex analysis (Glastonbury and MacKean, 1991). This, however, was not a limitation in the present study.

Indeed, "grandiloquent statistical modelling" (Korboe, 1992:64) was deliberately avoided because it offered limited opportunity for realistic explanation of the key research questions addressed in the study. Moreover, as Hakim (1987:7) points out:

Abstrusely technical academic conflicts over research result are sometimes a product of quite different approaches to assessing the importance of research results . . . simple descriptive tables, which show clearly very large differences or unexpected patterns and associations, can be just as useful as complex multiple regression analyses in policy research . . .

5.10 Summary

Expositions on research methods customarily give the impression that they are universal which is a long way from actuality. Moreover, a majority of methodological texts are not only intended for the conduct of research in the North, but are also heavy on theory, with tedious examples that always appear to work out facilely.

The primary purpose of this chapter has thus been to explain and rationalize the research methodology adopted for the present study. Fundamental considerations in the design of the research strategy elaborated above included precision, logic-tightness and aptness to the local context, in addition to efficiency and simplicity of execution. It is hoped the methodological approach outlined here presents credible guidance for other researchers wishing to study housing conditions and infrastructural and environmental issues in urban low-income informal settlements in Kenya.

In the following two chapters, findings of the field surveys conducted in Swahili Village and Bondeni are presented. The details presented in these chapters of analyses are, for the most part, summaries combining data from the two *majengos*, and constitute the basis for much of the original contribution of the present thesis.

difficulty was, however, experienced in running SPSS on the mainframe computer. But microcomputers have made the problem of data processing encountered, the details of which are vague, a thing of the past.

Chapter Six

**TWO *MAJENGOS* IN PERSPECTIVE:
HOUSE AND HOUSEHOLD CHARACTERISTICS**

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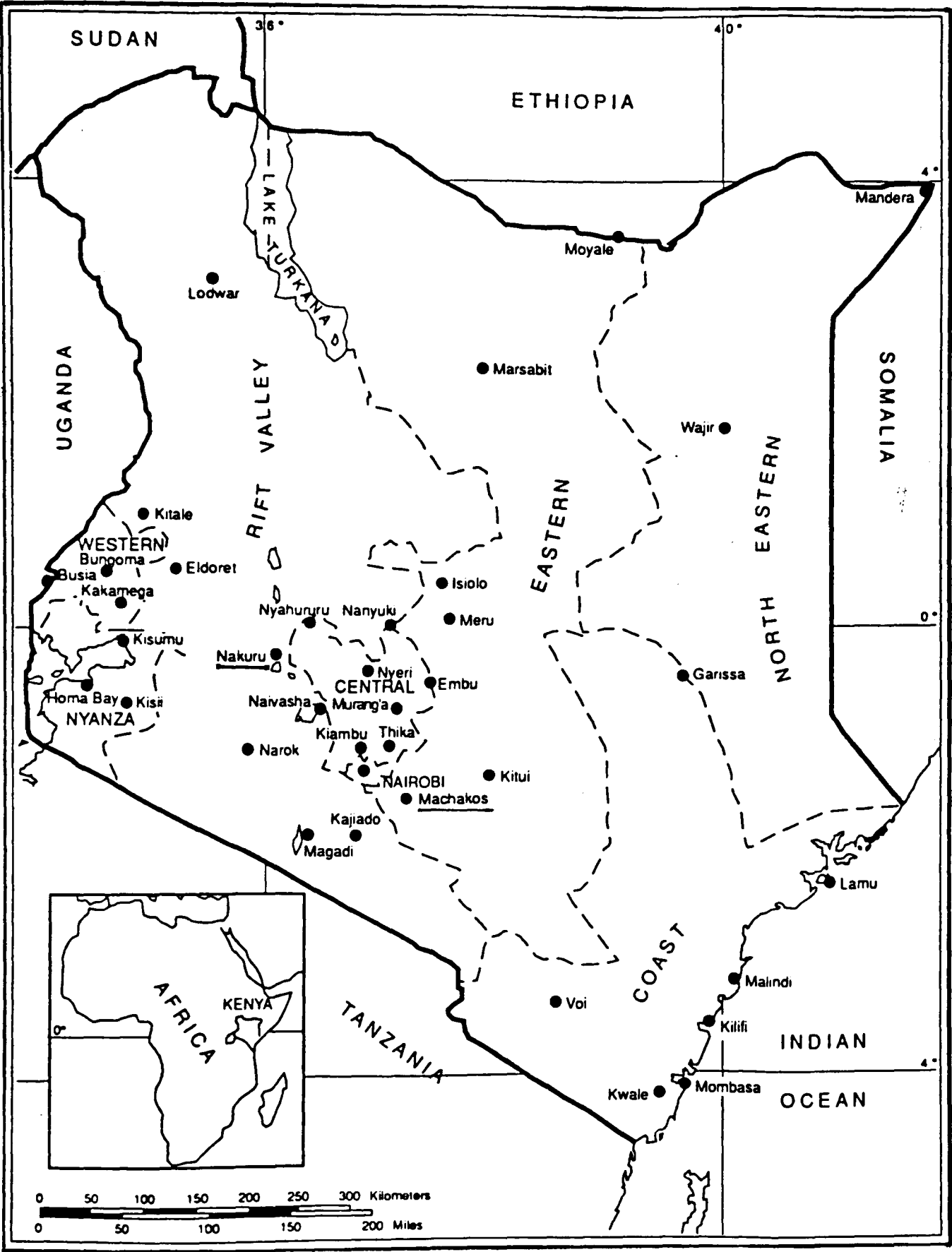


Figure 6.1: Map of Kenya showing main urban centres and towns where the research sites are located (underlined)

6.1 Introduction

In the last part of Chapter Three, a (methodological) proposal of classificatory analysis of urban low-income informal settlements in Kenya that can provide a more systematic basis for strategy formulation, programme options and project design than subjective judgement, and inform the implementation of upgrading interventions was set forth. Six taxonomic classifications of informal settlements were distinguished. One of these was *majengos*, which are to be found in all the larger urban centres in Kenya.

The design of this chapter is to present a lucid description of the characteristics of the houses and dwellings in *majengos*, and of the households that live in them. The chapter focuses, in some detail, on two *majengos* in two secondary towns in Kenya—Swahili Village in Machakos and Bondeni in Nakuru. The former was upgraded under the auspices of the World-Bank funded Third Urban Project in Kenya, but the latter has not benefited from any upgrading interventions as such. The chapter begins with a brief overview of the (historical) development of the two *majengos*. The type and quality of housing structures and dwelling units in which owner and tenant households in the two neighbourhoods live is then examined. This is followed by a comparative analysis of the socioeconomic characteristics of owner and tenant households in the two settlements, as well as a more detailed analysis of those of household heads. Owner and tenant householders' satisfaction with living conditions within their respective dwellings is also investigated. Lastly, ownership of consumer durables by owner and tenant households in the two *majengos* is evaluated.

The chapter is not intended to provide a meticulous account of all aspects of the houses and dwelling units in the two settlements and of the owner and tenant households that occupy them. Rather, through an analysis of some key characteristics, it is hoped that it will serve as a basis for credible guidance in the formulation of strategies to improve housing conditions in *majengos*.

6.2. Two *Majengos* in Perspective

6.2.1 Swahili Village, Machakos: Settlement Background and Overview

The history of Swahili Village can be traced back to 1899, when the Imperial British East African (IBEA) Company constructed a fort where Machakos town is presently located (Figure 6.1). The post thereafter became an important provisioning station for IBEA Company caravans travelling upcountry from the coast. The *majengo* was, however, founded at its present site in 1892, when the colonial administration arrived and the locality was purposely planned, with a separate residential area for the indigenous population. In 1895, Machakos station was designated the administrative centre of the interior province of the East African Protectorate. As the town grew, more people were allocated plots by the colonial administration at a cost of 300 shillings. Hence,

the whole area was demarcated and plots allocated. The allottees were, however, not issued with title deeds, but rather were given Temporary Occupation Licences (TOLs).

Swahili Village comprises 59 residential plots, most of which are the original size of approximately 50 feet by 100 feet. A small number, however, having been sub-divided, measure 50 feet by 50 feet. Tarmac and earth roads running through the settlement, built some years ago but still in fairly good condition, make the settlement and houses therein easily accessible. The planning of the settlement also provides for some comparatively generous open spaces in between the plots and houses.

When the first plots were issued, allottees were provided with a typical house plan to follow by the colonial administration to ensure uniformity within the settlement. The original plan comprised four large rooms, (two on either side of a central corridor), shared by the owner and tenant households; but most houses have been extended. The predominant house construction materials are mud-and-wattle for walling, and corrugated iron sheets or *debes* (flattened metal sheets) for roofing. All plots have toilets, in most cases a pit latrine. But a number of the pit latrines have filled up, constraining some residents to use a public ablution block within the settlement, maintenance of which is the responsibility of the municipal council. A few houses have waterborne sanitation connected to the sewer line running through the settlement.

Swahili Village has a predominantly tenant population; but many owners also live within the settlement. Many people are engaged in informal sector pursuits or other small-scale enterprises within the settlement or in the nearby municipal market. The activities include retail and food kiosks; hawking of vegetables, fish and other comestibles; charcoal selling; second-hand clothes trading; brewing and selling of illicit liquor; and traditional doctors. A minority of the employed residents are engaged in the formal sector. Most landlords depend on the income they get from letting rooms in their houses. Rents for a single room within the settlement range from KSh 200 to KSh 600 per month. Rooms with electricity, of which there are not that many, cost the most.

There are a limited number of community-based organizations and self-help groups in Swahili Village. The most active are "merry-go-rounds" (i.e., informal savings and finance mechanisms) organized by the residents. The major source of external assistance is the local mosque. It provides aid, which is limited to the Muslim community, in the form of food, clothes and, occasionally, money.

Crime is a prevalent problem in Swahili Village. Delinquent youths are blamed for the nefarious activity, which is at its highest during the night.

6.2.2 Bondeni, Nakuru: Settlement Background and Overview

Bondeni was founded in 1900 when the Mombasa-Kisumu railway line which was under construction reached Nakuru (Figure 6.1), and a number of the railway workers (who were from diverse ethnic groups), were allotted land on which to construct dwellings. When the First World War ended in 1918, the colonial authorities allocated soldiers who had fought in the war and had nowhere to go plots in the settlement in appreciation of their service. Thereafter, the colonial administration started to receive appeals from other landless people, and long-time inhabitants of the locality were considered for allotment of plots. Successful applicants were required to pay KSh 230 for plots measuring 100 feet by 50 feet, and were expected to build houses that conformed to standard house plans (as described above).

In the early 1950s, structures on some 32 plots were demolished to make way for the construction of the present-day Lumumba residential estate, a nursery school, a social hall, a polytechnic, and the Kamkunji grounds. Some of the affected owners were allocated alternative plots in the vicinity; but a number of those who were not are still pursuing compensation in court.

In 1986, Nakuru Municipal Council received funds with which to upgrade Bondeni through the World Bank-supported Third Urban Housing Project. The upgrading comprised the provision of a water-borne sanitary unit on each of the 91 plots in the project area, the construction of profiled and compacted earth roads and an unlined open channel drainage network, the erection of communal storage containers strategic locations within the settlement, and erection of street lights along the main access roads (see Figure 6.4). The residents were not, however, consulted prior to implementation of the project. Consequently, the municipal council experienced great difficulty in trying to recover costs from owners. Still, all plots are connected to the mains water supply and sewerage system as a result of the project. Water supply to some plots has, however, been disconnected owing to non-payment of user charges; and few of the water-borne toilets on individual plots are operational. Several plots within Bondeni have electricity.

Most of the houses in Bondeni have mud-and-wattle walls and roofs covered with either corrugated iron sheets or flattened metal sheets. Tenants constitute the overwhelming majority of residents in Bondeni; but many owners also live in their houses. Rents for single rooms range between KSh 130 and KSh 350, depending on the size and condition of the room and whether or not it has electricity. This rent includes water and electricity where applicable.

Many of the residents are small-scale operators in the informal sector, conducting their activities within the settlement, or in the surrounding open-air markets or in town. The activities in which they engage include hawking, operating retail and food kiosks, trading in second-hand clothes, charcoal selling, and brewing and selling of illicit liquor. A number of the residents are formally employed, especially by the municipal council, in offices in town, while others are work as

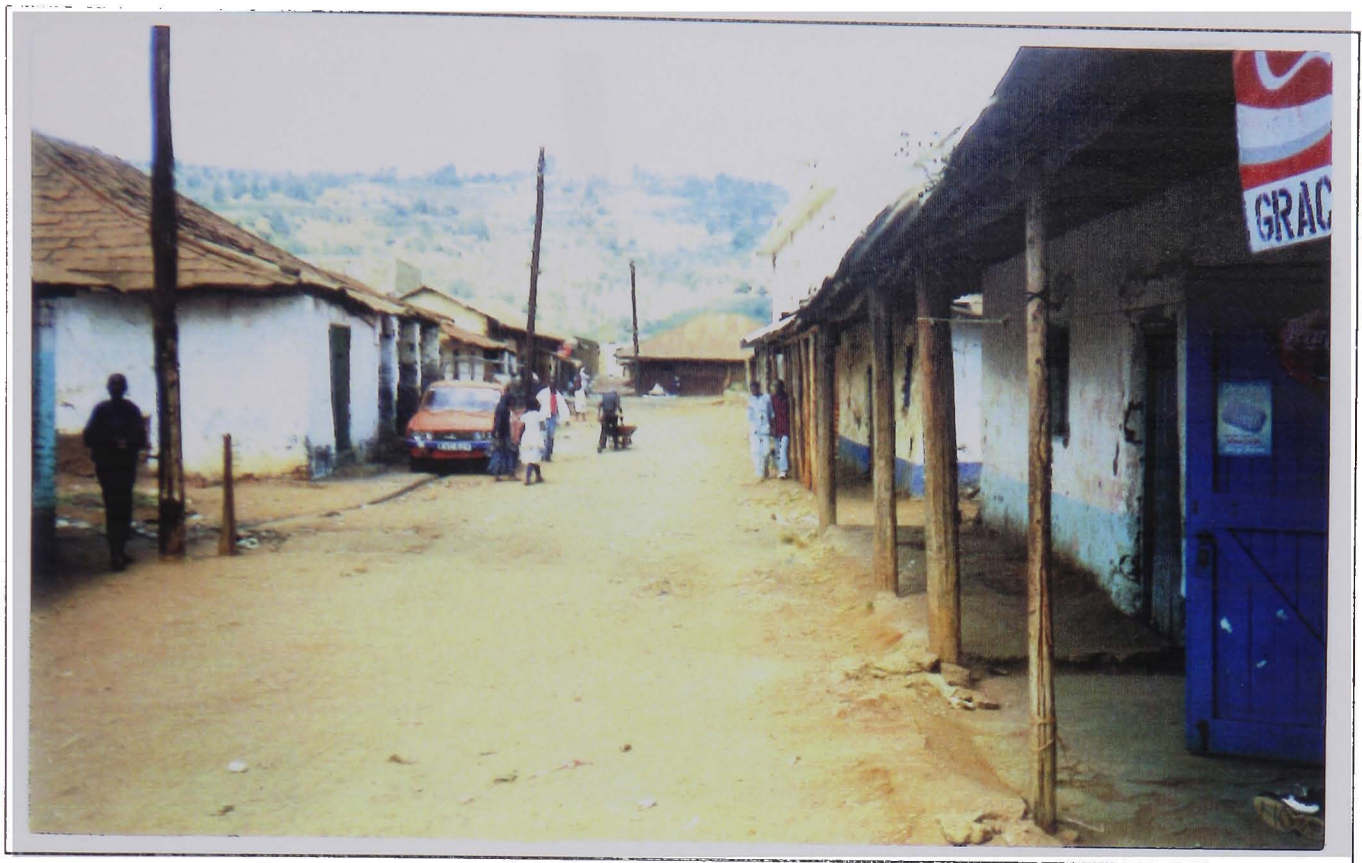


Figure 6.2: Access road in Swahili Village



Figure 6.3: Space between houses in adjacent plots in Swahili Village left uncultivated

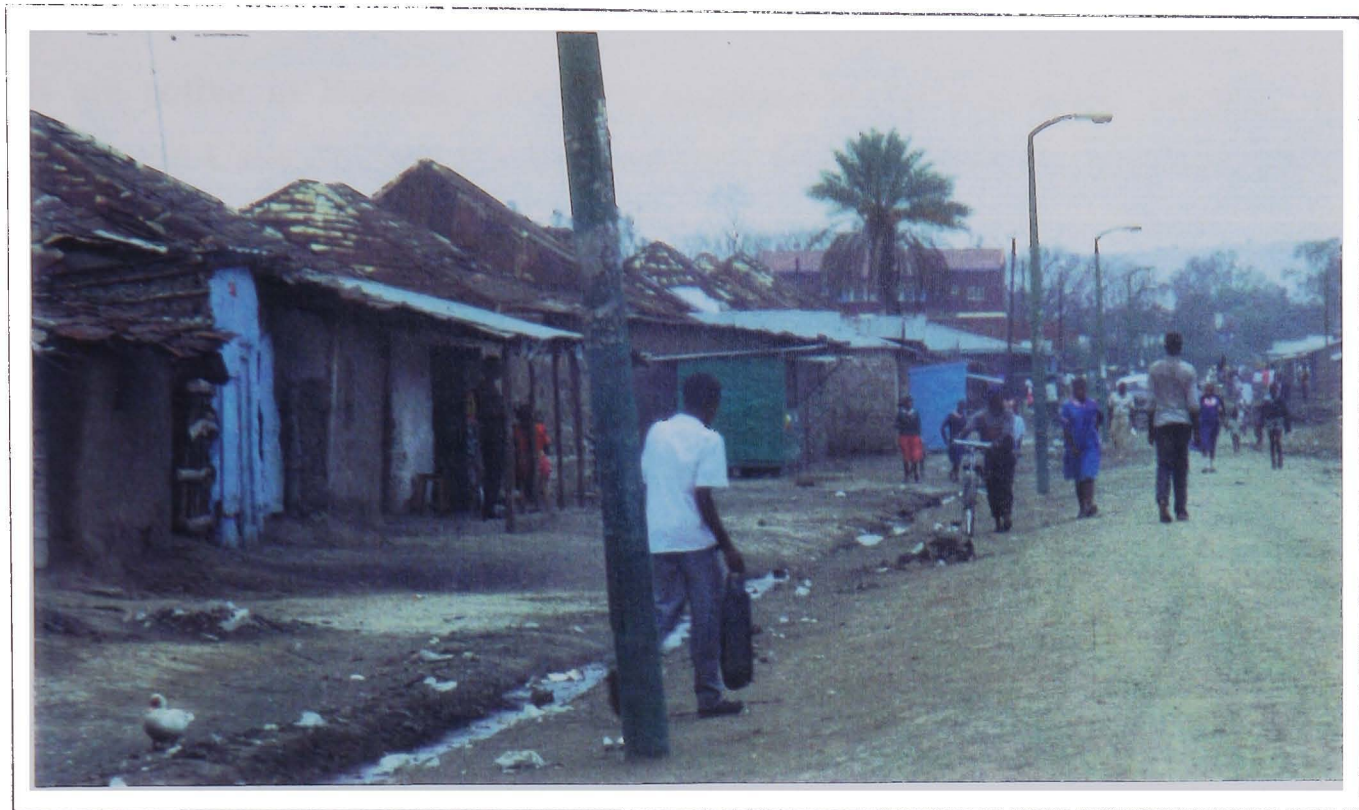


Figure 6.4: Access road with street lights in Bondeni

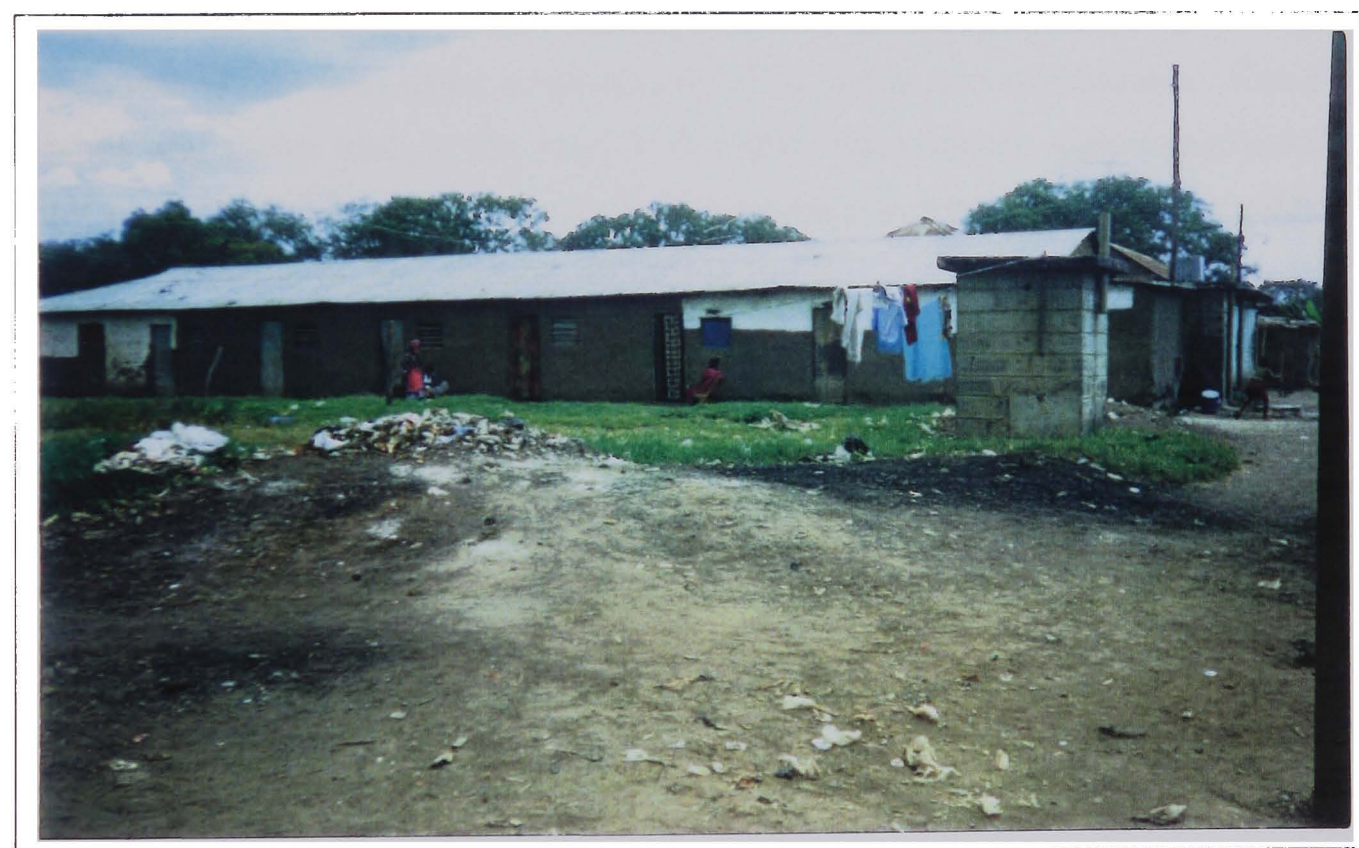


Figure 6.5: Vacant open space in Bondeni left uncultivated.

domestic servants for more affluent households in the town's middle- and higher income residential neighbourhoods.

Several NGOs are active in Bondeni, assisting residents in various ways. Among the most involved is the Roman Catholic church which provides food, cooking oil, blankets and clothing for the aged, and also sponsors children from very poor families through school. The church assists needy persons, as best it can, without reference to religious affiliation. The Muslim community also receives aid from the local mosque, typically in the form of food and clothing; but the poor and aged may also be assisted financially to pay their rent. Residents themselves have also founded a number of mutual-aid groups.

Like their counterparts in Swahili Village, Bondeni residents have decried the high crime rate in the settlement, especially at night. Unemployed youths within the locality are held responsible for this plight.

6.3 House and Plot

6.3.1 Structures on Plots

Plots in the two *majengos* were originally allocated for residential purposes, according to terms stipulated by the colonial authorities with which allottees were obliged to comply. Apart from the main houses, there are various other structures on plots in the two settlements. These include latrines, bathrooms and stores and, in the case of Bondeni, the sanitary units constructed as part of the upgrading project. While plots remain predominantly in residential use, manifold home-based enterprises (HBEs) are present in both neighbourhoods.

Despite the existence of some vacant open spaces between structures within the two settlements (Figures 6.3 and 6.4), there is little evidence of attempts by residents to cultivate any subsistence crops or vegetables.¹ This is largely due to the urban geographic location of the two *majengos*—both occupy inner sites relative to their respective municipal boundaries, and contiguous land uses are a further deterrent. Some owners also prohibit the growing of crops by tenants on their plots where space permits. Another inauspicious factor is the incidence of anti-social and culpable behaviour in the two settlements, allegedly perpetrated mainly by youths during the night.²

¹Contrary to popular belief, there remains considerable evidence of food production in Southern cities, in terms of vegetables, fruit and small livestock. Most urban agriculture is small-scale and intensive, yet can contribute substantially to the household diet and supplement the household income (Dankelman and Davidson, 1995; Drakakis-Smith, 1990). In numerous urban centres in the South, a high proportion of the population grows a significant proportion of their own food (Aipira, 1994; UNCHS, 1996). Indeed, Charles Choguill (1995) remarks that, as the vast majority of migrants to urban areas in the South originate from rural areas where they have traditionally supported themselves through agriculture, it would be surprising if they made no attempt to continue with such activities upon their arrival in the city. In Kenya, one third of urban dwellers grow some subsistence food in town (Lee-Smith, 1992); more particularly, the cultivation of subsistence vegetables and crops to supplement household food consumption is common practice in peri-urban low income urban informal settlements.

Table 6.1: Number of rooms, households, occupancy rates and female household heads per house (medians and IQRs)

	<i>SWAHILI VILLAGE</i>	<i>BONDENI</i>
Number of rooms	11 (8.5, 15)	18 (14, 21)
Number of households	6 (5, 11.3)	13.5 (10, 18)
Occupancy rates (number of rooms per household)	1.3 (1.1, 1.8)	1.3 (1.3, 1.6)
Number of women heads	1 (0, 2)	3 (1, 4)

The original houses in both *majengos* were constructed in conformity with type plans with which the original allottees were provided by the colonial authorities.³ The plans were based on the traditional "Swahili" house, which originates from the coastal region of East Africa, and comprises four or six rooms leading off a wide central corridor. Although the houses are traditionally occupied by single households (commonly nuclear or extended families), the layout readily accommodates multi-household co-habitation, thus providing a potential source of income for the owner through rental arrangements.⁴ The overwhelming majority of owners exploited this opportunity.⁵

6.3.2 Number of Rooms and Households in the House

As is typical of *majengos* nation-wide, most houses have been extended, primarily through the annexation of additional rooms to the original structure.⁶ In point of fact, it is essentially because of these extensions that *majengos* have been transformed into what, in most cases, appear to be unplanned residential neighbourhoods, manifesting typical characteristics of urban low-income informal settlements.⁷ However, of all the *majengos* in the country, Swahili Village has arguably experienced the least detrimental environmental consequences of uncontrolled expansion and densification.

²Crime against property is not only a phenomenon of the rich neighbourhoods but is also spread within many low-income areas, including informal settlements (UNCHS, 1996). Several characteristics of urban neighbourhoods which are not easily identified or defined may have significant influences on the incidence of crime, vandalism and inter-personal violence (Hardoy et al., 1992).

³This was the official practice in *majengos* in all urban centres throughout the country where they were established when Kenya was still a British Colony.

⁴See Macoloo (1994b) for a discussion on the swahili housing market. See also Kayongo-Male (1988) and Stren (199b).

⁵By the 1920s, house owners in Swahili Village had begun to rent out rooms to Kamba and other migrants from rural areas (Hoek-Smit, 1976).

⁶Indeed, Shankland Cox (1977:218) assert that: "People have been adding to and altering their houses from the beginning of civilization."

⁷Describing experiences with the construction or improvement of latrines in three informal settlements in Nairobi, Wegelin-Schuringa and Kodo (1997:182) affirm that the primary concern of absentee landlords, who predominate in settlements built on public land, is to maximize the income from their "property". Hence, they construct the maximum number of rental rooms possible, which is reflected in the settlement forms—there is virtually no open space, very few access roads, and housing structures encroach on roads and footpaths, where these exist. Because of the pattern of development and extremely high densities, there is hardly any space for latrines. UNCHS (1977) similarly observes that in Mathare Valley, intensive development originated with the demolition of the irregularly sited traditional-type dwellings and their replacement with timber housing structures built in a tight orthogonal layout with the eaves of adjacent roofs almost touching

There is considerable variance in the number of rooms in houses, which are all single storey, both within and between the two *majengos*. The number of rooms in houses in Swahili Village ranges from one to 27, with the median being 11 (mean=11.8, mode=12). In Bondeni, where extension of houses has been more prevalent, the median number of rooms per house is 18 (mean=18.7, mode=18), with the minimum being 10 and the maximum 46.⁸ The median number of households per house in Bondeni is more than double that in Swahili Village; but both have similar numbers of rooms per household (1.3 at the median). In both Swahili Village and Bondeni, as in other *majengos* in the country, houses have been extended primarily to increase the number of rentable rooms.⁹

Women-headed households in urban areas in the South are increasing (Moser, 1992; UNCHS, 1996; Varley, 1996).¹⁰ Kenya is no exception in this respect; latterly, the number of urban households headed by women has risen considerably, particularly in informal settlements.¹¹ In Swahili Village, there is at least one household headed by a woman in 74% of the houses, while in Bondeni 85% of the houses have at least one woman-headed household. The mean number of women heads in a house in Swahili Village is 1.4 (mode=1) compared with 3.1 (mode=1) in Bondeni.

6.3.3 Non-residential Activities in Houses

A characteristic feature of urban low-income settlements in the South is the amount of informal small-scale economic activity going on. In many cities, they are the chief location of informal sector enterprises (UNCHS, 1986a). Indeed, as Dwyer (1975:37) observes:

⁸These figures translate to a median of 237 rooms per hectare (mean=254) in Swahili Village and 388 rooms at the median in Bondeni (mean=402). In their survey of informal settlements in Nairobi, MDC (1993) found an average of 220 dwellings units (which can be taken to mean rooms) per hectare in Kibera, the largest informal settlement in Nairobi. However, in his earlier study of Mathare Valley, Etherton (1971) found densities of over up to 597 rooms per hectare in company-built housing.

⁹It has gradually become apparent that, almost throughout the South, the urban poor consider the rental income potential of a house to be one of its most important functions (McCallum and Benjamin, 1985). Rental income is typically utilized for both consumption and investment (Hansen and Williams, 1988). But in Kenya, formally, renting rooms in the urban informal sector is prohibited; in practice it is condoned because there would otherwise be an exceeding shortage of inexpensive, affordable accommodation (Lee, 1990). The possibility of rental income is also a prime motivator for extending in some other sub-Saharan countries. On the other hand, studies in Bangladesh and Egypt have found that, though rooms may be rented out, the principal reason for extending has been to accommodate the needs of growing households (Tipple, 1992; 1996; Urbanisation, 1996). See also Tipple (1996) for further discussion on housing extensions as sustainable development.

¹⁰In the literature on gender and development, as Varley (1996:506-7) illustrates, the contention that one-third of the world's households are headed by women has come close to attaining the status of an orthodoxy. She suggests, however, that the figure is higher. Indeed, according to the Urban Edge (1988), women constitute at least one-half of the urban population and their number is growing. Moreover, destitute women frequently migrate to informal settlements in urban areas where they remain poor (World Bank, 1996).

¹¹Women-headed households constitute 35.2% of Kenya's households, with the largest concentration being in rural areas (RoK, n.d.); 35% of these are poor (RoK, 1997). In informal settlements in Nairobi, a majority of households are women-headed (MDC, 1993). Syagga and Malombe (1995) propound that the relatively high number of young female heads in informal settlements in Kisumu is due to the fact that they are less daunted about moving to urban areas than previously. But de Haan (1997b) maintains that there is no consensus about why and which women migrate. Still, as affirmed by Gugler (1996a), women outnumbering men by a substantial margin in the urban population reflects a pattern of rural-urban migration in which women predominate.

Table 6.2: Incidence of non-residential activities in the house (percentage frequencies rounded)*

<u>ACTIVITY</u>	<u>SWAHILI VILLAGE</u>	<u>BONDENI</u>
Commercial (shop or other retail activity)	69	57
Service (traditional medical practitioners, etc.)	6	-
Manufacturing/crafts (woodwork, metalwork, etc.)	6	6

*Note: These figures refer to the percentage of *houses* in which non-residential activities were found, not *dwellings (rooms)*.

a . . . feature of the physical environment in which the poor live in . . . [informal] settlements, which is significant, both in terms of the amelioration of their lot, and in terms of general environmental problems is that they are almost never exclusively residential.

Dwellings in informal settlements not only provide shelter and amenities for the owners, but also income through rental space while contributing significantly to the rental stock. In numerous cases, they provide opportunities for commercial activity, retailing, storage,¹² and working space for home-based production of goods and services (small-scale manufacturing and service industries), which generate significant levels of income.¹³ Moreover, home-based enterprises (HBEs) mobilize resources effectively and increase national product, and make an important contribution to the local economy (Haywood, 1986; Rodwin and Sanyal, 1987; Strassmann, 1987; UNCHS/ILO, 1995). There is also evidence to suggest that, despite HBEs being more prevalent in low-value housing areas than high, their existence in informal settlements improves the quality of housing there (Tipple, 1994a). These facts notwithstanding:

. . . policy makers have often opposed work-at-home urban design because of devotion to unifunctional land use theories and because of a moralistic bias against private economic gain from social housing support. (Strassmann, 1987:121).¹⁴

Nevertheless, it is not uncommon for people to use their home as a workplace, regardless of regulations to the contrary in numerous countries.¹⁵ This was the norm in pre-industrial societies and, until recently, small shops and cottage industries were the prevalent mode in the world, often part of sophisticated and complex distribution systems (Tipple, 1994a; UNCHS/ILO, 1995). Latterly, studies of informal sector economic activities in low-income settlements have

¹²Korboe (1992) asserts that if traders or craftsmen whose dwellings double as storage or warehousing were to lose their homes, their livelihood would be directly threatened, increasing the burden on the entire economy and simultaneously reducing GNP.

¹³Tipple (1994a) distinguishes between 'active' and 'passive' HBEs. In the case of the former, non-residential activities invade housing areas. Contrariwise, renting of rooms—passive HBEs—does not hint at any non-residential use but does create income for those involved. Renting of rooms is apparently the predominant income generating use to which dwellings are put. A survey of peri-urban settlements in Lusaka found that a quarter of the dwellings had 'active' HBEs that raised the household income by 10.7% above those without HBEs (Strassmann, 1987).

¹⁴In relation to this, Raj and Mitra (1990) observe that although economic planning recognizes home based economic activities as part of the informal economy of cities, it has no policy to relate it with urban land planning and housing strategies.

¹⁵Laquian (1983) affirms that a traditional building code provision is that specific localities in urban areas should be devoted to only one or two uses. Thus, residential neighbourhoods should be restricted to domestic life. Permitting commerce or industrial activity in such locations could produce safety hazards; promote noise, chemical, and other types of pollution; and decrease property values. This standards of unifunctionalism is contrary to normal conditions in low-income communities where commerce, production, domestic activities and leisure all occur simultaneously in the same area. This diversity of activities is the source of vitality and dynamism that is characteristic of informal settlements.

found that between 50% and 75% of all dwellings double as retail outlets supplying daily necessities or as workshops for informal family-based crafts and production of goods (UNCHS, 1986a).

The informal sector plays a vital role in Kenya, providing a multiplicity of income-generating opportunities in both urban and rural areas. Many of the urban informal sector economic activities are carried out in or around dwellings in informal settlements; not infrequently, consumption, production, sales and maintenance are conducted in the same structure. Table 6.2 summarizes the incidence of non-residential, informal income-generating activities in houses in Swahili Village and Bondeni. The non-residential activities that can be found in houses in the two *majengos* include small shops and other retail outlets, butcheries, eating houses, bars, and premises for barbers and hairdressers, tailors, manufacturing and crafts, and traditional medical practitioners. Small shops and other retail outlets are the dominant non-residential activity, being found in approximately 69% of houses in Swahili Village and 57% of houses in Bondeni.¹⁶

6.3.4 Quality of Houses

In most regions of the South, the design and construction of dwellings has developed over a considerable period of time, and the construction principles involved are generally well-suited to the local context. Hence, the design of housing and materials used in its construction varies significantly from one country to another. There can likewise be notable inter-regional, inter-urban and intra-urban disparities within the same country. But households at even the poorest level are commonly able to provide themselves with basic shelter, however rudimentary, using readily available building materials and without institutional assistance (Carrol, 1990).

Dwellings in informal settlements are frequently constructed for limited durability, reflecting the low priority attached to housing under uncertain circumstances (UNCHS, 1984).¹⁷ The initial physical condition of dwellings in upgrading projects is a consequential determinant of the extent of housing consolidation that can be anticipated (Laquian, 1983).

The original allottees in all *majengos* in the country were responsible for building their own houses, using readily available materials and basic local construction technologies. Tenure in *majengos* throughout the country has always been somewhat insecure, what with the issuance of

¹⁶McCallum and Benjamin (1985:282) observe that the most conspicuous home-based economic activity in Southern cities is the small shop: "these nearly ubiquitous shops are a crucial element in the retailing system in low-income areas, providing a readily accessible place at which basic purchases can be made easily, frequently and in small quantities". This ready accessibility lessens the need for people to make special trips outside the neighbourhood and represents a significant savings of transport costs and time. Small-scale retailing of this nature typically caters to a very localized market, selling in small quantities to customers living and/or working in the neighbourhood. Less visibly, but almost as frequently, low-income dwellings will be the site of small-scale production. The range of productive activities is prodigious, and a stupefying variety of things are produced.

¹⁷However, Buranasiri (1983) reports that, in Thailand, one of the key factors that led to the adoption of upgrading as policy is the government's opinion that housing in informal settlements is structurally sound and can be used longer than conventional private housing.

Table 6.3: Quality of construction of houses (percentage frequencies rounded and [scores*] in brackets)

		<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
<u>EXTERNAL WALLS</u> ;	Mud and wattle	70	[1.55]	95	[1.88]
	Brick	13	[2.43]	3	[2.34]
	Quarry stone	7	[2.25]	1	[3.00]
	Concrete block	7	[2.75]	1	[3.00]
	Other	3	[3.00]	0	0
	ALL	100	[1.85]	100	[1.63]
<u>ROOF</u> :	Flattened metal sheets/flattened tins	53	[1.54]	70	[1.73]
	Corrugated iron sheets	47	[2.16]	30	[2.09]
	ALL	100	[1.83]	100	[1.83]

*In calculating the score, the category "Poor" (i.e. poor quality/in need of substantial maintenance/repair works) is given a score of 1, the category "Fair" (i.e. average quality/in need of minor maintenance/repair works) a score of 2; and the category "Good" (i.e. good quality/need no maintenance/repair works) a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00.

temporary occupation licences (TOLs), and the constant threat of demolition has left owners with little motivation to maintain, renovate or improve their houses substantially.¹⁸ On the other hand, all but a few have not extended their houses! As mentioned earlier, there has been considerable extension of houses in both *majengos*. Consequently, several houses have walls and roofs built of more than one material (see Figure 6.5). Only the main materials used in wall and roof construction have been considered in appraising the general quality of construction of the houses summarized in Table 6.3.

6.3.4.1 External Walls

Mud-and-wattle walling¹⁹ has been and continues to be used extensively in house construction in Kenya, both in the rural areas and in urban low-income informal settlements.²⁰ Unequivocally, it represents one of the cheapest solutions for single storey housing.²¹ Mud-and-wattle is the predominant material used for walling in both Swahili Village and Bondeni (70% and 95% of houses respectively). The state of repair of the walls varies from one structure to another in each

¹⁸According to Ward and Macoloo (1992), the increasing demand for rental accommodation in informal settlements may prompt owners to build dwellings from durable materials as these fetch higher rents. But Wegelin-Schuringa and Kodo (1997) assert that, because of insecure tenure, landlords are disinclined to improve their property despite the possibility of increased rental income. Infrastructural improvements are even more risky, and frequently do not generate higher rents. Moreover, the rent paid for dwellings in informal settlements is generally not related to availability of basic infrastructure (water and sanitation), but rather to the internal finishes, i.e., whether or not the floors are screeded, the walls plastered, or if there is electricity.

¹⁹Also commonly known as wattle and daub, it comprises of a vertical framework of poles interlaced with woven sticks onto which mud is plastered (daubed) in layers on both sides. Animal manure, chopped straw or vegetable fibres is often mixed with the mud as a stabilizer to minimize cracking. Walls built in this manner typically have a thickness of between 100 and 150 mm.

²⁰The *Analytical Report: Volume X—Housing* (RoK, n.d:36.) states that: "mud/wood was the dominant walling material in the country with other materials not being very significant although there were marked regional differences." It shows that 67.0%, 21.8% and 56.8% of rural, urban and all houses in Kenya have "mud/wood" walls; but the does not define what is meant by "mud/wood". The UHS (RoK, 1986:46) found that 30.4% of all urban dwellings (26.0% in Machakos and 25.2% in Nakuru) had "non-durable" walls. Again, no definition of "non-durable" is given, but "durable" walls are "made of bricks, blocks, stones and concrete" (RoK, 1986:10).

²¹UNCHS/ILO (1995) affirms that, although resistance to the use of earth as a building material is widespread, earth-based materials are the only ones that are affordable by a large majority of people in the South; and, if utilized in appropriate ways, they are perfectly adequate for most construction needs. Unlike multi-storey construction, low-rise buildings need not use costly materials such as concrete and steel. Low-rise construction, moreover, has considerable sociological advantages by affording maximum contact with the ground (Saini, 1979).

Table 6.4: Quality of construction of houses (scores*)

	SWAHILI VILLAGE		BONDENI	
	Resident Owner	Absentee Owner	Resident Owner	Absentee Owner
External Walls	1.76	1.83	2.07	1.64
Roof	1.77	1.89	1.94	1.61
Mean score for Walls and Roof	1.77	1.86	2.01	1.63

*In calculating the score, the category "Poor" (i.e. poor quality/in need of substantial maintenance/repair works) is given a score of 1, the category "Fair" (i.e. average quality/in need of minor maintenance/repair works) a score of 2; and the category "Good" (i.e. good quality/need no maintenance/repair works) a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00.

majengo, but in most cases restorative work is required, especially in Swahili Village (Table 6.4). In most cases, however, only minimal maintenance and repair works have been carried out on the walls since the houses were originally built some seven decades ago.²² The fact that the houses remain habitable demonstrates the durability of this form of construction.

The use of bricks in house construction in Machakos District is widespread, far more so than in Nakuru District; not surprisingly, therefore, there are more houses with brick walls in Swahili Village than Bondeni. Concrete block and quarry stone have been used infrequently, which is not unexpected given the cost of the materials and the tenure situation.²³ However, the walls of houses constructed with these materials in both settlements are in relatively good condition.

6.3.4.2 Roofs

Roofing is not a problem for the wealthy, but rather for lower and no income people. In low-cost housing the roof is not only the most essential component, but also frequently the most costly when providing protection against harsh climatic conditions. (Landaeta and Larsson, 1987). Dwellings in informal settlements in the South commonly have only a basic roof covering to protect against the elements and shed rainwater; ceilings are uncommon refinements (Carrol, 1990).²⁴

Both Swahili Village and Bondeni are characterized by a rusted roofscape, a manifestation of the deteriorated, weather-beaten roof cladding on most houses in both neighbourhoods. All houses

²²Even when rooms have been annexed to the original house, there has been only limited work carried out on the original structure.

²³Quarry stone, like earth, is a labour intensive material. Cut and dressed stone requires skilled labour in its extraction, shaping and laying. Rubble stone likewise needs to be laid by a skilled mason if it is to perform effectively as a walling material (Spence *et al.*, 1993). Dressed stone walling can be cheaper than concrete blocks in Nairobi. Moreover, stone houses have a particular character and appeal not realizable among the more utilitarian concrete block structures (Laquian, 1983; UNCHS/ILO. 1995).

²⁴More than 80% of the population in the towns and the villages of the tropics live in single storey buildings directly under a roof (Landaeta and Larsson, 1987). Vermin, including insect and animal carriers of disease, can inhabit roof spaces; thatched roofs, in particular, are a favoured habitat (Carrol, 1990).



Figure 6.6: Houses with different walling materials in Swahili Village.



Figure 6.7: Extensions to an original house in Swahili Village.



Figure 6.8: Houses with different roofing materials in Bondeni.



Figure 6.9: Extensions to an original house in Bondeni.

have some form of pitched roof²⁵ covered with either flattened metal tins, flattened metal sheets or corrugated metal sheets.²⁶ In Swahili Village, 53% of the houses are covered with flattened metal sheets/tins compared with 70% in Bondeni. In both *majengos*, roofs built of these materials are generally in poorer condition than the corrugated iron sheet roofs, mostly because the latter are comparatively newer.

Closer examination of the quality of the houses in the two *majengos* (Table 6.4) reveals that, in Swahili Village, houses are at somewhat the same quality level, regardless of whether the owner lives in the house or not. In Bondeni, however, the quality of the houses with absentee owners is inferior to those in which the owners are resident in all respects. Indeed, houses in Bondeni in which the owners are resident are also of a considerably higher quality than houses occupied by the two different tenure groups in Swahili Village.

6.3.4.3 Maintenance/Repairs/New Works: House

The expected life-span of buildings requires that some basic regular maintenance will be provided during the service period of that facility (UNCHS, 1996). The repair and maintenance of the existing housing stock in the South is largely ignored (Tipple, 1992); but in the case of housing for the urban poor and disadvantaged, its importance cannot be overemphasized. Maintenance plays a paramount role in perpetuating the housing stock and precluding housing need that would otherwise arise through obsolescence.²⁷ Maintenance is even more crucial for low-income construction because low-income households cannot afford the cost of replacement, should a building deteriorate to the point of failure (UNCHS, 1996).

Low-income rental housing conditions rarely appear to improve over time, mainly because so few landlords or tenants seem to maintain property (UNCHS, 1989).²⁸ However, in the two years prior to the study, some form of maintenance/repairs/new works had been carried out on the walls of most houses in both Swahili Village (70%) and Bondeni (86%).²⁹ The incidence of

²⁵In a number of cases, the pitch of the roofs is only minimal, more so over extensions to the original houses. Complaints of leakages are, therefore, not unheard of.

²⁶The UHS (RoK, 1986:46) found that 90.1% of all urban dwellings (97.9% in Machakos and 99.8% in Nakuru) had "durable roofs", defined as "made of *tin*, tiles, concrete, corrugated iron and asbestos sheets" (RoK, 1986:10). But, it (RoK, 1986:45) also states: "A roof is considered non-durable if it is made of *tin*, thatched with grass or plant leaves, otherwise it is declared durable". In the 1989 Population and Housing Census, the enumerators' questionnaire had "the following options for describing roofs of houses: iron sheets, tiles, concrete, asbestos sheets, grass/makuti and other" (RoK, n.d.:31). It found that 51.5% of houses nation-wide and 71.3% of urban houses were covered with iron sheets (RoK, n.d.:32).

²⁷Morrison (1974) affirms that despite the fragile quality of most of the building elements and materials used in the construction of the traditional Swahili house in Mombasa (a prime example of low-cost housing), it is not uncommon to find houses that are 50-70 years old. The key to this extraordinary permanence is a cycle of maintenance and renewal.

²⁸In Kumasi, Ghana, for example, where householders have limited financial stake in the house and rent payments do not begin to cover maintenance costs, little regular repair is done (Tipple 1987).

²⁹The works involved for the most part constitute basic essential maintenance/repair work; they are generally not aimed at improving the physical appearance of the houses.

Table 6.5: Maintenance/repairs/new works - House (percentage frequencies rounded)

		<u>SWAHILI VILLAGE</u>	<u>BONDENI</u>
<u>WALLS</u> —Works carried out:	Plastering	19	12
	Painting/whitewashing	20	33
	Patching up	31	54
	No works	30	14
Who paid:	Owner	92	49
	Tenants	8	49
	Other	-	1
<u>ROOF</u> —Works carried out:	New cladding	9	9
	Patching up	43	57
	Other	2	4
	No works	46	30
Who paid:	Owner	93	47
	Tenants	7	53
<u>ROOMS</u> :	Extended/New room(s)	26	52

works carried out on roofs was somewhat lower; 54% and 70% in Swahili Village and Bondeni respectively. This is not unexpected given the comparative durability of the predominant walling and roofing materials (mud-and-wattle and flattened metal sheets/tins respectively).

While the works in Swahili Village have been mostly paid for by the owners, tenants in Bondeni have met the costs in almost half the cases (Table 6.5). Circumstances and conditions under which tenants pay the costs,³⁰ and the means by which the score may be settled with the landlord vary.³¹ A common method is through some arrangement with rent payments.³²

Tenurial security is undoubtedly a paramount determinant of willingness to maintain and improve housing. Few owners will be willing to expend on maintenance if the threat of demolition is impending, although this does not appear to have deterred owners in the two *majengos*, especially Bondeni, from investing in extensions! As mentioned earlier, the rate of extensions has been lower in Swahili Village than in most other *majengos*. Indeed, twice as many houses had been extended in Bondeni as in Swahili Village in the two years prior to the

³⁰Non-payment of rent or abuse of property by tenants irks landlords and leads the latter to disregard maintenance and repairs. Conversely, tenants are displeased when landlords neglect to maintain or repair their dwellings and ignore their complaints (Gilbert et al., 1997).

³¹A majority of tenancies in informal settlements are based solely on oral agreements, not written contracts. It is thus not uncommon for landlords or their agents to take (or not take) measures which adversely affect tenants and contravene the oral covenant; but there is little tenants can do to protect their rights. Indeed, as Mwangi (1997) affirms, there is considerable infringement of tenancy rights, including evictions and arbitrary rents increases; the latter especially when landlords are suffering economically and raising rents becomes necessary to make ends meet (Mitlin, 1997).

³²Low-income tenants are generally not cognizant of the provisions of the Rent Restriction Act (RoK, 1982) concerning the liability of landlords in the matter of maintenance and repairs. Moreover, informal settlements are outside the legal system and are therefore not provided for by the legislation. See Section 5.3.5.1.

Table 6.6: Maintenance/repairs/new works - House (percentage frequencies rounded)

		SWAHILI VILLAGE		BONDENI	
		Resident Owner	Absentee Owner	Resident Owner	Absentee Owner
<u>WALLS (works carried out):</u>	Plastering	13	28	9	14
	Painting/whitewashing	22	18	28	31
	Patching up	41	18	46	47
	No works	25	36	16	8
<u>Who paid:</u>	Owner	96	86	66	24
	Tenants	4	14	33	76
	Other	0	0	2	0
<u>ROOF (works carried out):</u>	New cladding	9	9	6	11
	Patching up	53	27	54	64
	Other	3		6	22
	No works	34	64	34	3
<u>Who paid:</u>	Owner	95	88	61	22
	Tenants	5	12	39	78

study. This can be partially attributed to the fact that there has been a greater demand for low cost rental accommodation in Nakuru as it has grown in status as a major secondary town.

The maintenance, repair and extension works that have been carried out on the houses have mainly been executed by local artisans due to the small scale and incremental nature of the works.³³ Agenda 21 proposes that all countries should expand technical support and incentive schemes for increasing the capabilities and economic viability of small-scale and informal operatives which utilize local materials and traditional construction techniques. It similarly proposes the promotion of labour-intensive construction and maintenance techniques. However, artisans such as those involved in the works executed in the two *majengos* pay neither income tax nor property rates, it is doubtful that they will be popular with the local authorities until they begin to do so (UNCHS/ILO, 1995).

6.3.5 Quality of Dwelling Units

6.3.5.1 Internal Finishes

A frequent concern in the South is the incidence of disease that can be transmitted by insects and animals that often live within poorly built or poorly maintained dwellings. There is certainly evidence that the quality of surface finishes within a dwelling, such as the occurrence of cracks, directly affects the population of some domestic arthropods (insects, ticks and mites) known to

³³Small-scale contractors and builders and artisans fill niches in the housing market and have peculiar attributes that make them well-suited for low cost housing production, as well as the maintenance, repair and renovation of dwellings in informal-sector housing and upgrading schemes. In line with the construction technologies, the works typically involve uncomplicated and undemanding walling, roofing and woodwork. Jobs are usually small-scale, little machinery or equipment is necessary, and credit is seldom required for more than a few days (UNCHS/ILO, 1995; Werna, 1991). But Ward (1982b) observes that the demand for local artisans and craftsmen whose skilled labour is bought by heads of informal settlement households is a commonly unrecognized feature of informal settlements. To the extent that large- and medium-scale contractors select and employ construction technologies to maximize profits, they typically adversely affect the employment- and income-generating aspects of upgrading projects (Laquian, 1983).

Table 6.7: Quality of construction of dwellings—Internal finishes (percentage frequencies rounded)

		SWAHILI VILLAGE	BONDENI
<u>Floor:</u>	Compacted earth	30	86
	Cement screed	69	14
	Burnt brick	2	-
<u>Walls:</u>	Earth render	26	84
	Bag wash	33	4
	Plaster	26	8
	Paint	15	5
<u>Windows:</u>	Timber shutters	64	94
	Timber frame with glazing	23	2
	Metal casement with glazing	13	4

cause disease in humans.³⁴ In this respect, the physical condition of the dwelling unit has direct bearing on disease prevention, as a reduction in the presence of surface cracks, crevices and voids in floors and walls reduces the habitat, breeding places and refuges for disease vectors (Carrol, 1990; Macpherson, 1979).³⁵

Countless dwellings inhabited by the urban poor in the South have earth floors, commonly without a surfacing material (Carrol, 1990). According to the UHS, only 23.4% of the total urban housing stock has non-durable floors,³⁶ which includes 25.9% and 18.9% of dwelling units in Machakos and Nakuru respectively. But findings from the 1989 population census indicate that 69.7% of the total housing stock (82.1% and 26.8% in rural and urban areas respectively) have earth floors (RoK, n.d.).

Dwellings in Swahili Village, for the most part, have better quality internal finishes than those in Bondeni. In Swahili Village, 69% of dwellings have cement screed floors,³⁷ while in Bondeni the majority (86%) have unfinished earth floors and only 14% have screeded floors. Similarly, in Swahili Village, about one-quarter of the dwellings have plastered internal walls and 26% have walls with an earth render, which compares with 84% of dwellings with internal walls rendered in earth in Bondeni. This suggests that the incidence of disease vectors in dwellings in Swahili Village is likely to be lower than in Bondeni.

³⁴Other vermin and vectors that live within dwellings include rats, mice, cockroaches, fleas and bedbugs. Amongst the diseases they can transmit are plague, dysentery, typhus, hepatitis and relapsing fever (Carrol, 1990).

³⁵McGranahan (1993) remarks that cracked walls and earth floors are among the living conditions associated with poverty which would be undesirable even if they did not promote insect infestation.

³⁶A floor is deemed non-durable if it is made of earth or timber; otherwise it is classified as durable (RoK, 1986). A 1993 housing survey cited in the 1997-2001 Plan determined that 24.7% of housing had durable floors—'durable,' however, is not defined.

³⁷The *Analytical Report: Volume X—Housing* (RoK, n.d) indicates that 27.4% of all households (15.8% and 67.4% in rural and urban areas respectively) have a cement floor finish in the dwelling in which they live.

Table 6.8: Quality of construction of dwellings (percentage frequencies rounded and [scores*] in brackets)

		SWAHILI VILLAGE		BONDENI	
		Owner	Tenant	Owner	Tenant
Floor finish	Compacted earth	42	18	84	86
	Cement screed	54	82	16	14
	Burnt bricks	4	0	0	0
	[Score]	[1.96]	[2.13]	[2.02]	[1.68]
Wall finish	Earth render	31	21	79	88
	Bag wash	46	21	9	7
	Plaster	19	32	9	0
	Paint	4	25	4	5
	[Score]	[2.00]	[1.94]	[2.16]	[1.67]
Windows	Timber shutters	69	59	95	93
	Timber frame with grazing	23	22	0	3
	Metal casement with glazing	8	19	5	3
	[Score]	[2.13]	[1.96]	[2.12]	[1.82]
Aggregate score		[6.09]	[6.03]	[6.30]	[5.22]

*In calculating the score, the category "Poor" (i.e. poor quality/in need of substantial maintenance/repair works) is given a score of 1, the category "Fair" (i.e. average quality/in need of minor maintenance/repair works) a score of 2; and the category "Good" (i.e. good quality/needing no maintenance/repair works) a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00. The aggregate score is the sum of the three scores for the individual elements (floor, walls and windows) which generates a scale with a maximum value of 9.00 and minimum of 3.00.

Closer appraisal of the quality of dwellings in Bondeni shows that there is no significant difference between the internal finishes in dwellings occupied by owner households and those in which tenant households live. Floors in 84% of dwellings inhabited by owner households have compacted earth floors as do 86% of those of tenant households. Similarly, 79% and 88% respectively of owners' and tenants' dwellings have earthen walls, and 95% and 93% respectively have timber shutter windows (Table 6.8). However, in Swahili Village, 82% of dwellings occupied by tenants have a cement screed floor compared with 54% in the case of owners; and 32% of dwellings accommodating tenants have plastered walls compared with 19% of owners' dwellings. This can possibly be explained by the fact that owners are able to command higher rent from rooms with better finishes.

Table 6.8 also summarizes aggregate scores for the internal finishes in dwellings occupied by the different tenure groups. While dwellings occupied by owner and tenant households in Swahili Village are almost at the same quality level, in Bondeni, the quality of dwellings inhabited by tenants is definitely inferior to the quality of owner-occupied dwellings. Indeed, the quality of the dwellings occupied by tenants in Bondeni is the lowest of all.

6.3.5.2 Ventilation and Lighting

Indoor air pollution is an extremely serious problem in informal settlements (Page, 1988). Indeed, poor quality indoor environments present a major environmental hazard. High levels of indoor air pollution from the use indoors of open fires or inefficient stoves for cooking and/or

heating possibly represent the single most serious health impact from air pollution worldwide (UNCHS, 1996a).³⁸ Smoke indoors is commonly worse than outdoors in low-income communities (McGranahan, 1993). Women are most at risk as their daily domestic chores—cooking, washing and child care—confine them to the environs of the dwelling, and they may spend several hours a day at the stove; infants and young children who constantly remain with their mothers may likewise be exposed to the smoke and fumes³⁹ (Dankelman and Davidson, 1995; Hardoy et al., 1992; Satterthwaite, 1993). Coupled with overcrowding, dampness and poor ventilation, indoor air pollution can be grievously damaging to health or even fatal.⁴⁰ Good ventilation can significantly reduce the indoor air pollution problems (McGranahan, 1993). In addition to being a major adjunct to health, *appropriate* ventilation is important also for aesthetic reasons (such as the control of odours) and for the maintenance of thermal comfort both in the heat and in the cold (Macpherson, 1979:70, *italics his*).⁴¹

In Bondeni, the windows are almost universally timber shutters (94%) which allow virtually no light into rooms if closed during daylight hours and only limited ventilation. In Swahili Village, 64% of rooms have timber shutters, and another 28% have timber frame windows with glazing (Table 6.7). Almost all rooms in houses in both *majengos* have only one window. Still, most householders (96% and 86% of owners and tenants respectively in Swahili Village, and 80% and 68% of owners and tenants respectively in Bondeni) are satisfied with the level of natural light in the rooms during daylight hours when the windows are open. They are equally satisfied with the ventilation (92% and 86% of owners and tenants respectively in Swahili Village, and 76% and 63% of owners and tenants respectively in Bondeni) in the dwellings. This is despite the fact that, in numerous cases, food is cooked in the dwellings on charcoal stoves.⁴² However, with respect to ventilation in dwellings, neither Swahili Village nor Bondeni falls into any of the climatic zones in Kenya in which cross-ventilation is a cardinal design issue affecting internal thermal comfort.⁴³

³⁸Chronic effects of smoke inhalation include inflammation of the respiratory tract, which in turn diminishes resistance to critical respiratory infections (Hardoy et al., 1992; Satterthwaite, 1993). In Kenya, upper respiratory tract illnesses are the most commonly reported out-patient disorder, followed by diarrhoea, malaria, accidents and skin disorders. Respiratory infections are more readily transmitted in the overcrowded and poorly ventilated conditions of informal settlements (Lamba, 1994).

³⁹There is frequently more exposure to air pollution in smoky kitchens than outdoors (McGranahan, 1993; McGranahan et al., 1996). Cooking stoves are typically vented inadequately, thereby allowing dangerous pollutants to concentrate in even the most open dwellings (Page, 1988). Exposure to pollutants combined with malnutrition may retard growth in children, resulting in smaller lungs and greater prevalence of chronic bronchitis (Hardoy et al., 1992; Satterthwaite, 1993).

⁴⁰The early sanitarians who considered overcrowding as inimical to health were unequivocally correct, because of the opportunity it offers for the transmission of disease, whether the disease is air-borne, conveyed by contact or transmitted by some other vector (Macpherson, 1979).

⁴¹Of all the environments to which humans may adapt, unquestionably, it is the thermal environment which most affects their bodies and is most affected by their shelters (Woolard, 1979).

⁴²See Section 8. for further discussion on sources of energy for domestic cooking.

⁴³See Majale (1986) for an exposition on the implications of climate on design of low-cost housing in Kenya.

Table 6.9: Gender and status of owner (percentage frequencies rounded by settlement)

	<u>SWAHILI VILLAGE</u>	<u>BONDENI</u>
Male	52	59
Female	48	40
Resident	59	65
Absentee	41	35

6.4 Characteristics of Owners

6.4.1 Gender and Status of Owners

The majority of the houses in the two *majengos* are still owned either by the original allottees or have been inherited by their spouses or progeny. Ownership of some houses has, however, changed hands all together. What is conspicuous, though, is the ownership composition (Table 6.9). In Swahili Village, almost one in two owners are women, while in Bondeni they constitute 40% of owners. Traditionally, women in most communities in Kenya are not entitled to own land or other property. Therefore, to find such a high number of female property owners in urban areas certainly seems extraordinary.⁴⁴ However, given the historical background of *majengos*, whereby widows or progeny (including female offspring) succeed to the houses of the original allottees, it is by no means inexplicable. Closer analysis of length of residence will reveal that the mean number of years that female owners have lived in their dwellings is 35.3 in Swahili Village (median=33.5) and 46.3 in Bondeni (median=45), which suggests that they did indeed inherit the houses.⁴⁵

Another variance in ownership patterns with most other informal settlements in Kenya is the high proportion of resident landlords in the two *majengos*. In Swahili Village and Bondeni respectively, 59% and 65% of owners live in their houses together with their tenants (Table 6.9).⁴⁶ In the former *majengo*, one-half of the male owners and 69% of women owners reside in their houses, compared with 64% and 67% per cent of male and women owners respectively in the latter. Where the owner lives is an important issue insofar as it might affect how they behave towards their tenants;⁴⁷ many observers consider that resident landlords tend to behave more sympathetically than those who live elsewhere (UNCHS, 1989).⁴⁸

⁴⁴However, in Gaborone (Botswana) women outnumber men as landlords among the urban poor living in informal settlements due to a number of factors, including that women are not discriminated against in terms of legal access to plots through the Self-Help Housing Scheme (SHHA) (Datta, 1995).

⁴⁵In Mexico, Varley (1995) found that numerous women rent property to low-income households, and renting has even been seen as a source of income which is particularly appropriate for women, because of their presumed inability to operate other enterprises. The most common means into landlordism appears to have been inheritance; no woman had purchased a property with the specific intention of letting it.

⁴⁶A study of three other informal settlements in Nakuru (Kaptembwa, Kwa Rhoda and Mwariki) found that most of the owners and developers lived elsewhere in the town (Syagga and Malombe, 1995). In Nairobi's largest informal settlement, Kibera, only 22% of landlords are resident. The high rate of absentee landlordism is largely due to the fact that the housing stock constructed is explicitly for rental purposes and not for owner occupation which is suggested by the high average number of rooms (10.33) per structure; the average landlord rents over 12 rooms (Amis, 1984; 1988). An even higher degree of absentee landlordism was found by Andreasen (1989) in Kiandutu in Thika which, by 1985, accommodated 13% of the town's population of whom only 3% were house owners.

Table 6.10: Socio-economic characteristics of household head: residential mobility (percentage frequencies by tenure group rounded)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
<u>GENDER OF HOUSEHOLD HEAD</u>				
Male	52	69	57	56
Woman	48	31	42	34
<u>PLACE OF BIRTH OF HOUSEHOLD HEAD</u>				
"Home" rural area	24	52	13	46
Another rural area	0	14	4	5
In this town	72	31	69	41
In another urban centre	4	3	13	9
<u>LAST PLACE OF RESIDENCE</u>				
In this settlement/none	72	35	56	34
Another settlement in this town	16	21	18	24
Settlement in another urban centre	0	3	2	0
Another residential area in this town	0	14	2	7
Residential area in another urban area	4	0	0	5
"Home" rural area	4	28	18	31
Another rural area	4	0	4	0
<u>MEDIAN LENGTH OF RESIDENCE IN DWELLING</u>				
(with IQRs in brackets) [completed years]	42 (25, 51)	4 (2, 20)	40 (27, 55)	15 (5, 27)

6.5 Household Head Characteristics

The majority of *majengos* manifest significant distinctions from other urban informal settlements in Kenya, and indeed other countries in the South, as a consequence of their historical formation. This is patently reflected in the socioeconomic profiles of household heads as the following analysis will reveal.

6.5.1 Gender of Household Head

There have been significant changes in the size and structure of households in most societies in recent decades. One of the most dramatic has been the increase in the number of woman-headed households which are now thought to comprise one fifth of all households worldwide—albeit with great variations between countries (UNCHS, 1996a). In numerous low-income settlements in the South, 30% or more of households are headed by women either due to the fact that the male partner is temporarily absent or because of separation or death (Satterthwaite, 1993).⁴⁹

⁴⁷As Datta (1995) affirms, the relationship between landlords and their tenants is dependent upon a number of factors: the first which makes an obvious difference is whether the landlord resides on the same property as his/her tenants. The present study, however, did not concern itself with landlord-tenant relationships.

⁴⁸According to Gilbert (1993), however, the perception of landlordism and renting is typically unfavourable. In Kibera, Amis (1984) found that, paradoxically, in some cases it is the landlords who are socially nearest to their tenants who are the harshest, the reason being that the income from rent is their sole source of livelihood. In Harare (Zimbabwe), absentee landlords were preferred (by women) because conflicts between tenants seemed to be easier to handle (Rakodi, 1995).

⁴⁹Various factors have been recognized as affecting the incidence of female headship in the wider literature, with migration and female labour force participation identified as particularly significant in Latin America, and cultural factors and marriage traditions more important in other regions. Structural adjustment has also lately been acknowledged as occasioning female headship (Bradshaw, 1993).

Going by the evidence, women-headed households are highly concentrated in rental accommodation; they are more apt to be tenants or sharers than owners (UNCHS, 1989; 1993a).

In Kenya, 35.2% of all households (38.4% in rural areas and 24.2% in urban areas) have women heads (RoK, n.d.).⁵⁰ As women customarily have no inheritance rights, migrating to urban areas presents them with the only real income-earning opportunity.⁵¹ Most woman-headed households are disadvantaged owing to low education levels and limitedly marketable skills. Hence, they are commonly engaged in poorly paying employment, and a majority are constrained to live in informal settlements.⁵² Women-headed urban households are thus a particularly vulnerable group (Amis, 1990; 1996; Syagga and Malombe, 1995; Thurman, 1993).

Consistent with expectations, more households in the two *majengos* are headed by men than women. Of all the households in the two *majengos*, 21% have women heads. The proportion of women-headed households in the respective settlements is similar; 20% in Swahili Village and 21% in Bondeni. On the other hand, in Swahili Village, 52% of owner households and 69% of tenant households surveyed had male heads, compared with 57% and 66% respectively of owner and tenant households in Bondeni.⁵³

Woman-headed low-income urban households in the South commonly encounter particular problems with respect to housing and basic services. Coupled with inadequate provision of infrastructural services, women's vulnerability to environmental hazards is greatly increased because their practical needs are seldom accorded the priority they warrant in public housing and basic service programmes.⁵⁴ However, 'gender blindness' is being increasingly recognized (Satterthwaite, 1993; UNCHS, 1996a). Indeed, the 1994-1996 Development Plan (RoK, 1994:253) notes: "projects identified have not responded to the women's need". Accordingly, it outlines proposals to strengthen gender orientation.

⁵⁰Amis (1990) cites that a 1979 survey estimated that 24% of Nairobi households were headed by women. In 1987, an estimated 30% of households were woman-headed; in three informal settlements (Mathare, Kibera and Korogocho) this figure rose to 60% and was expected to increase. Amis (1990:91) argues that the most convincing interpretation of this transformation is that: "men in economic crisis simply walk away."

⁵¹For urban management, the proclivity for woman-headed households to migrate to urban areas has meant that low income housing schemes in several African countries have often had high proportions of women applicants (Lee-Smith and Stren, 1991). Indeed, some women have become owners of property not only in informal settlements, but also site and service schemes (Syagga and Malombe, 1995).

⁵²The *Analytical Report: Volume X—Housing* (RoK, n.d) indicates that in almost all districts, male-headed households live in better dwellings than those headed by women.

⁵³Data on housing tenure by gender of household head presented in the *Analytical Report: Volume X—Housing* (RoK, n.d) show a higher owner occupation rate for women-headed households (82.1%) than their men counterparts (67.9%).

⁵⁴According to Satterthwaite (1993), women are more vulnerable to several environmental hazards owing to their sex (i.e., as an outcome of biological differences) and some because of gender (i.e., as a consequence of the particular roles that women have which are determined by social, economic and political structures).

6.5.2 Place of Birth of Household Head

The three-stages in the trajectory of the (immigrant) urban poor identified by John Turner (1967)—bridgehead, consolidator and status-seeker—cannot be applied to the majority of householders in informal settlements in Kenya, and are even less applicable in the case of *majengos*.

Birthplace statistics evince that the majority of owners in both Swahili Village (72%) and Bondeni (69%) were born in Machakos and Nakuru respectively; this reflects the fact that most of the owners have inherited their houses from the original allottees. Conversely, 66% of the tenant heads of household in Swahili Village and 51% of those in Bondeni were born in their home rural area or another rural area. However, with regard to access to good quality housing, Hardoy and Satterthwaite (1989:66) observe that migration is not the problem; "it is not origin but lack of income which prevents people from acquiring better accommodation".

6.5.3 Length of Residence in the Dwelling

All residential neighbourhoods experience a turnover of population and, depending on the characteristics of the in- and out- migrants, this may produce radical changes in the physical and social characteristics of the area (Ward, 1982b). An essential feature of Turner's model (Table 4.2) is the relatively low turnover of informal settlements residents.

Studies of low-income neighbourhoods in the South evidence that home owners tend to have lived longer in urban areas and informal settlements than tenants (Miah and Weber, 1990; Tipple and Willis, 1991; Gilbert and Varley, 1991; Gilbert, 1993). Gilbert and others (1997:135) note that this is especially so in regions where many tenants wish to return "home" to the countryside.⁵⁵ This is certainly the case in both *majengos*. In Swahili Village, owners have lived in their dwellings for 42 years at the median (mean=39.2) compared with 4 years at the median (mean=10.7) for tenant heads. This compares with 40 years at the median (mean=40.7) and 15 years at the median (mean=16.4) for owner and tenant heads respectively in Bondeni.⁵⁶ The long residence of owners again reflects the fact that most of them are the spouses and progeny of original allottees and have lived in the dwellings for the best part of their lives. Given the duration of residence in their houses, owners are likely to be more concerned about the quality of the environment in the settlements.

⁵⁵UNCHS (1989), however, holds that not very much is known about the mobility of tenants in most Southern cities; however, the information that is available indicates a great deal of variation.

⁵⁶In Kibera in Nairobi, Amis (1984) found tenancies average 2.6 years, while in Kiandutu (Thika), Andreassen (1989) found that 50% of the population had lived in their dwellings for less than 18 months.

Table 6.11: Socio-economic characteristics of household head: ownership of property elsewhere and intention of returning to "home" rural area (percentage frequencies by tenure group rounded)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
<u>OWNERSHIP OF LAND/PROPERTY ELSEWHERE</u>	12	72	47	39
<u>LOCATION OF LAND/PROPERTY</u>				
Home rural area	0	86	52	58
Another rural area	33	14	5	13
In this town	67	0	29	25
Another urban centre	0	0	14	4
<u>INTENTION OF RETURNING TO HOME RURAL AREA</u>				
Yes	0	66	20	41
Going to another rural area	4	10	4	5
Going to another urban centre	0	0	0	2
Remain in this town	96	24	76	53

6.5.4 Ownership of Land or Other Property Elsewhere

Research, in general, is showing that a majority of landlords in the South operate on a small scale (UNCHS, 1993): numerous households rent their accommodation from "petty landlords", typically low-income residents who live on the same site or nearby in the same settlement (Mitlin, 1997).⁵⁷ In Africa, the rental market has unquestionably been dominated by small landlords (Lloyd, 1990).

Only 12% of owners in Swahili Village declared ownership of other property, in most cases (67%) elsewhere in Machakos. This compares with 47% of their opposite number in Bondeni where, the other property owned by 29% of this number was located elsewhere in Nakuru. This supports the notion that most owners in the two *majengos*, in particular those in Swahili Village, generally fall into the category of small-scale landlords. None of the tenants in Swahili Village owned property in Machakos, but one-quarter of tenant householders in Bondeni claimed ownership of property in Nakuru. On the other hand, 72% of tenant heads of household in Swahili Village claim ownership of land or property either in their home rural area or another rural area compared to only 12% of owners. This contrasts with Bondeni where 47% and 39% of owner and tenant householders respectively own land or property elsewhere.⁵⁸

⁵⁷There are, no doubt, several cities which contain a number of large landlords; however there are notably few examples of landlords controlling a high proportion of the rental housing stock UNCHS, 1993). Kibera, Kenya's largest informal settlement, is one of the rare examples (see Amis 1984). See also Kumar (1992) for a detailed analysis of the phenomenon of low-income landlordism in social formations in the South.

⁵⁸A study of three other informal settlements in Nakuru evinced that 71% of owners possessed land in rural areas (Syagga and Malombe, 1995). Malombe (1993) similarly affirms ownership of land in rural areas by 71% of owners and 75% of tenants in informal settlements in Nakuru. Also, Rakodi (1995a) cites that, in 1984, nearly 90% of industrial workers in Kenya had access to farmland, however small in area, and left their wives to live permanently in rural areas. And a study she quotes estimated that, on average, only 50% of household subsistence were met by wages.

6.5.5 Intention to Return to Home Rural Area

The traditional conception of residents of urban informal settlements in Kenya being transient migrants who will eventually return to their home rural areas is changing rapidly. This is largely due to the diminishing size of rural land holdings and exhaustion of their agricultural potential, some to the point that they have become inadequate for even subsistence farming, thereby compelling entire households to migrate to urban areas in search of a living. Moreover, there is an increasing urban-born population in informal settlements.

Primarily due to their ownership of land in their rural home areas, 66% and 41% of tenant heads in Swahili Village and Bondeni respectively propose to eventually settle back there. Conversely, among the owner heads, an overwhelming 96% in Swahili Village and 76% in Bondeni intend to remain in Machakos and Nakuru respectively. This is not surprising given the fact that most were born in the two towns, and underlines their commitment to an urban future.

Closer analysis of householders' intention of returning to their respective "home" rural areas will reveal that in Swahili Village, 95% of tenant heads of household who own land "at home" intend to return there; the remainder propose to go to another rural area. In Bondeni, 93% of tenant household heads who own land "at home" plan to return there; the others will remain in Nakuru. Among the owners in Bondeni who own land "at home", 55% intend to return there, 18% have a mind to move to another rural area, while the rest will remain in Nakuru. One half of these owners were born in Nakuru and the other in their home rural area. All those who plan to remain in Nakuru, however, were born there.

In Swahili Village, 63% of women tenant heads of households claimed ownership of land in their home rural area, and all intend to return there. All women owners in Swahili Village intend to remain in Machakos, even the 8% who own land in another rural area. In Bondeni, 37% of women owners own land or property elsewhere (43% "at home", 14% in another rural area, and 43% elsewhere in Nakuru town). One third of those who own land "at home" aim to return there, one third plan to move to another rural area, and one third will remain in Nakuru. One half of the 20% of women tenant heads of household who own land or property elsewhere own land in their home rural area and the other half in another rural area. All the women tenant heads of household who own land in their home rural area propose to return there.

Table 6.12: Measures of household size, composition and occupancy by tenure (medians, IQRs, and percentage frequencies rounded)

	SWAHILI VILLAGE		BONDENI	
	Owners	Tenants	Owners	Tenants
Household size (persons)	6	5	5	5
	(5, 9)	(2, 7)	(3, 8)	(3, 7)
Number of adults (persons)	4	2	3	2
	(3, 7)	(2, 5)	(2, 4)	(2, 3)
Rooms occupied	3	1	3	1
	(2, 4)	(1, 2)	(2, 5)	(1, 2)
Occupancy rates (persons per room)	2.1	3.0	1.8	3.5
	(1.5, 3.5)	(1.6, 5)	(1, 2.8)	(1.5, 6)
Percentage in one room	5	55	19	61
Percentage with 2.5 persons per room or more	37	54	28	58

6.6 Household Characteristics

6.6.1 Household Size and Composition

There is a general tendency for tenant households in cities in the South to be smaller than owner households.⁵⁹ This is primarily due to the fact that owner households tend to be older and commonly have more children (Gilbert *et al.*, 1997; UNCHS, 1993).⁶⁰

The median household size in Kenya is 4.0 persons (RoK, n.d.). Owner households in Swahili Village are indeed larger, with 8.2 members at the mean (median=6.5) compared to a mean of 4.5 (median=5) for tenants. In Bondeni, the mean owner household size is 6.0 (median=5), while tenant households have a mean of 4.9 (median=5) persons. Both owner and tenant households in the Swahili Village and Bondeni are larger than the average low-income household in the towns in which they are located, which is 3.4 and 4.2 in Machakos and Nakuru respectively (RoK, 1986).

Owner households in Bondeni in which heads of household own land in their "home" rural area and aim to return to there have 3.5 members at the mean (median=3.5); this compares with a mean of 7.1 (median=6.0) in the case of those with heads with an intention of remaining in Nakuru. In Swahili Village, the mean number of persons in households in which the heads own property "at home" and have a mind to return there is 3.0 (median=3.0), while those in which heads plan to remain in Machakos have 4.5 persons at the mean (median=4.0). The mean size of tenant households in Swahili Village with heads who own property in their "home" rural area and intend to return there and those with heads proposing to remain in Machakos is 2.5 (median=1.0) and 5.5(median=5.5) respectively.

⁵⁹UNCHS (1989) remarks that although evidence that size of household is linked to tenure does exist, it is less important than most writers would predict on the basis of Northern experience .

⁶⁰Malombe (1993) affirms that tenant household heads in informal settlements in Nakuru have fewer children than owners, mainly because they are younger.

The number of adults in the household is indicative of a householder accommodating members of the extended family, who will in many cases also be dependent on him or her (Tipple and Willis, 1991). The survey findings suggest that 56% of owner householders and 24% of tenant householders in Swahili Village house members of the extended family, compared to 29% of both owner and tenant householders in Bondeni.

6.6.2 Rooms Occupied and Occupancy Rates

Inadequate housing can be manifested in diverse forms which may appear individually or in combination, and may or may not be regarded locally as a problem. Crowding,⁶¹ or inadequacy of space either in terms of area or the number of separate rooms, is a common indication of inadequate housing (UNCHS/ILO, 1995).⁶² The median number of rooms occupied by owner and tenant households in Swahili Village is 2.5 (mean=3.2) and 1 (mean=2.0) respectively. In Bondeni, owners occupy 3 rooms at the median (mean=4.0), while tenants occupy 1 room at the median (mean=2.3)

Room occupancy refers to the number of habitable rooms there are in a dwelling and the number of persons that comprise the household that lives in it, and can be used as a measure of overcrowding.⁶³ Despite being smaller in size than owner households, tenant households in the two settlements have higher room occupancy rates. In Swahili Village, the median occupancy rate for tenant households is 3.0 (mean=2.9) compared with 2.1 at the median (mean=3.0) for owner households; corresponding figures for Bondeni are 3.5 (mean=3.6) and 1.8 (mean=2.4) respectively. Using the UHS threshold for overcrowding of 2.5 persons per room, owner households have to cope with overcrowded conditions less than the tenant group.⁶⁴ In Swahili Village, 45% and 57% of owner and tenant households respectively have 2.5 or more persons per room, compared with 31% and 61% respectively of owner and tenant households in Bondeni.

6.6.3 Households Occupying One Room Only

Access by a household to only one room is a serious constraint on not only the health, but also the convenience of those affected. Not only is disease more easily transmitted and more difficult to recover from within a household occupying a single room, but social problems and pathologies are likely to be more acute (Willis and Tipple, 1989) It has been estimated that 17% of the

⁶¹See Clausson-Kaas *et al.* (1996) for a comprehensive discussion on crowding, including definitions, perceptions and indicators of crowding, and a range of indicators that could improve the measuring of this potential health hazard. See also Miah and Weber (1990).

⁶²In the predominantly low-income residential areas in cities in the South, an average of four or more persons per room is not uncommon (UNCHS, 1996a).

⁶³Clausson-Kaas and others (1996) point out that crowding is a complex subject, and the subjectivity of its definition is not limited to the residents of crowded dwellings and neighbourhoods.

⁶⁴Overcrowding has long been a problem in urban areas in Kenya. Indeed, the 1966-1970 Development Plan (1966:334) affirms: "Overcrowding is extremely serious among urban African households. Even at the high ratio of 3 persons per room, approximately 49% of all African households are overcrowded. Overcrowding is even higher in one-room housing units."

Table 6.13: Satisfaction with living conditions within dwelling (percentage frequencies by tenure group rounded)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Landlords</u>	<u>Tenants</u>	<u>Landlords</u>	<u>Tenants</u>
<u>Size of dwelling</u>				
Satisfied	80	62	64	42
Indifferent	16	10	5	7
Dissatisfied	4	28	31	51
<u>Overcrowding within dwelling</u>				
Yes	32	46	47	59
<u>Privacy within dwelling</u>				
Satisfied	68	69	51	31
Indifferent	8	7	16	19
Dissatisfied	24	24	33	51

world's housing stock comprises one-room dwelling units, of which approximately three-quarters are to be found in the South (UNCHS/ILO, 1995).⁶⁵ In Africa, some 35% of urban dwellings are single rooms (UNCHS, 1987a). In Nairobi, a study of four informal settlements found that 80% of households live in only one room.⁶⁶

In Swahili Village, 55% of tenant households occupy one room only compared with 5% of owner households. In Bondeni 19% and 61% of owner and tenant households respectively have access to one room only.

6.6.4 Satisfaction with Living Conditions within the Dwelling

The principal concern with size of dwelling is density: too small a dwelling would mean overcrowding, which exposes households to health, physical and other hazards (Laquian, 1983). Owner and tenants householders in the two *majengos* were asked to indicate their degree of satisfaction (satisfied, indifferent, dissatisfied) with living conditions in their respective dwellings. As the former's dwellings comprise more rooms than those of the tenant group, one would expect *a priori* that they would be more satisfied with their levels of room consumption than the tenant stratum, which indeed they are.⁶⁷ Still, there were complaints of overcrowding amongst the owners, albeit fewer than in the case of tenants.⁶⁸ Householders in Bondeni were clearly the least satisfied with their accommodation (Table 6.13).

⁶⁵UNCHS/ILO (1995) point out that this figure hides those larger units which are occupied by several households, each with one room, as is common in West Africa.

⁶⁶Kenya Consumers' Organization (1992), *Basic Needs Survey of the Urban Poor: Baseline Survey of Nairobi City*, cited by Lamba (1994).

⁶⁷In Manyatta and Nyalenda in Kisumu, 62% and 60% of owners and tenants respectively considered the number of rooms they occupied adequate, as did 88% of owners and 23% of tenants in Mwariki and Kaptembwa in Nakuru (Syagga and Malombe, 1995).

⁶⁸Concern with overcrowding as an index of the housing shortage in general derives from the popular assumption that it is a health hazard and causes deleterious social behaviour (Odongo, 1979).

Table 6.14: Satisfaction with living conditions within the dwelling (median [and mean in brackets] number of persons per room)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
<u>Size of dwelling</u>				
Satisfied	2.0 [3.0]	2.8 [2.8]	1.4 [2.6]	2.0 [2.6]
Indifferent	—	—	—	2.0 [1.8]
Dissatisfied	3.5 [3.5]	3.0 [3.1]	2.0 [2.2]	5.0 [4.6]
<u>Overcrowding within dwelling</u>				
No	2.0 [2.6]	2.0 [2.4]	1.5 [2.0]	1.3 [1.9]
Yes	2.5 [3.8]	3.0 [3.4]	1.9 [2.9]	4.5 [4.2]
<u>Privacy within dwelling</u>				
Satisfied	1.8 [2.3]	2.0 [2.4]	1.3 [1.9]	1.5 [2.3]
Indifferent	8.0 [8.0]	—	2.0 [2.1]	3.5 [3.3]
Dissatisfied	3.0 [3.0]	4.0 [4.1]	1.9 [2.1]	4.0 [4.2]

As mentioned above, the UHS threshold for overcrowding is 2.5 persons per room. Owner households where there were complaints of overcrowding had occupancy rates of 2.5 persons per room at the median (mean=3.8) in Swahili Village and 1.9 (mean=2.9) in Bondeni. Tenant households where there were complaints of overcrowding had 3.0 persons per room at the median (mean=3.4) in Swahili Village and 4.5 at the median (mean=4.2) in Bondeni.

Privacy operates at several levels: between individuals, and within and between households, neighbours and larger groupings (Kellett, 1993). In a theoretical analysis of the concept of privacy which emphasises its role as an interpersonal boundary process, Altman (1976) cites a number of definitions which underline seclusion, withdrawal, and avoidance of interaction with others. None of these conditions is attainable in circumstances where a multi-person household has access to only one room. It is not surprising, therefore, that those least satisfied with the privacy their dwelling affords them are tenant householders in Bondeni. These households have occupancy rates of 4.0 at the median (mean=4.2).

Table 6.14 presents a summary of owner and tenant householders' degree of satisfaction (satisfied, indifferent, dissatisfied) with the size of their dwellings and the privacy within the dwellings. Owners in Swahili Village have the highest overall level of satisfaction, followed by

Table 6.15: Satisfaction with living conditions within the dwelling (scores*)				
	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Size of dwelling	2.76	2.34	2.33	1.91
Privacy within dwelling	2.44	2.45	2.28	1.82
Aggregate score for size and privacy in dwelling	5.20	4.79	4.61	3.73

*In calculating the score for satisfaction with size and privacy, the category "Satisfied" is given a score of 3, the category "Indifferent" a score of 2, and the category "Dissatisfied" a score of 1. This creates a scale with a maximum value of 3.00 and minimum of 1.00. To compute the total score, both these values are added together, thereby generating a scale with a maximum value of 6.00 and minimum of 2.00

Table 6.16: Socioeconomic characteristics of household head - Employment (percentage by tenure group rounded)

		<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
		<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
<u>Employment status:</u>	Employed	12	28	16	36
	Self-employed	32	52	13	39
	Casual	4	7	0	7
	Unemployed	0	10	4	15
	Retired	0	0	0	3
	Landlord	52	3	60	0
<u>Sector in which employed:</u>	Formal	4	12	18	20
	Informal	92	84	82	78
	Either	4	4	0	2

NB. Owners whose sole source of income is the rent they receive from their tenants are counted as being employed in the informal sector

tenants in the same settlement. Tenant households in Bondeni are clearly the least satisfied with the living conditions in their dwellings.

6.7 Employment Characteristics of the Household Head

The ILO defines employed people as those who, during a specified brief period of time (one week or one day) have worked, had a job but did not work, or were self-employed. A definition of unemployment, on the other hand, is extremely problematic in the South; the ILO definition includes those who are without work but available for and actively seeking employment (UNCHS/ILO, 1995).⁶⁹ Among the owner heads of household interviewed, only 4% in Bondeni were unemployed. The unemployment rate was higher among tenant heads of household; 10% and 15% in Swahili Village and Bondeni respectively. In comparison, statistics presented in the 1997-2001 Plan indicate that the unemployment rate in 1994 was 18.5%.

The informal sector plays a significant role in providing employment in both rural and urban areas in the South; indeed, in many cities it provides more than half the income-earning opportunities (UNCHS/ILO, 1995).⁷⁰ Statistics presented in the 1994-1996 Plan indicate that the urban informal sector employed between 6.8% and 8.3% of the total labour force in Kenya.

⁶⁹In relation to this, Gilbert and Gugler (1982) hold that open unemployment constitutes only one facet of urban surplus labour. A second facet is 'underemployment', which they define as "the underutilization of labour" (Gilbert and Gugler (1982:68). Then there is what they term 'misemployment', whereby labour may be employed full time, but produces goods and services that can be judged to contribute little to social welfare. They cite begging as a prime example. Alternatively, underemployed persons, as defined by ILO, are those who have worked less than the normal duration (visible underemployment), or those whose skills have been underutilized (disguised underemployment), or those whose productivity is inadequate (potential underemployment).

⁷⁰The World Bank (1989:138) affirms that small owner-operated enterprises that function outside the official regulatory framework contribute substantially to employment and productivity. Moreover, contrary to their image as "tax evaders", numerous entrepreneurs in the informal sector pay a significant proportion of their income in some form of tax. The ILO estimated that more than 40% of informal sector enterprises in Sub-Saharan countries pay fiscal taxes or registration. These enterprises are also subject to indirect taxation—through their purchases from formal sector retailers, they absorb the costs of taxes on sales, fuel and imports.

Table 6.17: Socio-economic characteristics of household head - Employment (percentage by tenure group rounded)

<u>Nature of employment</u>	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Office	0	4	10	2.2
Shop/other retail activity	16	48	10	35.6
Service (educational/medical/etc.)	4	16	3	8.9
Manufacturing/crafts	0	0	3	2.2
Skilled/semi-skilled manual	0	4	8	31.1
Unskilled manual	4	16	0	13.3
Landlord	56	8	0	2.2
Other	20	4	67	4.4

The informal sector certainly provides vital employment opportunities for household heads in the two *majengos*. Owners whose only income is the rent they receive from their tenants necessarily derive their livelihood from the informal sector. Amongst the tenant household heads, 84% and 78% in Swahili Village and Bondeni respectively earn a living in the informal sector (Table 6.16). Of the tenant heads who are self-employed, 80% in Swahili Village and all in Bondeni are engaged in informal sector pursuits. As one might expect, owner and tenant heads who work as casual labourers will work in either the formal or informal sector depending on where employment opportunities arise.

Men often regard informal sector activity as a temporary necessity before securing formal employment;⁷¹ for women, however, it becomes a "way of life" (UNCHS, 1994:14). Most poor women in the South are engaged in small-scale, low-paid and unstable activities, and are predominantly unskilled and self-employed.⁷² Many will be engaged in what Baken and others (1991:39) categorize as "marginal retail activities" (hawkers, or small grocery shops catering for the intra-neighbourhood market).⁷³ In Swahili Village, all employed female tenant household heads are engaged in informal sector activity as are about 90% of their counterparts in Bondeni.⁷⁴ Of these, one-half in Swahili Village and about 60% in Bondeni are engaged in some form of retail activity.

⁷¹Early studies, in fact, also regarded informal sector employment as a transitional stage for migrants from rural areas characterized as unskilled and alien to the urban environment (UNCHS, 1988a). A less optimistic view perceives the informal sector as a last resort for people without alternatives, i.e. as a residual urban labour 'sponge' (Livingstone, 1991).

⁷²Stren (1991) observes that an increasing proportion of total employment in African cities since the 1960s has involved small-scale, unregulated, untaxed, and unprotected activities. The majority of individuals engaged in these activities are poor, and a disproportionate number are women. Women play a significant role in the informal sector largely due to their insecure (property) rights (World Bank, 1989). Within the informal sector, women are more concentrated in trade, and men in production (Lee-Smith and Stren, 1991). The World Bank (1989) affirms that for women, the poor, and minority groups, the informal sector is commonly the only outlet for their entrepreneurial capabilities. Small enterprises with low levels of investment and rapid turnover also provide women and other disadvantaged groups with a means of overcoming legal and social restrictions.

⁷³See Baken *et al.* (1991) for a categorization of types of informal enterprises according to what they consider to be three important variables: sector, linkages and labour status.

⁷⁴See Nelson (1988) for a statement on the position of women in the informal sector in general, and on the sexual division of labour in Mathare Valley in particular.

Table 6.18: Socio-economic characteristics of household head—Employment (percentage by tenure group rounded)

<u>Location of employment</u>	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Within the settlement	83	39	74	21
In town	17	50	23	70
Where (casual) employment is found	0	4	0	6
Elsewhere	0	8	3	2

As mentioned earlier, in addition to providing affordable shelter for most low-income households in the South, informal settlements are the chief location of multifarious informal sector employment opportunities. Indeed, in Nairobi, the great majority of small businesses are located in informal settlements (MDC, 1993).⁷⁵ Of the self-employed tenant heads of household in Swahili Village, 60% operate in that *majengo*. Similarly, in Bondeni, 32% of self-employed tenant heads earn their living in the settlement, and another 14% work for employers there.

6.8 Household Ownership of Consumer Durables

Data on income are infamously difficult and problematic to collect. Indeed, as Tym (1984) affirms, household incomes are not only always difficult to measure, but also usually impossible to record accurately. Previous studies have demonstrated the problems in their collection and the difficulty in estimating income from surveys; numerous examples exist of failure to collect data on income with any accuracy or even at all (Amis, 1990; Hellen and Tipple, 1989; Tipple and Willis, 1991, Korboe, 1992; Whittington *et al.*, 1993). Other studies have also consistently found that, in Ghana, expenditure is stated to an average of 2.4 times declared income (Tipple, 1993). However, data on expenditure on food and other major items have been successfully collected and used as a basis for estimating income (Tipple and Hellen, 1986; Hellen and Tipple, 1989).⁷⁶

Attempts to compute income in the present study only served to underscore the futility of trying to do so from survey data. Given that expenditure has been reliably reported in some studies,⁷⁷ a

⁷⁵In 1993, when Matrix Development Consultants (MDC, 1993) prepared their inventory of informal settlements in Nairobi, there were approximately 40, 000 small businesses in the city,

⁷⁶Only data on food expenditure were collected in a survey in 1980. Factors were calculated from earlier work in Ghana by which household expenditure on food could be multiplied to produce an estimate of income. The estimated income determined in this manner was then divided by the household size to produce a per capita estimate (Tipple and Hellen, 1986). On the other hand, Hoddinott's (1992) account of how he collected income data in Karateng, a rural locality in Western Kenya appears, at least to this author, highly implausible! Hoddinott's approach involved asking questions about income "at the beginning of the long rains planting season", which provided "a recognisable benchmark", enabling him to establish "a readily identifiable one-year recall period" (Hoddinott, 1992:82). The income data were cross-checked against data on "major household purchases . . . [including] expenditures on blankets and sheets, baskets and pots, cooking, crockery and eating utensils, . . . clothing, and funeral and *harambee* (community fund-raising events) contributions" (Hoddinott, 1992:82). He contends that because these were "all 'lumpy' purchases, they were subject to smaller recall errors or deliberate under-reporting"! (Hoddinott, 1992:82, exclamation mark mine). See also the field methodology used by Da Corta and Vekatesharlu (1992) to determine economic mobility in rural India.

⁷⁷See, for example, Tipple and Willis (1991).

Table 6.19: Household and per capita monthly expenditures on rent and food by tenure group, KSh per month (median and IQR rounded)

	<u>Swahili Village</u>		<u>Bondeni</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Rent (per month)	–	350	–	250
	–	(230, 500)	–	(200, 313)
Total monthly expenditure on food	2100	1500	3000	2500
	(1350, 2700)	(1150, 1800)	(2000, 5200)	(1800,3600)
Per capita monthly expenditure on food	273	366	750	667
	(158, 410)	(211, 786)	(490, 1183)	(400, 1071)

deliberate attempt was made to collect data on expenditure patterns in the present study.⁷⁸ The disaggregated data were then used to generate expenditure patterns on what the present author considered to be fundamental items. Almost inevitably, there were problems attendant on using expenditure as a straightforward proxy for income. These included the fact that while some owners do not have any expenditure as far as housing is concerned, others pay for water and electricity that tenant households living in their houses consume. Similarly, among tenants, the rent paid includes the cost of water and electricity in some cases, while in others it does not.

Table 6.19 presents a summary of household and per capita monthly expenditures on rent and food. The table shows that tenant households in Swahili Village have to pay more for their accommodation than their counterparts in Bondeni. Conversely, the two tenure groups in Bondeni have considerably higher expenditure on food than their opposite numbers in Swahili Village. Owner households in both Swahili Village and Bondeni have higher total monthly expenditure on food than tenant households. Examination of per capita monthly expenditure on food again shows that the figure is higher for owners than tenants in Bondeni; but in Swahili Village, tenant households' per capita expenditure on food is more than that of owners.

Alternatively, it has been affirmed that where data on income and expenditure are totally unreliable, wealth indicators based on identifiable assets such as radio cassette players, televisions, bicycles or motor cycles can be used to confirm socio-economic status (Tipple and Willis, 1991; Tipple, 1993; Whittington *et al.*, 1993). This being the case, an inventory of household ownership of consumer durables was prepared (Table 6.20). This too proved to be equivocal.⁷⁹ Nevertheless, on the basis of ownership of consumer durables, owners in the two *majengos* appear to be better off materially than tenants.⁸⁰ This is consistent with findings in a

⁷⁸From previous experience (Majale, 1985), the author was cognizant of the inutility of asking household heads directly what their income was. Consequently, no attempt was made to do so.

⁷⁹In Kenya, like in many other countries in the South, and indeed the North, low-income households are able to acquire valuable consumer durables through 'dubious' means at a fraction of the price they would have to pay if they were legitimately acquired. for this reason, the information provided in Table 6.17 must be interpreted with caution as it may present a fallacious account of the relative wealth of the different tenure groups in the two *majengos*.

⁸⁰Edwards (1982) affirms that renting significantly affects the materials standards of low-income groups. Since tenants are obliged to commit a certain proportion (25-30%) of their budgets to the payment of rent, the amount at their disposal for expenditure on food, clothing and education

Table 6.20: Household ownership of consumer durables by tenure group (percentage frequencies rounded)

	SWAHILI VILLAGE		BONDENI	
	Owners	Tenants	Owners	Tenants
Radio	18	35	67	61
Radio cassette player	68	52	62	32
Record player	12	3	2	2
Television	16	7	31	9
Gas cooker	8	0	11	2
Bicycle	20	0	29	20
Motor cycle/scooter	4	0	0	3
Car	8	3	2	2

number of Southern cities that, while there are basic similarities in the kinds of households that own, rent or share accommodation, tenant households tend to be poorer than owner households (Gilbert *et al.*, 1997; UNCHS, 1993a).⁸¹

6.9 Summary

Swahili Village and Bondeni are typical of most informal settlements proliferating in Kenya's rapidly growing urban centres in that the great majority of residents are tenants. All but a few of the "swahili-type" houses in the two neighbourhoods have been extended to increase the number of rentable rooms, but they are mostly in poor physical condition as they have been inadequately maintained. Non-residential, informal income-generating activities—primarily small shops and other retail outlets—can be found in a majority of the houses in both neighbourhoods.

In both *majengos*, landlordism appears to be small-scale and hardly an exploitative activity; it is the sole source of income for most owners, and a financial expedient to supplement incomes from employment for only a minority of owners. Generally speaking, the socioeconomic circumstances of owner households in both Swahili Village and Bondeni are not radically different from those of tenant households. Owner and tenant household do not differ significantly in size and their ownership of consumer durables is comparable. Owner households, however, occupy more rooms than tenant households and are thus, not surprisingly, more satisfied with the size of their dwellings and the privacy therein.

In the following chapter, owner and tenant households' access to and satisfaction with infrastructure and basic services in Swahili Village and Bondeni will be compared as well as their appraisive environmental perceptions.

is evidently constrained. The obligatory payment of rent reduces the 'investment surplus' of the household, restricting the possibility of their becoming home-owners or indeed to put their surplus to any alternative use. Tenants are unquestionably worse off the owners in a material sense, and "tenure *itself* plays an important part in perpetuating differences in material living standards and in widening income inequalities among the urban poor (Edwards, 1982:150).

⁸¹In two informal settlements in Nairobi, Lee-Smith (1990) found that most of the landlords do not fall into the high income bracket. On the other hand, Moughtin *et al.* (1992) distinguish three main tenure groups in another settlement in Nairobi, each with its own peculiar problems: the tenants, who constitute the majority; the owner occupiers, who represent the minority; and the resident landlords who are relatively affluent members of the society.

Chapter Seven

TWO MAJENGOS IN PERSPECTIVE: INFRASTRUCTURE, SERVICES AND ENVIRONMENT

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7.1 Introduction

In numerous cities in the South, environmental degradation from problems of the brown agenda is a day to day reality; and it is the urban poor who are most affected (Leitmann, 1994; Teerlink and Frank, 1993). Deficient water supply and sanitation, inadequate or non-collection and disposal of household solid waste, poor surface water drainage, infestation by insects and rodents, in addition to overcrowding and poor ventilation in dwellings, are among the commonplace problems that characterize informal settlements inhabited by the urban poor majority. The inadequacy of environmental infrastructure is responsible for widespread morbidity and a large number of preventable deaths each year (UNCED, 1992). A number of psychosocial disorders are also associated with poor quality housing and living environments.¹ The analysis of environmental problems at neighbourhood and household level provides information about the perceptions and satisfaction of the residents with regard to access to, and the quality of, infrastructural services. It also provides information about their appraisive environmental perceptions, cognitions and preferences in ranking positive and negative aspects that affect their residential circumstances (Jacobi, 1994; Potter, 1985).

Orthodox upgrading projects are designed to improve the quality of the residential environment in urban low-income informal settlements in which householders are principally owners. It is therefore improbable that they will achieve the anticipated results in the Kenyan context as the vast majority of contemporary informal settlements in Kenya comprise a predominantly tenant population. Following the examination of housing and dwelling conditions and socioeconomic characteristics of owner and tenant households in Swahili Village (which has not been upgraded) and Bondeni (which has been upgraded) in the preceding chapter, the situation with respect to basic infrastructure and services and the quality of the environment in the two *majengos* will now be compared. The chapter will also distinguish between owner and tenant householders in the two *majengos* and ascertain their perceptions, preferences and priorities with respect to their access to basic infrastructure and services and their environmental circumstances.² Lastly, it will investigate whether or not the upgrading project implemented in Bondeni, in the opinion of householders, was efficacious. These ends are aimed at informing environmental planning and management of future upgrading projects in informal settlements in Kenya.

7.2 Availability of Services on Plot

Low-income urban communities in the South have not, in general, benefited from the large investments that have been made in urban infrastructure and have infrastructural service coverage

¹Psychosocial and chronic diseases are becoming a major cause of morbidity and mortality among adolescents and young adults in many urban areas or in particular districts within urban areas (Hardoy *et al.*, 1992).

²Various studies have evidenced some basic similarities between owners and tenant households in a number of urban areas in the South (UNCHS, 1993). The present study proposes to establish whether this is indeed the case with respect to their perception of their environment.

that is far below the average. Deficiencies in municipal services affect poor households, in particular, as they lack the income to pay for them directly and their neighbourhoods yield little or no tax revenues, either for their provision or extension. The rapid growth of informal settlements exacerbates the problem of service extension, and vast numbers of poor urbanites thus remain without access to any basic urban services and facilities. The poor environmental conditions engendered by inadequate infrastructural services create insalubrious conditions. The deficiency of readily available potable water, of sewerage connections (or alternative systems to dispose of human wastes), of garbage collection and basic measures to prevent disease and provide health care, ensure that many diseases are endemic: diarrhoea, dysenteries and typhoid among them (Barnier, 1994; UNCHS, 1987).³

Water supply and sanitation together play a paramount role in promoting health and should always be taken into account in human settlement projects (UNCHS, 1981; RoK, 1986).⁴ Indeed, these elements commonly constitute the only infrastructure provided in upgrading projects. After water supply and sanitation, next in order of importance from both the environmental and health perspective would be solid waste disposal and surface water drainage (UNCHS, 1981; Ramachandran, 1986).

Table 7.1 summarizes the situation with respect to availability of on-plot services in the two *majengos*. Given that Bondeni has benefited from an upgrading project, it is expected that it will have a better level of service provision than Swahili Village. The components of the upgrading project included water supply, water borne sanitation, communal facilities for solid waste disposal, storm water drainage and street lighting. One would thus assume that environmental conditions for the residents would be generally more salubrious than in Swahili Village. Ironically, this is not the case as is evidenced below.

Table 7.1 also shows that, in Bondeni, plots with resident owners are better provided with on-plot services, save in the case of water supply. Conversely, in Swahili Village, plots on which owners live in their houses together with their tenants have a somewhat lower level of provision of on-plot services than those with absentee owners.

³The consequences of deficiencies in safe water supply, in particular, for the environment and health are far more critical in densely populated urban areas than in rural areas, where there is frequently some dependable source of water and waste can dilute more easily (Swyngedouw, 1995). Rural forms of sanitation technology are frequently rendered impractical or even hazardous in urban areas due to high population densities (Harpham *et al.*, 1995)

⁴UNICEF/WHO Secretariats (1979) assert that all countries in the world have some form of commitment to providing their populations with adequate safe water. There is, however, little evidence to indicate that the same recognition is being accorded to basic sanitation, particularly the provision of excreta disposal facilities, as complimentary measures for health and economic development.

7.2.1 Water Supply

Water is both a 'vehicle' for water borne diseases and a breeding ground for various disease vectors;⁵ however, it also precludes the incidence of water-washed diseases (Phillips, 1990). This singular paradox is manifested most notably in municipalities in the South where there always seems to be either too little or too much water (Salem, 1984). Perhaps more than any other basic service or amenity, water—potable and in adequate quantities—distinguishes the better off urban neighbourhoods in the South from their informal sector counterparts (Hollnsteiner, 1979). However, the quantity of water required will depend on location, socio-economic status, local political aspirations and culture; usually all this will be directed by the consumers' ability to pay for the supply (Kirke and Arthur, 1984).

Findings from the 1989 Population Census enumerated in the *Analytical Report: Volume X—Housing* (RoK, n.d.), indicate that piped water is the main source of supply for 31.9% of all households in Kenya. However, according to the 1993 survey cited in the 1997-2001 Development Plan (RoK, 1997), only 14.4% of houses have piped water while less than 40% have access to potable water. In Nairobi, 11.7% of plots in informal settlements have on-plot piped water connections (MDC, 1993) conversely, informal settlements in Nakuru have 83.1% of plots with water connections (Malombe, 1993).

A far greater number of households in Bondeni have access to an on-plot water supply than do households in Swahili Village owing to the upgrading project: water supply is available on 80% of plots in Bondeni, compared to only 30% in Swahili Village (Table 7.1). In both *majengos*, a slightly higher number of plots with absentee owners have an on-plot water supply than do plots with resident owners.

7.2.2 Sanitation

While the environment has a natural capacity to assimilate waste materials, as the density of population increases even bodily discharges cannot be released without risk to public health and detriment to amenity. Both health hazards and potential damage to living conditions are greatest in densely populated urban areas. Adequate sanitation provision, along with waste water disposal systems and stormwater drainage, is vital in urban centres if epidemics are to be avoided, amenity is to be preserved, and anticipated health benefits are to be realized. Indeed, the 1994-1996 Development Plan recognizes that:

Adequate sanitation is a prerequisite for the prevention of environmental pollution, as well as water borne and other related diseases. (RoK, 1994:235)

⁵One half of the world's diseases are transmitted by or through water (Water Newsletter, 1997). See Hardoy et al. (1992) for a summary of the main water related infections with estimates of morbidity, mortality and population at risk.

Table 7.1.: Availability of services on plot (percentage frequencies rounded)

	<u>SWAHILI VILLAGE</u>			<u>BONDENI</u>		
	<u>Resident Owner</u>	<u>Absentee Owner</u>	<u>All</u>	<u>Resident Owner</u>	<u>Absentee Owner</u>	<u>All</u>
Water supply	28	32	30	79	81	80
Water borne sanitation	27	32	29	58	50	56
Non-water borne sanitation	59	59	59	80	64	74
Solid waste disposal	36	32	34	60	56	59
Surface water drainage	44	55	48	78	75	77
Electricity supply	22	32	26	52	39	47

In informal settlements, sanitation systems constitute a critical component of infrastructure and are a cost-effective investment in preventive medicine (Cotton and Franceys, 1991).⁶ Certainly, in Kenya, lack of water-borne sanitation facilities are a fundamental cause of poor environmental health in numerous informal settlements (RoK, 1989).

Table 7.1 shows that households in Bondeni have better access to not only on-plot water borne sanitation (provided within each plot as part of the upgrading project), but also to on-plot non-water borne sanitation systems. Bondeni has approximately twice as many plots with water borne sanitation as Swahili Village. Similarly, 59% of plots in Swahili Village have non-water borne sanitation systems compared to 74% of plots in Bondeni. Plots with resident owners in Bondeni are better provided with on-plot sanitation; but in Swahili Village, more plots with absentee owners have water borne sanitation

7.2.3 Solid Waste Disposal

The urban poor in the South have traditionally been excluded from access to solid waste disposal systems; the poorest areas of any city are typically the worst served by garbage collection service—or are not served at all (UNCHS, 1988; 1996). Solid waste that is not managed accumulates on paths, by the roadside, on streets (sometimes to an extent that it actually blocks roads), rail and waterways, in vacant open spaces, and on marginal and waste land, thus creating insalubrious surroundings; uncollected waste is also a fire hazard (Hardoy et al., 1992; Syagga, 1992b; McGranahan, 1993; 1996). Solid waste accumulating in the neighbourhood raises more problems than at the dumps. Households probably account for half of the solid waste generated in Southern cities, and the bulk of the waste that actually threatens the household and neighbourhood environments (McGranahan, 1993; 1996).⁷ In informal settlements, the management and disposal of solid waste also has implications on other components of environmental infrastructure, primarily blockage of stormwater drains (Harpham et al., 1988).

⁶The provision of sanitation systems is an important measure in the prevention of excreta-related diseases, particularly through the breaking of the faecal-oral transmission mechanism. Several common diseases including diarrhoea, dysentery and enteric fevers can be transmitted through contact with the excreta of an infected person (Cotton and Franceys, 1991).

⁷Less solid waste is produced per inhabitant in the South than in the North (UNCHS, 1992), but a smaller share of the waste is collected (McGranahan, 1993).

Table 7.2.: Percentage distribution of frequency of garbage collection per month

<u>TOWN</u>	<u>3 or less</u>	<u>4 - 6</u>	<u>7 - 9</u>	<u>9 - 12</u>	<u>13 or more</u>
Machakos	99.29	-	-	0.35	0.35
Nakuru	40.81	14.91	39.01	-	5.27
Average (all urban centres)	64.84	13.23	9.14	3.85	8.93

Quoted verbatim from the Urban Housing Survey 1983: Basic Report (RoK, 1986)

The UHS observes that if a residential area is considered well-served if garbage is collected at least once a week,⁸ then garbage collection in most urban centres requires drastic improvement (see Table 7.2). Indeed, the 1994-1996 Development Plan observes that: "urban garbage collection . . . fell far short of what can be considered environmentally safe in terms of human health" (RoK, 1994:175). Those most severely affected include residents of large informal settlements where uncollected solid waste is a major cause of morbidity and mortality, especially among young children (RoK, 1994).

In Swahili Village and Bondeni respectively, 34% and 59% of plots have provision for on-plot disposal of solid waste. In both settlements, more plots with resident owners have provision for on-plot solid waste disposal than do plots with absentee owners. There are also communal disposal points in Bondeni which were provided at what were considered to be strategic locations within the settlement as part of the upgrading project. These have, however, done little to improve environmental conditions. Indeed, they appear to have made them worse as they serve as accumulation points for household solid waste owing to infrequent or non-collection by the municipal agencies, thereby creating a serious health hazard in themselves. Moreover, maximum effort is required on the part of householders who are required to carry domestic solid waste to the communal disposal points (Cotton and Franceys, 1991).

7.2.4 Stormwater Drainage

The provision of an adequate supply of safe water and effective disposal of waste and storm waters has been recommended as an essential part of housing development (Saini, 1979). The principal function of drainage on urban low-income housing sites is to remove unwanted water from the site as quickly as possible in order to minimize potential public health hazards and the deterioration of other infrastructure. The requirements are for: (a) drainage of stormwater; and (b) drainage of sullage.⁹ Good stormwater drainage is vital to the general well-being of a site. Inadequate drainage causes rapid deterioration of path and road surfaces, impedes pedestrian and vehicular movement, results in damage to buildings and their contents, jeopardizes use of space

⁸Although a smaller amount of urban domestic solid waste is generated in the South than in the North, the predominantly vegetable refuse and the rate at which flies breed in tropical climates means that collections have to be made more frequently, usually daily or three times a week (Harpham *et al.*, 1988).

⁹Sullage is defined by Cotton and Franceys (1991) as household waste water which has been used for washing, cooking or cleaning purposes, but which does not contain excreta. It is also referred to as graywater (Feacham *et al.*, 1981; UNCHS, 1984).

outside dwellings, and creates generally insanitary conditions including potential sites for insect breeding. A well-maintained and regularly cleaned stormwater drain system can also be a feasible means to dispose of sullage (Cotton and Franceys, 1991; UNCHS, 1984).

In Swahili Village, 48% of plots have some provision for stormwater runoff compared with 77% in Bondeni. An open channel earth storm drainage network¹⁰ was one of the components of the upgrading project in Bondeni. However, the earth storm drains have become a major environmental hazard and nuisance, and the source of great discontent among householders in the settlement, as will be seen below.

7.2.5 Electricity Supply

All communities, in the opinion of Cotton and Franceys (1991), need power at an affordable cost. Within low-income residential areas this need is most commonly expressed as a desire for street lighting and household electricity connections. Power supply is often considered by politicians and many others to be an integral part of settlement upgrading. However, Cotton and Franceys (1991) maintain that demand for power in low-income neighbourhoods in the South is extremely limited and rarely warrants investment in a conventional electricity distribution system.

The historical background and urban geographic location of the two *majengos* have been advantageous with respect to access to power supply lines. Consequently, in comparison with other informal settlements, especially peri-urban settlements, a relatively high number of plots have a power supply: 26% and 47% in Swahili Village and Bondeni respectively.¹¹ In the latter *majengo*, electricity is supplied to more plots with resident owners than plots where owners are absent. Conversely, in Swahili Village, a higher number of plots with absentee owners have electricity than do plots with resident owners.

7.2.2 Maintenance/Repairs/New Works: Services

Infrastructure elements, like buildings, require some basic regular maintenance if they are to operate optimally and for their expected life-span. Moreover, neglect in the maintenance of water supply and sanitation systems and surface water drainage can create insanitary hazards. As low-income households are generally unable to afford the cost of new services, a logical option is to ensure that the little that is already available is sustained in use to the utmost of its service life (UNCHS, 1987; 1996).

¹⁰This represents the primary level of service in Cotton and Franceys' (1991; 1994) classification of technical options for infrastructure development.

¹¹In Mwariki and Kaptembwa in Nakuru, for example, 24.4% and 13.7% respectively of plots were found to have electricity by Syagga and Malombe (1995), while only 4.1% of households in Nyalenda and 1.8% of households in Manyatta in Kisumu had access to electricity. In Nairobi, very few of the dwellings surveyed by MDC(1993) had electricity; Kawangware and Kangemi, where about 25% of dwellings had electricity, were the exception.

Table 7.3: Maintenance/repairs/new works - Services (percentage frequencies)

		<u>SWAHILI VILLAGE</u>			<u>BONDENI</u>		
		<u>Resident Owner</u>	<u>Absentee Owner</u>	<u>All</u>	<u>Resident Owner</u>	<u>Absentee Owner</u>	<u>All</u>
<u>WATER SUPPLY:</u>	Repairs	16	14	15	31	36	33
	New taps	3	9	6	33	22	30
	No works	81	77	80	36	42	38
<u>Who paid</u>	Owner	100	60	82	86	43	72
	Tenants	0	40	18	14	57	28
<u>SANITATION</u>	Repairs	25	14	20	42	56	47
	New latrine	19	18	19	19	17	18
	No works	56	68	61	39	28	35
<u>Who paid:</u>	Owner	93	86	91	90	54	77
	Tenants	7	14	10	10	46	24
<u>STORMWATER DRAINAGE:</u>	Repairs	9	27	17	44	39	43
	New drains	9	0	6	14	17	17
	No works	82	73	78	42	44	44
<u>Who paid:</u>	Owner	100	67	83	71	25	54
	Tenants	0	33	17	26	70	42
	Other	0	0	0	3	5	3
<u>ELECTRICITY SUPPLY:</u>	Repairs	6	14	9	19	3	14
	Installation	6	14	9	15	28	19
	No works	88	73	18	66	69	67
<u>Who paid:</u>	Owner	75	83	80	91	40	76
	Tenants	25	17	20	9	60	24

In the two years prior to the study, there were less maintenance/repairs/new works carried out on infrastructure elements than on houses in both *majengos* (Table 7.3). This is not unexpected as a dwelling that affords protection from the elements, in particular rain, is doubtlessly the primary concern of inhabitants of informal settlements. Still, an inevitable consequence of the increased availability of infrastructure elements in Bondeni following the upgrading project has been the need for more maintenance/repairs works in that *majengo*. Work carried out has comprised primarily essential maintenance works and vital repairs.

As far as paying for works carried out is concerned, in Swahili Village, expenses have been met mostly by owners, regardless of whether they live in their houses with their tenants or not. In Bondeni, resident owners have also paid for works carried out on their plots more frequently than tenants; but where works have been necessary on plots with absentee owners in Bondeni, tenants have, in a majority of cases, met the costs (Table 7.3).

The maintenance/repairs/new works most frequently carried out involving infrastructural services have been to sanitation systems (47%) and stormwater/surface water drainage (43%) in Bondeni. In the case of the former, the excessive numbers of households using the on-plot water borne sanitation systems installed as part of the upgrading project have resulted in frequent breakdown

of the systems where they are actually being used by the residents. Given the environmental and health problems associated with failure of water borne systems, in particular, blockages, odious smell and attraction of great numbers of flies, it is hazardous to disregard repair works.

7.3 Household Access to and Satisfaction with Services

7.3.1 Household Access to Water Supply

According to WHO/UNICEF (1993:13 cited in Satterthwaite, 1995:v-vi), people are considered adequately served with water if they have "*access to an adequate amount of safe drinking water located within a convenient distance from the user's dwelling*" (Satterthwaite's italics).¹² On the other hand, there is a multiplicity of statistics in the literature regarding the quantity of water required to meet basic needs.¹³

Water consumption is determined by manifold factors, including: climatological, physical and socio-cultural conditions, as well as religious practices. The amount of water to which people have access is, however, possibly the most significant factor; the level of service provided has also been found to markedly influence water consumption. The price of water and the time taken to collect it further influence the quantity used.¹⁴ Since water is not light, the distance it has to be carried will have a bearing on consumption levels (UNCHS, 1986; Cotton and Franceys, 1991; Hardoy *et al.*, 1992).

7.3.1.1 Communal Water Points

Communal water points, of one form or another, are the water supply source for multitudinous low-income urban households in the South. There are, however, several problems associated with communal water points including: access; wastage; congestion; drainage; damage (resulting in leakages from taps and high maintenance costs; pilferage sometimes occurs); and vandalism. Frequently, water will be available in the piped water system only intermittently. Where communal water supply sources exist, the quantity of water used per person will be largely

¹²Satterthwaite (1995) points out that each of the words in italics is defined not by the international agencies responsible for monitoring and evaluating progress, but rather within the particular countries. A considerable percentage of those who are said to have "safe" water do not have drinking water at a convenient distance.

¹³For example, according to Timberlake (1989), man can in theory exist on as little as 5 litres of water per day, which, in fact, some nomadic peoples do for considerable periods of time. Timberlake (1989) affirms that, in parts of Kenya where some women have to trek up to 10 kilometres to fetch water, the consumption per person is as low as 2-5 litres per day—considered the absolute minimum for drinking and eating. However, UNCHS (1989) maintains that basic needs in domestic water supply can be met by regular and reliable provision of between 30 and 50 litres per capita per day of water of adequate quality for drinking, food preparation, and personal and domestic hygiene. According to Cotton and Franceys (1991), the bodily requirement for an adult is generally less than 8 litres per day; it is, however, difficult to quantify the other uses such as bathing and laundry as these are largely a function of the amount of water which is actually available. On the other hand, Agarwal and others (1990) report that available evidence indicates that the majority of health benefits of adequate water supply are attainable at service levels of 30-40 litres per capita on site, while WHO (1972) maintain that 40-50 litres per day are required for personal and domestic hygiene if an individual is to remain healthy.

¹⁴In many cases, low income individuals work very long hours; queuing at a water source thus consumes time which is already limited and could be otherwise used earning an income (Hardoy and Satterthwaite, 1989; Hardoy *et al.*, 1992). Indeed, the association between time and money is universally recognized, as UNCHS/ILO (1995:141) affirms: "time-consuming tasks have an opportunity cost even for the poorest."

Table 7.4: Access to domestic services - Water supply (percentage frequencies rounded)

<u>Main source</u>	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Communal water point	32	32	9	20
On plot connection	28	32	77	73
Water vendor (who delivers water to house)	8	7	9	3
Water kiosk	32	29	0	0
Communal water point/on-plot connection	0	0	5	0
Another residential estate	0	0	0	3

Table 7.5: Household water consumption (median [and mean in brackets] litres per capita per day)¹⁵

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Communal water point	17 (20)	10 (17)	20 (22)	15 (17)
On-plot connection	8 (8)	24 (38)	16 (23)	17 (24)
Water vendor (who delivers water to house)	14 (14)	23 (23)	20 (22)	53 (53)
Water kiosk	13 (13)	23 (32)	-	-
Another residential area	-	-	-	11 (11)

dependent upon the time and energy required to collect and carry the water to the home. Commonly, where householders do not pay in cash they pay in time queuing at a public water point or in walking time to distant taps (Reed, n.d.; Hofkes, 1981; Harpham *et al.*, 1988; Hardoy *et al.*, 1992).

In Swahili Village, 32% of both owner and tenant households obtain their water from a communal water point; this compares with 9% and 20% of owner and tenant households respectively in Bondeni. Surprisingly, owner households that obtain their water from communal sources consume more water at the median than owner households that use other sources (Table 7.5). Their level of consumption is also higher than that of tenant households that use the same source. The majority of those who obtain their water from communal water points are dissatisfied with the service, the main reasons being the time it takes to collect it (mean of 17 and 33 minutes in Swahili Village and Bondeni respectively), and the distance they have to carry it from the water point to their respective dwellings.

7.3.1.2 On-Plot Water Supply

As would be expected, a far greater number of households in Bondeni (77% and 73% of owners and tenants respectively) have access to an on-plot water supply than in Swahili Village (28% and 32% of owners and tenants respectively) as a result of the upgrading project (Table 7.4).

¹⁵ Although such data discounts the fact that in a household a considerable part of the water use is shared by all members of the household (e.g. cooking, laundry, domestic cleaning), per capita daily water consumption data are useful for making rough estimates of a community's water demand (Hofkes, 1981).

Table 7.6: Household access to water supply – satisfaction with service (percentage frequencies rounded [scores*] in brackets by tenure group)

		<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
		<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
<u>Communal water point</u>	Satisfied	38	33	0	8
	Indifferent	0	0	25	0
	Dissatisfied	62	67	75	92
	[Score]	[1.76]	[1.66]	[1.25]	[1.16]
<u>On-plot connection</u>	Satisfied	100	78	85	72
	Indifferent	0	11	0	2
	Dissatisfied	0	11	15	26
	[Score]	[3.00]	[2.67]	[2.70]	[2.46]
<u>Water vendor</u>	Satisfied	0	100	0	0
	Indifferent	0	0	0	0
	Dissatisfied	100	0	100	100
	[Score]	[1.00]	[3.00]	[1.00]	[1.00]
<u>Water kiosk</u>	Satisfied	75	38	-	-
	Indifferent	0	0	-	-
	Dissatisfied	25	62	-	-
	[Score]	[2.50]	[1.76]	-	-

*In calculating the score, the category "Dissatisfied" is given a score of 1; the category "Indifferent" a score of 2; and the category "Satisfied" a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00. Thus, 1 represents least satisfaction while 3 represents the greatest satisfaction.

Still, they are not all wholly satisfied with the service; 85% and 72% of owner and tenant householders respectively affirmed satisfaction. Intermittent supplies and malfunctioning taps are the main reasons for dissatisfaction. However, the former complaint is common in most urban centres in Kenya, not only in low-income neighbourhoods, but also in many middle- and high income residential areas.

In Swahili Village, tenant households with access to an on-plot water supply consume about three times the amount of water of owner households (24 and 8 litres per capita per day respectively). Owner and tenant households in Bondeni have similar levels of consumption; 16 and 17 litres per capita per day at the median respectively. These levels of consumption are all below the 30-40 litres per day which WHO (1972) states to be necessary for healthful living.

7.3.1.3 Water Vendors

In many urban areas in the South, where no water supply is provided by public authorities—as is common in informal settlements—poor households are constrained to purchase water from commercial vendors at exorbitant prices (Hardoy *et al.*, 1992; Harpham *et al.*, 1988; UNCHS, 1996).¹⁶ However, Cotton and Franceys (1991) argue that they are satisfying a vital need for

¹⁶ UNCHS (1996) affirms that urban dwellers in the South often purchase water from vendors at prices which are between 4 and 100 times the amount paid for publicly provided piped water. In Kibera (Nairobi), residents sometimes pay vendors five to ten times the official price for water (Lamba, 1994).

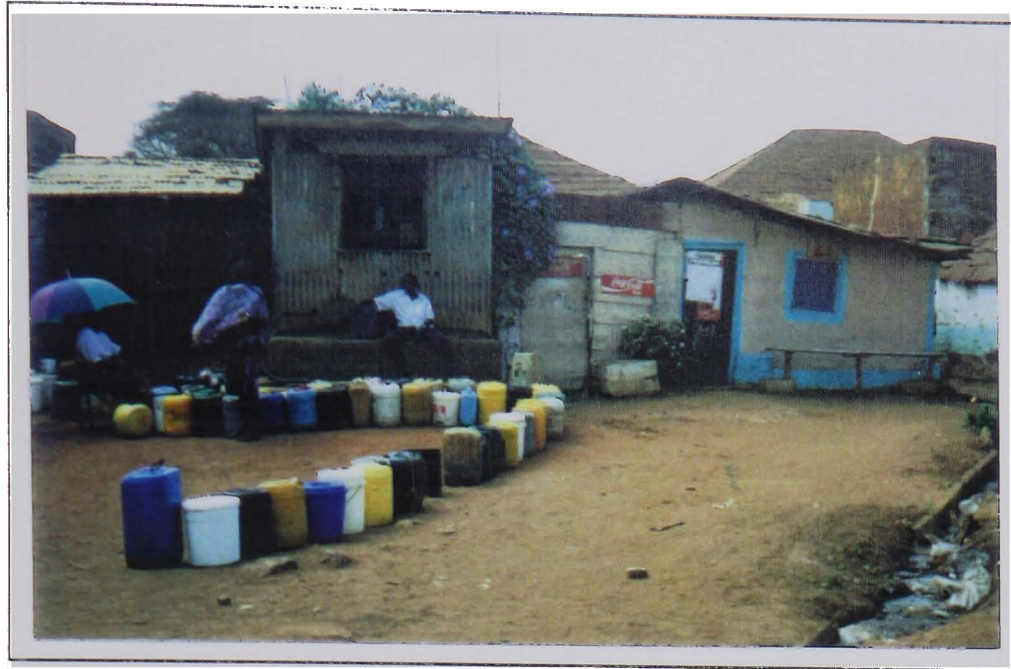


Figure 7.1: Water kiosk in Swahili Village



Figure 7.2: Bathing area in plot in Swahili Village



Figure 7.3: Open channel drain in Swahili Village

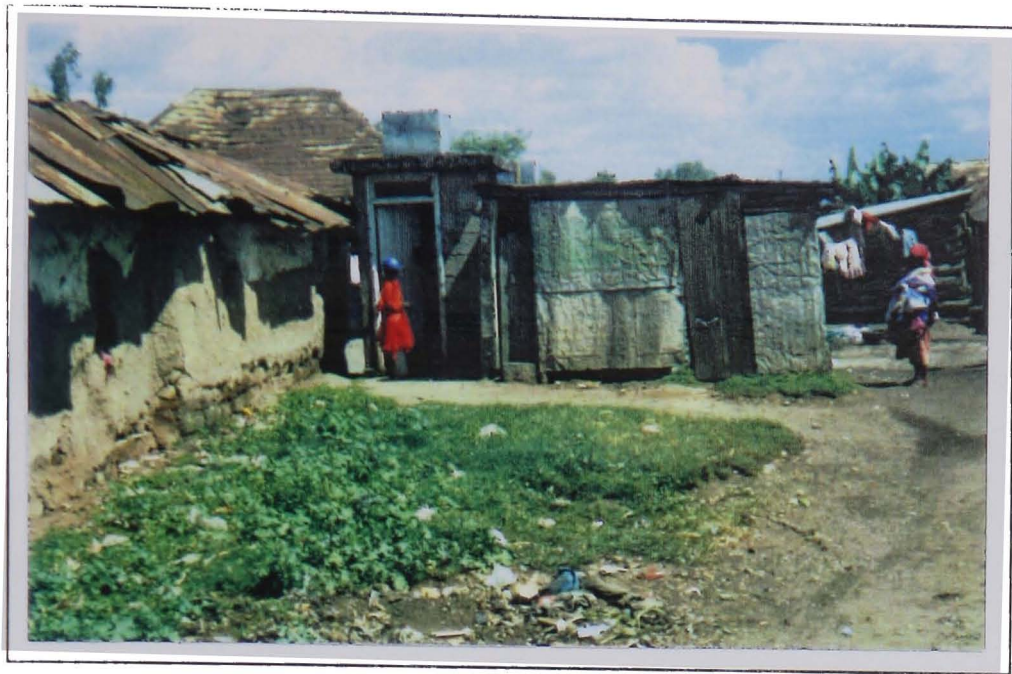


Figure 7.4: Sanitary block (on the left) erected on plot as part of upgrading project in Bondeni.



Figure 7.5: Women washing clothes in Bondeni

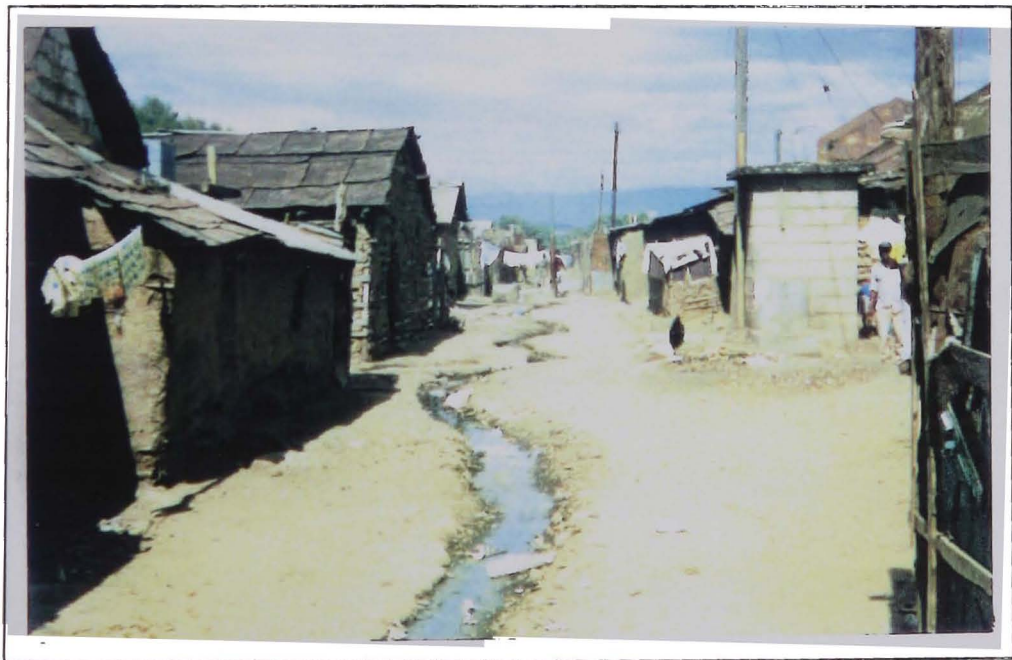


Figure 7.6: Open channel earth drain constructed as part of upgrading project in Bondeni

which people are prepared to pay a high price. Water vendors probably serve 20% or more of the urban population in the South (UNCHS, 1996).

Itinerant water vendors supply water to a great number of households in informal settlements in Kenya. A survey of four informal settlements in Nairobi,¹⁷ for example, found that 75% of the population purchase water from vendors. However, in the two *majengos*, only a small minority of households purchase water from commercial vendors who deliver water to the houses (Table 7.4). Apart from tenant householders in Swahili Village, all other householders declared dissatisfaction with the service.¹⁸ Still, levels of consumption were relatively high, especially among tenant households, 23 and 53 litres per capita per day in Swahili Village and Bondeni respectively.

7.3.1.4 Water Kiosks

Water kiosks can be found in numerous low-income urban informal settlements in Kenya. In Nairobi, the majority of the population in informal settlements (85.6%) obtains its water from water kiosks (MDC, 1993). However, in the present study, only Swahili Village had a water kiosk (Figure 7.1), from which 32% and 29% of owner and tenant households respectively surveyed purchase their water. The level of satisfaction of owners who use this service was considerably higher than that of tenants. Householders in the two tenure groups who use this service were more satisfied than householders who obtained water from communal water points or purchased it from itinerant vendors (Table 7.6).

7.3.2 Household Access to Sanitation

Human activity results in diverse wastes, the majority of which are from industry and agriculture. At the domestic level, human wastes are primarily of three kinds: excreta, waste water and solid waste, the removal and disposal of which are all inter-related. The waste most associated with humans is their own bodily waste, i.e. excreta—urine and faeces. Because excreta presents health risks and is for most people culturally obnoxious, its disposal and removal is particularly important (Pickford, 1984).¹⁹

The proportion of the urban population in the South said to lack access to adequate sanitation in the literature varies.²⁰ Moreover, official statistics, for reasons similar to those stated for water,

¹⁷The basic needs survey conducted in 1992 by the Kenya Consumers Organization in Mathare, Kawangware, Soweto and Kibera (cited in MDC, 1993).

¹⁸It is not unusual to find householders who opt to purchase water from vendors as they are dissatisfied with the alternatives. These were indeed the findings of the author in an earlier study (Majale, 1985).

¹⁹The primary problem of the majority of the population in the South, which is not served by piped water, is not waste water disposal, but rather excreta disposal (Rybczynski *et al.*, 1982).

²⁰Water Newsletter (1997), for example, states that one half of the world's population lacks access to adequate sanitation. Alternatively, Satterthwaite (1995) cites official statistics which indicate that at least a third of urban population in the South have no proper sanitation.

Table 7.7: Access to domestic services - Sanitation (percentage frequencies by tenure group)

<i>Sanitation system</i>	<i>SWAHILI VILLAGE</i>		<i>BONDENI</i>	
	<i>Owners</i>	<i>Tenants</i>	<i>Owners</i>	<i>Tenants</i>
Communal pit latrine	13	18	24	14
Shared on-plot pit latrine	63	43	33	47
Private on-plot pit latrine	17	0	16	17
Communal water borne system	8	7	2	0
Shared on-plot water borne system	0	25	11	14
Private on-plot water borne system	0	7	0	0
Other*	0	0	13	9

(*Others includes access to either of the following: shared on-plot pit latrine/shared on-plot water borne system; shared on-plot pit latrine/private water borne system; communal pit latrine/shared on-plot water borne system)

commonly exaggerate the proportion of urban populations with adequate sanitation.²¹ Governments formulate their own definitions of what comprises a 'sanitary facility', the distance that is considered 'convenient' between a dwelling and its facility and what constitutes 'access'. In numerous cases, people adjudged to have 'access to sanitation' have only a pit latrine shared with dozens of households (Satterthwaite, 1995:vii).²² Still, as Pickford (1984) asserts, whatever the statistics indicate, the sanitation for most of the urban population in the South is deplorable.

Table 7.7 summarizes household access to sanitation in the two *majengos*. It can be seen that households in both Swahili Village and Bondeni have access to a range of sanitation systems, which include both water borne and non-water borne communal, shared and private on-plot systems.

7.3.2.1 Pit Latrines

The pit latrine remains one of the most extensively used technologies for excreta disposal in the South, though in many cases it still takes second place to indiscriminate defecation.²³ It represents the first level of the sanitation hierarchy, but despite its ostensible simplicity, the adoption of this technology has met with varied success (Rybczynski *et al.* 1982). At their best, simple well-designed, built and maintained pit latrines provide sanitary benefits comparable with more sophisticated options. Their relatively low cost, uncomplicated construction technology,

²¹For instance, Hardoy and Satterthwaite (1989) point out that claims by governments in Kenya, Jordan and Bolivia that 100% of their populations were adequately served with piped water in 1980 cannot be taken seriously.

²²Satterthwaite (1995) expounds that the proportion lacking adequate means for sanitation is, in fact, much larger on the basis of three criteria: (i) a toilet which is easily accessible by people—multitudinous urban households have access only to shared toilet facilities which are used by so many people that access is difficult or even impossible at times; (ii) a sanitation system that minimizes the probability of human contact with human excreta—most sanitation systems do not, and most toilet facilities have neither running water nor a basin for washing after defecation; (iii) a sanitation system that is easy to keep clean and maintain—the majority do not fulfil this criterion.

²³In Kenya, indiscriminate defecation (20.1% of the population) is second to the use of pit latrines (68.5% of the population) according to the findings of the 1989 population census (RoK, 1996). While indiscriminate defecation may be one means of meeting basic human needs, it is hardly acceptable in environmental and health terms (Choguill and Choguill, 1996). On the other hand, Pickford (1994:1), asserts that 'free-ranging' (open defecation) may be satisfactory for scattered rural communities, although difficulty in finding private places, in addition to health risks make it unsuitable for urban communities. He suggests that "[affordable] improvement can be achieved by digging a hole and covering the excreta, as Moses commanded the children of Israel in the Sinai desert."

Table 7.8: Household access to sanitation: satisfaction with the service (percentages frequencies by tenure group rounded and scores)

		<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
		<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
<u>Communal pit latrine</u>	Satisfied	67	60	100	63
	Indifferent	0	0	0	0
	Dissatisfied	33	40	0	37
	[Score]	[2.34]	[2.20]	[3.00]	[2.26]
<u>Shared on-plot pit latrine</u>	Satisfied	87	58	60	30
	Indifferent	0	25	20	4
	Dissatisfied	13	17	20	66
	[Score]	[2.74]	[2.41]	[2.40]	[1.64]
<u>Private on-plot pit latrine</u>	Satisfied	-	-	14	10
	Indifferent	-	-	0	0
	Dissatisfied	-	-	86	90
	[Score]	-	-	[1.28]	[1.30]
<u>Communal water borne system</u>	Satisfied	25	0	0	-
	Indifferent	0	0	0	-
	Dissatisfied	75	100	100	-
	[Score]	[1.50]	[1.00]	[1.00]	-
<u>Shared on-plot water borne system</u>	Satisfied	-	-	40	13
	Indifferent	-	-	0	0
	Dissatisfied	-	-	60	87
	[Score]	-	-	[1.80]	[1.26]
<u>Private on-plot water borne system</u>	Satisfied	100	-	-	-
	Indifferent	0	-	-	-
	Dissatisfied	0	-	-	-
	[Score]	[3.00]	-	-	-

²⁴In calculating the score, the category "Dissatisfied" is given a score of 1; the category "Indifferent" a score of 2; and the category "Satisfied" a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00. Thus, 1 represents least satisfaction while 3 represents the greatest satisfaction.

upgrading by householders, acceptance of different anal cleansing materials, and satisfactory long term use under certain conditions make pit latrines a practical and widely used form of sanitation for many urban people. But, at their worst, pit latrines provide levels of sanitary hygiene little above open defecation (Cotton *et al.*, 1995). Simple pit latrines have two major problems: they smell and produce vast numbers of flies (Cotton and Franceys, 1991).²⁴

Findings from the 1989 population census indicate that 68.5% of the population used pit latrines (RoK, n.d.). In informal settlements, where 94% of the population do not have access to adequate sanitation, pit latrines are the major method of excreta disposal (MDC, 1993). In both Swahili Village and Bondeni, most owner households (93% and 61% respectively) as well as

²⁴Odours emanating from the pit attract female flies which enter through the hole and lay their eggs in the faeces. However, improvements which moderate these nuisances have been developed, in particular the ventilated improved pit latrine (VIP) (Cotton and Franceys, 1991). The effectiveness of VIP latrines was clearly demonstrated in Zimbabwe, where four pit latrines, two without vents and two with vents were used equally for six months. 13,953 flies were trapped in the unvented pits compared to only 146 flies in the vented ones during the subsequent two and a half month period (Cotton *et al.*, 1995).

tenant households (73% and 78% respectively) have access to some form of pit latrine. Levels of satisfaction with the service vary amongst householders in the two *majengos*, but owners are on the whole more satisfied with whatever type of pit latrine they use than tenants.

7.3.2.2 Water Borne Sanitation Systems

An estimated 60% of urban populations in the South are not connected to a public sewerage system. Where sewers do exist, that are typically connected to richer residential, government and commercial areas (Satterthwaite, 1995). In Kenya, only 30% of the 142 gazetted urban areas have sewerage systems, largely because in most cases the development of water supplies has not been matched by a corresponding increase in facilities for sanitary disposal of waste-water, thereby posing serious environmental and health problems (RoK, 1997).

The UHS indicates that Nakuru is better served with water borne sanitation, to which 50% of households have access, compared to less than one in three in Machakos. At the national level, about two in ten and three in ten urban households respectively have access to private flush toilets and communal flush toilets. The distribution of toilet facilities follows very much the same trend as water, in that provision of toilet facilities in close proximity is dictated by the socioeconomic status of households (RoK, 1986).

Not unexpectedly, a minority of households in Swahili Village have access to a water borne sanitation system. Only 25% and 7% of tenant households have access to a shared on-plot water borne system or private water borne system respectively; no owner households use water borne systems. What is noticeable, however, is that, despite the fact that provision of on-plot water borne sanitation was one of the components in the Bondeni upgrading project, only 11% owner households and 14% of tenant households use this service. In point of fact, this number is even smaller than the proportion of tenant households (25%) in Swahili Village who have access to similar sanitation facilities

Apart from the initial problem of the concerned agencies' failure to create public awareness prior to the implementation of the upgrading project, the low level of usage of on-plot sanitation systems in Bondeni is attributable to problems of accessibility, as well as operation and maintenance. There are simply far too many households on most plots for expedient use of the sanitary blocks constructed on each plot. Excessive use and overloading such systems inevitably results in failure of the system, thereby presenting a serious environmental hazard.

The level of satisfaction among householders who use communal and shared on-plot water borne sanitation systems is extremely low, which is not altogether surprising. Communal latrines with unrestricted access frequently suffer from inadequate regular cleaning and are seldom maintained sufficiently well to give user satisfaction, unless local authorities, or in some cases non-public

Table 7.9: Means of household waste water (sullage) disposal (percentage by tenure group rounded)

	<i>SWAHILI VILLAGE</i>		<i>BONDENI</i>	
	<i>Owners</i>	<i>Tenants</i>	<i>Owners</i>	<i>Tenants</i>
Pour just outside house	16	28	20	34
Pour elsewhere within plot	28	14	2	5
Pour into soakage pit	16	3	0	0
Pour into open drains	36	17	71	61
Pour down sewer	4	38	7	0

sector groups operate them satisfactorily (Cotton and Franceys, 1991; Cotton *et al.*, 1995). Blocked water borne systems not only produce an malodorous smell, but are also visually repulsive which understandably makes them unpopular with users. Moreover, there is a lack of privacy for the users who may have to walk a considerable distance from their abodes. All the owners in Bondeni who use this service expressed dissatisfaction, as did all tenants and 75% of owners in Swahili Village. Similarly, 60% and 87% of owner and tenant households respectively in Bondeni expressed dissatisfaction with the on-plot water borne sanitation systems to which they have access. Again, this is not totally unexpected; indeed, it was noted in Chapter 7.2.2 that these systems breakdown rather frequently. Conversely, owners households in Swahili Village with access to a private on-plot water borne system are wholly satisfied with the service.

7.3.3 Household Disposal of Waste Water

The removal and safe disposal of household waste water (sullage), in addition to that of excreta, is a critical environmental health need. However, the proportion of urban households in the South lacking adequate means to dispose of waste water is even greater than that without hygienic means of disposing of excreta (Hardoy *et al.*, 1992; Satterthwaite, 1995). The volume of sullage produced is dependent upon domestic water usage, which is in turn influenced, to a large extent, by the quantity of water to which households have access (Feachem *et al.*, 1981; Cotton and Franceys, 1991).²⁵ The health implications of sullage disposal are largely dependent on the technology utilized.²⁶ However, disposal of waste water into open drains, possibly storm water drains, provides the most readily identifiable health risk—mosquito breeding (Feachem *et al.*, 1981).

There are various means of disposing of sullage in informal settlements. Within plots, sullage can be disposed of by allowing it to percolate through the soil by means of soakage pits or, where appropriate, using it for garden watering. Sullage can also be discharged into stormwater drains or, where they exist, into sewerage systems (Cotton and Franceys, 1991). In numerous instances, however, household waste water is freely discharged onto the surface without concern for its

²⁵Between 50% and 80% of water supplied may end up as sullage (Cotton and Franceys, 1991).
²⁶Feachem *et al.* (1981) expound that the system of disposal is determined by the volume of sullage per household, the density of housing, soil type, ground water conditions and the nature of the climate. While this may indeed be true for formally designed systems, it is hardly the case in most low-income neighbourhoods, especially informal settlements.

Table 7.10: Main means of solid waste (refuse/garbage) disposal (percentage frequencies rounded by tenure group)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Throw/burn just outside structure	28	24	49	56
On-plot pit/heap	4	10	7	12
On-plot container	4	14	2	2
Throw in open drain/by roadside	0	0	38	29
Communal pit/heap	64	52	4	2

ultimate fate. As a result, channels containing sullage, latrine discharges and solid waste which pose a serious environmental problem are formed (UNCHS, 1981).

In Bondeni, most households (71% and 61% of owners and tenants respectively) dispose of their waste water by throwing it into the open storm water drains, one of the components of the upgradation exercise, by the side of the access roads. This compares with 36% and 17% of owner and tenant households respectively who do the same in Swahili Village. Apart from creating breeding grounds for mosquitoes, waste water disposed of in this manner is the source of odious smell when coupled with domestic solid waste thrown into the drains. In this respect, the upgrading exercise has had a negative impact on the environment in the settlement.

7.3.4 Household Disposal of Solid Waste

Disposal of domestic solid waste is a major problem in informal settlements, and has significant bearing on environmental conditions at both the household and neighbourhood level.²⁷ Often, this is largely due to households' attitudes—many are not aware of the adverse environmental and health consequences of indiscriminate disposal of solid waste. This appears to be the case amongst both owner and tenant households in Bondeni, 49% and 56% respectively who dispose of their solid waste by throwing or burning it just outside the house. In Swahili Village, on the other hand, the population appears to be more aware of the importance of environmental cleanliness; 64% of owner households and 52% of tenant households throw their solid waste in a communal pit or heap.

7.3.5 Household Domestic Energy

Energy is a key input for economic development that includes not only petroleum products for transportation and power for industrial growth, but also fuel for cooking, heating and lighting to meet basic household needs (Leitmann, 1991). According to UNCHS (1984), the needs for urban energy can also be arbitrarily classified as metropolitan, district, neighbourhood, individual shelter and household requirements. In urban low-income settlements, household energy

²⁷Problems of inadequate disposal of solid waste at the household level, when compounded, have serious environmental implications at the settlement level (see Section 8.2.3).

Table 7.11: Main source of energy for domestic cooking (percentage frequencies rounded by tenure group)

	<i>SWAHILI VILLAGE</i>		<i>BONDENI</i>	
	<i>Owners</i>	<i>Tenants</i>	<i>Owners</i>	<i>Tenants</i>
Charcoal	60	41	62	59
Kerosene	12	38	9	12
Fuelwood	12	14	2	0
Electricity	4	0	0	0
Gas	0	0	2	0
More than one source	12	7	24	29

consumption is chiefly for cooking, lighting, water heating and other small scale uses. The individual shelter requirements refer to the usage of energy in the construction of the dwelling in addition to that utilized in the maintenance of an adequate environment inside the dwelling unit. The demand for energy at the neighbourhood level is for the provision and maintenance of physical and social infrastructure, depending on the level of these services.²⁸

In most countries in the South, domestic energy is the largest part of energy consumed; woodfuel commonly constitutes the largest source of domestic energy.²⁹ Present policies to prevent deforestation create even greater privation for the urban poor, in particular women, through the prohibition of firewood collection around urban areas. Poor urban households spend proportionately more of their incomes on domestic energy than their more affluent counterparts (Lee-Smith, 1992; Lee-Smith and Syagga, 1990).

7.3.5.1 Household Domestic Energy: Cooking

In Kenya, domestic energy forms the largest part of energy consumption, with woodfuel being by far the largest energy source in this sector. Firewood is the dominant source of cooking fuel for 73% of the population (RoK, 1996). Amongst urban households, charcoal is used by 82% for cooking and firewood by 19%. However, numerous households in urban areas use more than one source of energy; it is not uncommon for low-income households to use both kerosene and charcoal or, alternatively, charcoal and firewood (Lee-Smith, 1992; Lee-Smith and Stren, 1991).³⁰

Charcoal is the main source of energy for domestic cooking for all households in the two *majengos*, followed by kerosene. This makes the provision of adequate ventilation in rooms, particularly those inhabited by tenant households which have higher room occupancy rates, all

²⁸UNCHS (1984) points out that low-income householders do not directly perceive this use of energy; it is reflected chiefly in the cost of housing and some services.

²⁹Woodfuel is a primary source of energy in most sub-Saharan African nations; oil-rich Nigeria is no exception (Lee-Smith and Syagga, 1990).

³⁰Lee-Smith (1992) notes that middle-income households may use either gas or electricity as well as charcoal; however, only 12% of urban households cook with electricity, mainly because of the prohibitive cost.

Table 7.12: Main means of domestic lighting (percentage frequencies rounded by tenure group)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Kerosene lamp	64	66	33	64
Electricity	24	20	49	27
Oil lamp	4	10	13	5
Pressure lamp	4	3	-	2
More than one source	4	-	4	2

the more important as both fuels produce potentially hazardous smoke and fumes. Gas and electricity are used only by a small number of owners for cooking purposes (Table 7.11).

7.3.5.2 Household Domestic Energy: Lighting

The UHS affirms that the type of lighting facility in a dwelling unit is determined by the economic status of the head of the household, the income status of the household and existence of electricity supply. Usage of electricity is typically associated with the middle and high income groups; but some low-income households also use it, primarily for domestic lighting. Approximately 73% of low-income households use paraffin lamps for lighting while 26% use electricity.³¹

Table 12 indicates that the predominant means of lighting for all households is kerosene lamps. Such lamps, however, can be environmentally unsafe due to the smoke and fumes they emit while burning; these can adversely affect the health of the occupants if ventilation in the room is poor. Kerosene lamps also present a fire hazard.

An almost equal number of owner and tenant households in Swahili Village (24% and 20% respectively) use electricity for domestic lighting.³² This can be explained by the fact that, in most cases where resident owners' dwellings have an electricity supply in Swahili Village, all the other rooms in the house are also connected. This is apparently not the case in Bondeni where 49% of owner households use electricity for domestic lighting purposes compared to only 27% of tenant households.

7.3.6 Household Rating of On-Plot Services

Householders, be they low-income or high income, in informal settlements or affluent neighbourhoods, are unlikely to be in total accord about which domestic services and facilities they consider essential and which ones they deem unnecessary. But going by experience, it is almost certain that the vast majority will rate an adequate water supply as essential. Still,

³¹Findings from the 1989 population census indicate that 81.3% of the population (64.3% in urban areas) use paraffin lamps for lighting. See Annex for the percentage distribution of lighting systems for each the urban centres in which the two *majengos* are located.

³²The above findings indicate that 8.7% of all households (32.1% in urban areas) use electricity (RoK, n.d.).

Table 7.13: Household rating of necessity of on-plot services (scores* by tenure group)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Water supply	2.81	2.85	2.94	2.97
Waste water (sullage) disposal	2.56	2.78	2.64	2.65
Solid waste (garbage/refuse) disposal	2.18	2.27	2.82	2.73
Surface water drainage	2.57	2.53	2.73	2.62
Electricity	2.51	2.68	2.60	2.71

*In calculating the score, the category "Essential" is given a score of 3; the category "Desirable" a score of 2; the category "Indifferent" a score of 1; and the category "Not necessary" a score of 0. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a maximum value of 3.00 and a minimum of 0.

householders in the two tenure groups in the two *majengos* were asked to indicate how necessary (essential, desirable, indifferent, not necessary) they considered various on-plot services (water supply, waste water disposal, solid waste disposal, surface water drainage and electricity) to be.

In Swahili Village, 92% and 90% of owner and tenant householders respectively stated that an on-plot water supply was essential; in Bondeni, 98% and 97% respectively of owner and tenant householders were of the same opinion. As far as on-plot disposal of waste water is concerned, 72% and 82% of owner and tenant householders in Swahili Village deemed it essential; this compares with 64% and 71% respectively of their opposite number in Bondeni.

More householders in Bondeni rated on-plot solid waste disposal essential than in Swahili Village. In Bondeni the percentage of owner and tenant householders that considered it essential was 82% and 80% respectively, compared with 56% and 72% respectively of owner and tenant householders in Swahili Village. A high proportion of householders in both tenure groups in the two neighbourhoods considered electricity essential. In Swahili Village, 77% and 82% of owner and tenant householders respectively rated electricity essential, as did 79% and 75% respectively of their counterparts in Bondeni.

Table 7.13 summarizes householders' ratings of the necessity of various on-plot services. The table shows that whilst the two tenure groups in the two *majengos* seem to have a somewhat similar opinion as to the necessity of the various on-plot services. However, a higher number of owner and tenant householders in Bondeni consistently rated the various services essential than did their counterparts in Swahili Village.

Table 7.14: Priority ranking of on-plot services (scores* by tenure group)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Water supply	2.31	2.46	2.36	2.41
Sanitation	1.88	1.38	1.23	1.57
Electricity	1.04	1.16	0.63	0.77
Waste water disposal	0.20	0.41	0.50	0.27
Solid waste disposal	0.04	0.19	0.69	0.38
Surface water drainage	0.16	0.15	0.31	0.22

*In calculating the score, if a service was rated "First" it is given a score of 3; "Second" a score of 2; "Third" a score of 1; and any service/facility which was not rated is given a score of 0. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a maximum value of 3.00 and a minimum of 0.

7.3.7 Household Priority Ranking of On-Plot Services

An appropriate framework for understanding environmental issues in Southern cities must focus on the priorities of the poor.³³ These are invariably likely to be concentrated on their unsatisfied needs for basic environmental services and other economic necessities of basic life. Household access to water, sanitation and solid waste disposal, in addition to land, energy and unpolluted air, are particularly crucial, although they cannot be divorced from the need for housing, income-generating opportunities, health services and education (Rakodi, 1992b).

As an important part of the study, owner and tenant householders' ranking of services was examined. Householders in the two *majengos* were asked which of the three domestic services/facilities, in order of priority, they would select in the event of an upgrading project being implemented in the settlement. Not unexpectedly, water was accorded highest priority by the majority of householders (Table 7.14). Water was ranked first by 69% of owner householders and 68% of tenant householders in Swahili Village; and in Bondeni, 75% and 77% of owner and tenant householders respectively did likewise. Only 15% of owners and 11% of tenant householders in Swahili Village, and 16% of owners and 18% of tenant householders in Bondeni did not rank water among their three priority services.

Sanitation received the second highest priority ranking. In Swahili Village, 42% and 33% of owner and tenant householders respectively ranked it second, as did 43% and 63% of owner and tenant householders respectively in Bondeni. Only 8% of owners in Swahili Village did not rank sanitation as one of their three priority services; 33% of tenant householders also did not rank it. In Bondeni, sanitation was not ranked by 34% and 21% of owner and tenant householders respectively.

³³Indeed, Turner (1976:118) affirms: "Dwelling environments are necessarily functions of their inhabitants and, as people's housing priorities are extremely varied ..., control of dwellings and neighbourhoods must be in personal and local hands."

Table 7.15: Willingness to contribute to priority domestic services/facilities (percentage frequencies rounded by tenure group)

	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
First priority	84	93	91	97
Second priority	80	83	91	90
Third priority	84	72	84	89

UNCHS (1981) mentions that solid waste disposal will sometimes not rate highly with low income households in informal settlements owing to a lack of awareness of health hazards and lack of sensitivity about the quality of the environment. The manner in which households in the two *majengos* dispose of their solid waste, particularly in Bondeni, seems to uphold this observation (Table 7.10). Indeed, provision of on-plot solid waste disposal facilities received very low priority ranking among households in both tenure groups in the two settlements (Table 7.14). In Swahili Village, 96% and 85% of owner and tenant householders did not rank it among their three priority services, as was the case with 64% and 75% respectively of their opposite number in Bondeni. And closer examination of household disposal of solid waste disposal practices (Table 7.10) reveals that far more householders in Bondeni simply throw or burn their solid waste just outside their house, while in Swahili Village most householders use communal pits or heaps.

7.3.8 Household Willingness to Contribute towards Priority On-Plot Services

In infrastructure improvement projects, it is necessary to ensure that all costs associated with the development work are affordable.³⁴ However, several writers have asserted that affordability criteria are perhaps too simplistic; the key issue is willingness to pay, which depends not only upon income levels and ability to pay, but is also related to perceived use value of housing and the residential environment, perceived benefits to be gained from the service, and household expenditure priorities (Cotton and Franceys, 1994; Rakodi, 1992; Tipple *et al.*, 1994). Willingness to contribute financially on the part of the targeted beneficiaries has important implications for cost recovery.

In both *majengos*, the majority of householders expressed willingness to pay for the three on-plot services to which they would give priority in an upgrading project. If this were indeed the case, the implication is that cost recovery would not be very problematic. However, closer examination of Table 7.15 will reveal two anomalies that should not be disregarded. Firstly, in all but two cases, tenant householders are more willing to contribute monetarily than owner householders. Secondly, despite the apparent willingness to pay on the part of owners in Bondeni, there were considerable problems in getting them to pay for connection of water supply

³⁴Affordability is considered as a proportion of income. Values of 3% of household income for water supply and 3% for sanitation have been used by sector planners; some studies, however, cite only 1% and 2% in total (Cotton and Franceys, 1994).

to the sanitary blocks built on plots as part of the upgrading implemented through the World Bank project.

7.4 Household Appraisal of the Environment

As noted earlier, a principal feature of the physical environment in which the urban poor live in informal settlements which is consequential, both in terms of the amelioration of their lot and in terms of general urban environmental problems, is that they are almost never exclusively residential. From an amenity point of view, individual, and also various forms of commercial activity/development, frequently add to the difficulties of the majority of the inhabitants: "fire, noise, smell; flies" (Dwyer, 1975:37).

People's (sensory) perception of their environment will doubtless vary from one individual to another.³⁵ Certainly, nuisance is subjective and individual tolerance of nuisance of all kinds will vary from one person to another (Carrol and Britten, 1992). Still, for purposes of effective environmental planning and management of informal settlements, it is important that at least some knowledge is gained of how the residents perceive and experience their residential environment and which environmental factors they consider to be problematic. At the same time, it is imperative that we recognize that there are some environmental problems that are not amenable to human intervention.

7.4.1 Household Appraisal of the Environment: Smoke

Smoke can originate from several sources and likewise create diverse environmental problems. Dense smoke not only affects air quality and breathing, but also causes visibility problems. If it penetrates the lungs, smoke can have serious adverse health effects, both short term and long term. The long term effects include increased frequency of respiratory infections among children and increased prevalence of respiratory symptoms among adults.³⁶ Smoke can also be the source of obnoxious smell (e.g., smoke from burning rubber) and can be irritable to the eyes (Hardoy *et al.*, 1992).

Smoke is one of a number of environmental problems that can be difficult to control or manage in informal settlements depending on the source. Table 7.16 indicates that smoke from residential sources in Bondeni raised the most complaints; 60% and 61% of owner and tenant householders respectively regard it as a problem. To manage or control this concern through external intervention is difficult, and perhaps impossible in some cases. However, the source of the most serious problem of smoke is outdoor fires. This suggests that households are burning

³⁵The human sensory perception of the external environment is fundamentally through the organs—the eyes, the nose, the ears and the skin (Narasimhan, 1984). All humans cannot be identical in this respect; hence they will discern their environment differently.

³⁶See Section 8.7.

Table 7.16: Household appraisal of environment: Problem of smoke (percentage frequencies rounded and score [in brackets]* by tenure group)

SOURCE	SWAHILI VILLAGE		BONDENI	
	Owners	Tenants	Owners	Tenants
Residential sources	20 [1.60]	28 [1.96]	60 [2.15]	61 [2.16]
Commercial sources	32 [1.75]	24 [2.43]	22 [1.20]	24 [1.96]
Manufacturing/crafts	4 [1.00]	10 [1.69]	18 [1.39]	10 [2.17]
Outdoor fires	16 [2.00]	31 [2.07]	56 [2.19]	58 [2.29]
AGGREGATE SCORE	[6.35]	[8.15]	[6.93]	[8.50]

*In calculating the score, if the environmental problem is rated a "Minor problem" it is given a score of 1; a "Moderate problem" is given a score of 2; and a "Serious problem" is given a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00. To compute the aggregate score, the scores for all the sources are totalled, which generate a scale with a minimum value of 4.00 and maximum of 12.00.

solid waste due to problems of how to otherwise dispose of it owing to inadequate or non-collection by the local authority, especially in Bondeni. However, the problems encountered in informal settlements with respect to solid waste management, as well as the fiscal and related resource constraints facing the municipal authorities, are well known.

Smoke from the various sources was for the most part more of a nuisance to tenant householders than owners in Swahili Village. Commercial sources and outdoor fires aroused the greatest complaint from tenant and owner householders respectively. In Bondeni, the number of owner and tenant householders who raised an issue about smoke from the various sources was almost equal; open fires were the source of greatest complaint for both tenure groups. Overall, smoke was more of a problem to householders in Bondeni than in Swahili Village.

7.4.2. Household Appraisal of the Environment: Smell³⁷

Sources of smell which may be a nuisance or environmentally problematic in informal settlements in the South are manifold. However, by and large, organic rather than inorganic matter is likely to produce (offensive) smell or odour. Smell may be deemed an environmental problem for a variety of reasons.

The decomposition of organic matter can produce a powerful, rank smell; it is for this reason that heaps of solid waste in informal settlements, which contain household solid waste comprising of up to two-thirds of organic kitchen wastes, are the source of offensive odour. Acrid smells can be irritants to the nose and eyes. Smells associated with pit latrines may also be repugnant and nauseating. More critically, however, odours emanating from the faecal matter in pit latrines attract flies which breed in the pit (Cotton *et al.*, 1995; Morgan and Mara, 1982).³⁸ Flies are not

³⁷Smell and odour are used interchangeably and taken to mean the same thing.

³⁸As many as 150,000 flies can breed and emerge from a single pit latrine in a year (Morgan, 1990)

Table 7.17: Household appraisal of environment: Problem of smell (percentage frequencies rounded and score [in parentheses]* by tenure group)

<u>SOURCE</u>	<u>SWAHILI VILLAGE</u>		<u>BONDENI</u>	
	<u>Owners</u>	<u>Tenants</u>	<u>Owners</u>	<u>Tenants</u>
Residential sources	24 [1.50]	35 [2.00]	56 [2.10]	53 [2.29]
Commercial sources	12 [2.28]	28 [2.27]	42 [1.87]	36 [2.16]
Manufacturing/crafts	8 [1.00]	7 [2.00]	11 [1.40]	15 [1.65]
Pit latrines	44 [1.80]	52 [1.87]	58 [1.90]	61 [2.71]
Latrines (water borne)	8 [1.00]	21 [1.34]	29 [1.91]	35 [1.90]
Ablutions (water borne)	12 [3.00]	3 [3.00]	18 [2.00]	26 [1.87]
Open drains	68 [1.83]	41 [2.17]	98 [2.57]	95 [2.71]
Solid waste (heaps/dumps /pits)	48 [2.08]	31 [2.09]	89 [2.62]	86 [2.69]
Outdoor fires	16 [1.75]	24 [2.43]	64 [2.04]	61 [2.25]
AGGREGATE SCORE	[16.24]	[19.17]	[18.44]	[20.23]

*In calculating the score, if the environmental problem is rated a "Minor problem" it is given a score of 1; a "Moderate problem" is given a score of 2; and a "Serious problem" is given a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00. To compute the aggregate score, the scores for all the sources are totalled, which generate a scale with a minimum value of 9.00 and maximum of 27.00.

only vectors of excreta-related diseases, but also transmit a number of other diseases to humans.³⁹

As in the case of smoke, it is possible to control and manage smell-related environmental problems from some sources, while others are not amenable to external intervention. The implications of smell, with respect to environmental planning and management, are largely dependent on the source. For example, it may be possible to either regulate or zone some small scale enterprises that are the source of malodorous smells.

Complaints of bad smell were significantly higher amongst both tenure strata in Bondeni than in Swahili Village. Paradoxically, the source of greatest complaint of odious smell was the open storm water drains in Bondeni—one of the components of the upgrading project aimed at ameliorating environmental conditions in the neighbourhood. A full 98% of owner householders said it was a problem (73% rating it serious), as did 95% of tenant householders (77% rating it serious). The problem of obnoxious smell is largely due to the fact that a substantial number of households throw their solid waste into the drains. This was followed by malodorous smell from solid waste heaps/dumps/pits, again in Bondeni (89% and 86% of owner and tenant householders respectively), and then bad smell from outdoor fires, yet again in Bondeni (64% and 61% of owner and tenant householders respectively). All these complaints point to a critical problem of solid waste management. However, it should be recognized that the management of solid waste is one of the most costly urban services to provide (UNCHS, 1988).⁴⁰

³⁹See Section 8.13.4.

⁴⁰Solid waste management typically absorbs up to 1% of GNP and 20 to 40% of municipal revenues in the South(UNCHS, 1988).

Table 7.18: Household appraisal of existing environment: Problem of noise (percentage frequencies rounded and score [in parentheses]* by tenure group)

	SWAHILI VILLAGE		BONDENI	
	Owners	Tenants	Owners	Tenants
Residential sources	24 [2.16]	36 [1.89]	51 [2.18]	58 [2.34]
Commercial sources	28 [1.98]	29 [1.99]	53 [2.08]	39 [2.13]
Manufacturing/crafts	8 [2.00]	7 [2.00]	27 [1.64]	26 [1.64]
Outdoor fires	8 [2.50]	21 [2.17]	24 [1.70]	21 [1.84]
AGGREGATE SCORE	[8.64]	[8.05]	[7.60]	[7.95]

*In calculating the score, if the environmental problem is rated a "Minor problem" it is given a score of 1; a "Moderate problem" is given a score of 2; and a "Serious problem" is given a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00. To compute the aggregate score, the scores for all the sources are totalled, which generate a scale with a minimum value of 4.00 and maximum of 12.00.

7.4.3 Household Appraisal of the Environment: Noise

Noise, as defined by Chan (1988:208), is "unwanted or undesirable sound".⁴¹ Specific effects of noise can be distinguished into three major categories: physiological, psychological and psychosocial. The psychosocial effects and other impacts are individual or community responses towards the disturbance, unpleasantness, annoyance and disruptive influences of undesirable noises (Chan, 1988). Noise has long been recognized as a "major 'community pollution problem'" (Senn, 1971:487).⁴² The health impacts of noise on inhabitants of large urban centres cannot be ignored, even if the precise health and environmental effects are not fully known. Temporary or permanent loss of hearing is the best known health impact, although high noise levels are also recognized as one of the critical stress factors which influence mental disorders and social pathologies (Hardoy *et al.*, 1992).⁴³ In addition to affecting hearing acuity and psychological well-being, noise may also give rise to a range of other medical symptoms. Noisy neighbourhoods thus constitute one of the facets of residential location which can be detrimental to health (Smith, 1989).

Noise from residential sources in Bondeni occasioned most complaints, coming from over half the householders in both tenure groups. However, as with smoke and smell, this environmental nuisance is difficult to control. This was followed by noise from commercial sources, again in Bondeni, where 53% and 39% of owner and tenant householders respectively deemed it a problem. The commercial sources that generate the most noise are rooms within houses that have been converted into bars.

⁴¹ Apart from the physiological limits to a limited range of intensity and frequency of noise, whether a noise is deemed disturbing or undesirable depends on the individuals internal state, his value judgements and needs at a certain time (Chan, 1988). Perception of noise as a problem is thus highly subjective.

⁴² Indeed, Peil (1994) asserts that, in Lagos, noise pollution is an even worse problem than air pollution, increasing with relative affluence—blaring radios and record players from shops and homes and amplified Muslim calls to prayer encourage or supplement high-volume conversation.

⁴³ Jackson and others (1989) similarly assert that in the domestic environment, the principal effect of noise is probably the stress it causes; is not, however, necessarily related to noise level.

Table 7.19: Household appraisal of existing environment: Flies, mosquitoes and rodents

ENVIRONMENTAL FACTOR	Swahili Village		Bondeni	
	Owners	Tenants	Owners	Tenants
Problem of flies	92 [1.60]	68 [1.63]	80 [2.25]	78 [2.32]
Problem of mosquitoes	96 [2.54]	89 [2.26]	96 [2.76]	97 [2.70]
Problem of rodents (rats/mice)	84 [1.96]	82 [2.00]	82 [2.27]	90 [2.57]
AGGREGATE SCORE	[6.10]	[5.89]	[7.28]	[7.59]

*In calculating the score, if the environmental problem is rated a "Minor problem" it is given a score of 1; a "Moderate problem" is given a score of 2; and a "Serious problem" is given a score of 3. The frequencies in each category are multiplied by the score and the total divided by 100. This creates a scale with a minimum value of 1.00 and a maximum of 3.00. To compute the aggregate score, the scores for all the sources are totalled, which generate a scale with a minimum value of 3.00 and maximum of 9.00.

7.4.4 Household Appraisal of the Environment: Flies, Mosquitoes and Rodents

Virtually all human communities are affected by insects, arthropods and rodents in several important ways, the most apparent of which originates from their role as vectors and reservoirs of human disease (WHO, 1972). Certainly, in the South, a large variety of disease vectors feed, live and/or breed within urban dwellings and their environs, and are a major concern. The diseases they carry or transmit include some of the prevalent causes of morbidity and premature death—especially malaria (anopheles mosquitoes) and diarrhoeal diseases⁴⁴ (blowflies, houseflies and cockroaches⁴⁵). In addition, they may facilitate the spread of excreted infections, destroy food, and cause several other problems (Hardoy *et al.*, 1992; McGranahan, 1993). Although the harm done by insects and rodents as annoying pests is hardly comparable to the malady and loss they cause as disease vectors, it is by no means negligible—certain pest can seriously affect human well-being (WHO, 1992).

Mosquitoes are probably the most important insect vectors in both rural and urban areas. There is no paucity of clean surface-water in which *anopheles* mosquitoes, the vectors of malaria can breed—a tin filled with water suffices. Although anopheline mosquitoes generally shun polluted water, certain species have adapted to the urban environment and have contributed to disease outbreaks in a number of cities (Hardoy *et al.*, 1992; McGranahan, 1992; 1993; Salem, 1994). Gnats develop into what Salem (1994) describes as 'genuine urban mosquitoes' because pools of stagnant dirty water, their favourite reproductive medium, are plentiful in large urban centres. Certainly, the stagnant pools in stormwater drains in Bondeni which form as a result of households pouring their waste water into them are ideal breeding grounds for mosquitoes.

The percentage of owner and tenant householders in Swahili Village who complained of mosquitoes being a problem was 96% and 89% respectively, compared with 96% and 97% of their respective counterparts in Bondeni. However, while 54% and 52% of owner and tenant

⁴⁴Diarrhoeal diseases kill one child every 20 seconds worldwide (Cairncross, 1990:108).

⁴⁵Cockroaches are not included in the discussion as they thrive primarily inside dwellings, the cleanliness of which is the responsibility of individual households.

householders respectively in Swahili Village found the problem to be serious, in Bondeni 81% and 75% of owner and tenant householders respectively rated it as serious.

Flies may well be the next most important insect vector, and their impact is even more closely related to urban environmental features (McGranahan, 1993). Flies are vectors of excreta-related diseases which are responsible for a significant proportion of the morbidity and mortality in the South, especially amongst low-income communities in informal settlements where adequate water supplies and sanitation facilities are typically absent (Cotton *et al.*, 1995; Morgan and Mara, 1982). A WHO report, cited by Hardoy *et al.* (1992:47) notes that:

Within the home, there are likely to be numerous interconnections and interactions among water, sanitation, flies, animals, personal hygiene and food that are responsible for diarrhoeal transmission.

In Swahili Village, 92% of owner households said flies were a problem (only 4% rating it serious) compared with 80% of owner householders in Bondeni (one-half rating it serious). On the other hand, 68% and 78% of tenant householders in Swahili Village and Bondeni respectively regarded flies as a problem, with twice as many in Bondeni (52%) as in Swahili Village rating it serious.

According to Carrol (1990), with the exception of human beings, commensal rodents (rats and mice) are the most successful and abounding mammals at present. In informal settlements rodents breed in the heaps of solid waste that accumulate as a result of inadequate or non-collection of domestic solid waste. Rodents live at the expense of humans, invading their dwellings and eating their food. In addition, they can also transmit a number of diseases to mankind, including plague (Carrol, 1990).

Almost equal numbers of householders in both tenure strata in the two *majengos* affirmed there was a problem of infestation of rodents. However, the problem is more serious in Bondeni, where 43% and 66% of owner and tenant householders respectively rated it serious, compared with 10% and 39% of their respective opposite numbers in Swahili Village.

7.5 Household Preferences, Priorities and Willingness To Pay

If people are to be motivated to participate actively in the execution of projects, it is essential that the projects should meet their most urgently felt needs and have some immediate impact on their living conditions. Involving the poor and their organizations (CBOs, NGOs, political associations, etc.) effectively means not simply sharing responsibility, but also sharing power over such issues as land use allocations, service delivery priorities and budget allocations. In addition to determining the needs and priorities of the beneficiaries, their capacity and willingness to contribute to the cost of the project in the form of money, skills, labour, etc., also

Table 7.20: Priority ranking of services/utilities: Swahili Village (scores on seven services/utilities, by tenant group)

	<u>Owners</u>	<u>Tenants</u>
Water supply	2.36	1.99
Sanitation	1.44	1.57
Solid waste disposal	0.20	0.18
Stormwater drainage	0.20	0.15
Access roads/footpaths	0.04	0.25
On-plot electricity supply	1.40	1.00
Street lights	0.36	0.79

needs to be assessed (UNCHS, 1984; 1994). Willingness to pay may be influenced by the following factors noted by Tayler and Cotton(1993:154):

- the perception of the intended beneficiaries of the necessity for and the advantages of the proposed upgrading works; and
- the presence or otherwise of similar schemes in the area or adjacent areas for which no cost recovery is attempted.

There are few institutional mechanisms for the incorporation of demand information in the planning process in the South. Consequently, misjudgements about consumer preferences have often resulted in poor project design and performance (Atlaf and Hughes, 1994). A fundamental problem in the upgrading project in Bondeni was the lack of involvement of the targeted beneficiaries in the execution of the project.⁴⁶ The resident community was neither briefed beforehand about the proposed upgrading project, its objectives, the components of the project, and the implications to the owners in terms of cost recovery, nor were they consulted in order to establish their priorities and willingness to pay or contribute towards the project in some other manner. Subsequently, attempts at cost recovery were fraught with problems. Indeed, in the first instance, the majority of owners refused to pay to have an on-plot water supply connected to the ablutions. In point of fact, to this day only a small number of plots have functional water borne sanitation.

7.5.1 Household Priority Ranking of Services to be Provided in an Upgrading Project: Swahili Village

Survey after survey has shown that a desire for a copious supply of potable water usually ranks foremost of all expressed needs in informal settlements (Hollnsteiner, 1976). The findings of the present study are no different. When asked which services they would elect for, in order of priority, if an upgrading project were to be implemented in Swahili Village, the greater number of owners (64%) singled out water. Although only just under one-half of tenants accorded water highest priority, this was nevertheless higher than for the other service options. Amongst the owners, only 12% did not mention water as one of their three top priority services, as was the case with 19% of tenants. Sanitation was ranked first by 16% and 29% of the owner and tenant

⁴⁶This despite the recommendation of the Low Income Housing Report (RoK, 1985:6) that: "Community participation in major low-income housing schemes should be encouraged . . . "

Table 7.21: Willingness to contribute towards priority services/utilities: Swahili Village(percentage frequencies by tenure group rounded)

	<u>Owners</u>	<u>Tenants</u>
Water supply:	2.40	2.20
Sanitation:	1.34	1.68
On-plot electricity supply	1.39	1.02
Street lights:	0.28	0.64
Stormwater drainage	0.20	0.28
Solid waste disposal:	0.20	0.16
Access roads/footpaths:	0.04	0.20

group respectively, while 32% of owners and 30% of tenants ranked it second. Significantly, the great majority of both owners (84%) and tenants (89%) did not include solid waste disposal among their top three priority services.

7.5.2 Willingness To Pay for Services in an Upgrading Project: Swahili Village

Public participation is not only a means of ensuring acceptance, but can also be used as a means of project financing. A willingness to pay for infrastructure is an indication of a wish to benefit from a project and even when the ability of a poor person to pay is very limited, individuals can still contribute labour.⁴⁷ For this to be possible, however, the project must be designed to accommodate this manner of assistance (UNCHS, 1981). Or as Tipple and others (1994:37) contend:

If urban residents are involved in the planning of environmental improvements of their neighbourhoods, they will be willing not only to pay for such upgrading, but to contribute their labour to its achievement.

Indeed, AMREF's projects in informal settlements in Nairobi have demonstrated that residents are not only willing to participate in cleaning up their neighbourhoods, but also are willing to share the costs, for example of improving human waste disposal (Lamba, 1994).

Willingness to pay was elicited for various services/utilities that might be included as part of an upgrading project in Swahili Village.⁴⁸ Householders were most willing to pay for water. which is not unexpected as it was the service given the highest priority. Solid waste disposal, storm water drainage and access roads and footpaths were the services that householders would be least willing to pay for.

⁴⁷ Site and services and upgrading projects have witnessed community-level participation in such diverse spheres as planning, collective labour, materials production and distribution, maintenance, employment generation, estate management and health care (Skinner, 1983).

⁴⁸ Although aware of the possibility of using the contingent valuation method which relies on direct elicitation of consumer preferences and willingness to pay, the author opted not to do so due to anticipated problems in the (iterative) bidding procedure. See Atlaf and Hughes (1994) for a description of the application of the contingent valuation method to estimate household demand for improved sanitation services in Ouagadougou, Burkino Faso.

7.5.3 Willingness to Contribute Free Labour: Swahili Village

Tenure status, Andreassen (1996) maintains, is only one of several factors which condition the motivation to participate in community work. Other factors include economic and social insecurity and the (rational) maintenance of rural links. Lack of stability and roots in urban areas engender limited interest in investing resources and energy in politics, organization, community work and housing amongst urban dwellers. Certainly, the incentive to protect and/or ameliorate the environment is reduced when, as is often the case in low-income housing areas, people have insecure tenure (McGranahan and Songosore, 1994). As Andreassen (1996:364) argues:

Why, in any case, should a renter provide unpaid labour to improve the landlord's house and environment, only to see the rent increased due to improvements?

Both owner and tenant householders in Swahili Village were asked if they would be willing to contribute free labour if an upgrading project was implemented in the settlement. The response was notable—77% and 75% of owners and tenant heads of household replied in the affirmative. All the tenant householders who intend to remain in Machakos said they would be willing to contribute free labour as did 72% of those who intend to return to their 'home' rural area. On the other hand, none of the owners who intend to move to another rural area were prepared to contribute free labour; 76% of those intending to remain, however, would be willing to do so.

The apparent readiness of householders in the two tenure strata to volunteer labour notwithstanding, it should be born in mind that the majority of the latter group rely on income from employment to pay the rent for their accommodation, unlike owners, some of whom may live comfortably on the rent they receive from their tenants and, therefore, be able to contribute labour freely.

7.5.4 Willingness To Pay Higher Rent: Swahili Village

As mentioned earlier, upgrading schemes can have the paradoxical effect of harming the tenant population in informal settlements—any improvements in infrastructural services may have the negative result of raising rents, thus contributing either to overcrowding or displacement of poorer tenant households.

Tenant householders in Swahili Village were thus asked if they would be willing to pay higher rents for their present dwellings in the event of an upgrading project's being implemented in the settlement. Seventy-six per cent of the respondents stated that they would be willing to pay higher rents if services in the neighbourhood improved as the result of an upgrading project. Closer analysis reveals that 82% of the tenant householders who intend to return to their 'home' rural area would be willing to pay more rent if services were improved while 18% would not. Of those intending to remain in Machakos, 25% would not be willing to pay higher rent.

Table 7.22: Satisfaction with the existing environment: Swahili Village

	<u>Owners</u>	<u>Tenants</u>
Satisfied	58	73
Indifferent	0	8
Dissatisfied	42	19

If tenants are indeed willing to pay higher rents, this could have significant implications for effective cost recovery if an upgrading project were to be implemented in Swahili Village.

7.6 Satisfaction with the Existing Environment: Swahili Village

People's perception of their residential environment, as mentioned earlier, will vary from individual to individual. Conventional wisdom might expect owner households to perceive their environment differently from tenant households for a number of reasons. These include the fact that most owners have been resident in the settlements for a considerably longer time than the tenants, and have thus grown accustomed to what might be perceived by others as negative aspects of the environment and are comfortable living with them. This, however, is not the case in Swahili Village. The level of satisfaction with the environment was higher among tenant householders (73%) than owners (58%). Of the tenant householders planning to return to their 'home' rural areas, 72% expressed satisfaction with the environment, 22% dissatisfied and 6% indifferent. Sixty-seven percent of tenant householders who intend to remain in Nakuru declared satisfaction with the environment; 17% were dissatisfied and a similar number indifferent.

7.7 Household Appraisal of Upgrading Project in Bondeni

A predominant objective of upgrading projects in informal settlements is to improve the environmental conditions in these disadvantaged neighbourhoods. The extent to which this can be anticipated to happen will be largely dependent upon the detailed formulation of the project, which in turn can be guided by a variety of objectives, each of which has its own rationale (Martin, 1983). However, just as there is a no *a priori* reason to presuppose that all the participants in the upgrading process⁴⁹ will share similar objectives (Angel, 1983), so there is no reason to assume that all the participants will be of the same opinion regarding whether or not an upgrading project has been efficacious. Certainly, one would not anticipate that owners and tenants would be entirely in agreement as to the impact of upgrading interventions on their housing conditions in informal settlements.

The primary concern of the upgrading project in Bondeni was to improve infrastructural services in the neighbourhood. The components of the project thus included: water supply. water borne

⁴⁹See Angel (1983) for a differentiation of the six groups of participants in the upgrading process.

Table 7.23: Household appraisal of upgrading project: Bondeni (percentage frequencies by tenure group rounded)

	<u>Owners</u>	<u>Tenants</u>
Water supply improved	80	66
Street lights beneficial	64	49
Sanitation improved	51	56
Roads/footpaths beneficial	49	55
Waste water disposal improved	33	31
Surface water drainage improved	29	14
Solid waste disposal improved	25	14
Stormwater drainage beneficial	7	22
General on-plot living conditions improved	51	42

sanitation, solid waste disposal, stormwater drainage, access roads/footpaths and street lighting. Householders were asked if they had benefited from improved services following the installation of the various components.

Improved water supply was the service that the greatest number of both owner and tenant householders considered they had benefited from, although the number in the former group (80%) was considerably higher than that in the latter (66%). A little over one-half of both owners and tenants affirmed that they had benefited from improved sanitation as a result of the project. Similarly, about half of the tenant householders considered the streets lights beneficial, but the number of owners who thought likewise was again considerably higher (64%). Less than one in ten owners felt that stormwater drainage had improved following the construction of the open channel drains compared to about two in ten of tenant householders.

Owner and tenant householders in Bondeni concurred (82% and 84% respectively) about the service they thought had been of most benefit—water. It is likewise the service that the greatest number (64% of owners and 76% of tenants) would be most willing to pay for. The infrastructural components of the upgrading project that in the opinion of householders had been of least benefit were stormwater drainage (27% and 38% of owners and tenants respectively) and roads/footpaths (34% and 25% of owners and tenants respectively). Most owners (43%) and tenants (31%) would have been least willing to pay for road/footpaths.

Just over half of the owners in Bondeni felt that their on-plot living conditions had improved as a result of the upgrading project compared to 42% of tenant householders. One-half of the tenant householders who intend to return to their 'home' rural area stated that their on-plot living conditions had improved, but the other thought it had not. Of the tenant householders who intend to remain in Nakuru, 43% were of the opinion that their on-plot living conditions had improved, but 57% believed it had not.

With regard to the general environment within the settlement, again a little over one-half of the owners thought it had indeed improved compared to only about one-third of tenants. On the

Table 7.24: Household appraisal of upgrading project

		<u>OWNERS</u>	<u>TENANTS</u>
Service of most benefit:	Water supply	82	84
	Sanitation	5	9
	Solid waste disposal	0	0
	Stormwater drainage	0	0
	Roads/footpaths	0	2
	Street lights	14	6
Service of least benefit:	Water supply	0	2
	Sanitation	2	4
	Solid waste disposal	21	19
	Stormwater drainage	27	38
	Roads/footpaths	34	25
	Street lights	15	13
Service most willing to pay for:	Water supply	64	76
	Sanitation	7	12
	Solid waste disposal	5	3
	Stormwater drainage	7	2
	Roads/footpaths	2	2
	Street lights	14	5
Service least willing to pay for:	Water supply	0	10
	Sanitation	0	3
	Solid waste disposal	10	10
	Stormwater drainage	29	27
	Roads/footpaths	43	31
	Street lights	19	19
Environment within settlement	Improved	51	32
	Worsened	31	37
	Same	18	31

other hand, 31% and 37% of owners and tenants respectively affirmed that the environment within the settlement had worsened. Whether they intend to return to their 'home' rural area or remain in town apparently has no bearing on tenants' appraisal of the impact of the upgrading project on the environment in the settlement. Opinion was equally divided among tenant householders wishing to return home as to whether the environment has improved (one-third), worsened (one-third) or remained the same (one-third). Similarly, 32% of tenant householders who intend to remain in Nakuru affirmed that it had improved, while a similar number thought it had worsened; 36% thought it had remained the same.

7.8 Summary

Inadequacy of infrastructure and deficient basic services, which precipitate degraded living environments and poor health conditions, are a paramount problem in the vast majority of informal settlements inhabited by the urban poor in Kenya. Swahili Village and Bondeni are both apparently not exceptions, this despite the upgrading interventions in the latter *majengo* under the auspices of the Third Urban Project in Kenya. However, households in Bondeni

unquestionably have better access to on-plot water supply than their counterparts in Swahili Village as a result of the upgrading exercise, but not to on-plot water borne sanitation which was also one of the physical elements of the upgrading project. On the whole, owner and tenant households in the two *majengos* have almost equal access to on-plot services, and their satisfaction levels with the services are comparable. The priority ranking of on-plot services of the two tenure groups in Swahili Village and Bondeni is similar, and the majority of both owners and tenants in both *majengos* would be willing to pay for better access to their priority on-plot service, namely water.

The upgrading project in Bondeni seems to have done little to improve general on-plot living conditions and overall environmental conditions in the settlement. In point of fact, the unlined open channel drainage network—one of the components of the upgrading project aimed at ameliorating environmental conditions in the neighbourhood—is a major source of environmental nuisance. Not only is it the source of malodorous smell due to the fact that a substantial number of neighbourhoods throw their domestic solid waste into it; the open storm water drains are also an ideal breeding ground for mosquitoes. Opinion among owner and tenant householders in Bondeni as to whether or not the general environment in the neighbourhood has improved as a result of the implementation of the upgrading project is divided, but those who think it definitely has are in the minority.

Chapter Eight

ENVIRONMENTAL PLANNING AND MANAGEMENT OF INFORMAL SETTLEMENTS: POLICY IMPLICATIONS AND AN AGENDA FOR ACTION

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8.1 Introduction

The purposes of this chapter, the ultimate in the thesis, are manifold. It recapitulates the key research questions behind the study and the deliberations thus far. It aims to synthesize the various interrelated concerns which have been discussed in the study, including theoretical, conceptual and contextual issues and precepts in substantive chapters of the thesis and Appendix One (based on the extensive literature review), and the salient findings from the two preceding chapters of analyses. The chapter considers the development of pragmatic opportunities and proposes pursuable policies and programmes which are realistic and implementable. These are intended to be replicable on a sufficiently large scale so that appropriate and sustainable upgrading of urban low-income informal settlements in Kenya can be achieved and generate improvement in the housing conditions of the poor, vulnerable and disadvantaged groups compelled to live in them. Exploratory conclusions from the insights and understandings gained for policy deliberations and formulation, and methodological propositions and matters of practice are also presented. Lastly, the chapter points to lacunae of knowledge which may provide direction for a research agenda.

8.2 Future Policy Scenario

The future in the South appears daunting. The resource base is diminishing relative to population growth and there is little prospect of the economic base improving substantially either through national or international action in the immediate future. The situation is critical because, not only is it improbable that resources will increase, but the high population growth rates are projected to continue to rise. Demographic forecasts also indicate a radical shift in the incidence of poverty: by the end of the 1990s, the majority of the poorest households will be concentrated in urban rather than rural areas. Massive migratory flows from rural areas to urban informal settlements will persist, making the extension of basic services and amenities to the growing number of poor households a complex and difficult task. The reality is that, unless economic conditions alter, the quality of life will further deteriorate. Neither government nor private enterprise will provide adequate shelter, environmental infrastructure and services. Moreover, the most influential bilateral and multilateral donors are tending towards an apparent de-emphasis on housing-specific investment. The inevitable conclusion is that informal settlements, in one form or another, will have a vital role to play in the foreseeable future (Gilbert, 1992b; Hamdi, 1991; Haywood, 1986; Rondinelli, 1988; Sanyal, 1988; Tipple, 1994c).

That the above scenario can be anticipated in Kenya is substantiated by the analysis of the urban housing situation in Kenya (Chapter 2) and the review of studies of informal settlements in Kenya (Chapter 4). Moreover, in early 1994, the managing director of Housing Finance

Company of Kenya (HFCK)¹ confirmed the retreat of finance institutions from housing in the face of the prevailing inflationary trends; thus the prospects are that the "informal sector [will] continue dominating supply in the coming years" (cited in Gatabaki-Kamau, 1995:46). And more recently, the Head of State, President Moi, has decreed that the demolition of informal settlements in Nairobi should cease (Shimoli and Rugene, 1997).

It is with this understanding that the following assertions (Franklin, 1984; Hardoy and Satterthwaite, 1989) are upheld by the present thesis and constitute the basis for many of the proposals and recommendations:

- Whatever the Government may wish to believe, it is inevitable that the greater part of future urban growth will be characterized by the development of informal settlements.
- Without positive government intervention, such growth will continue to be illegal, unplanned, uncontrolled, unbalanced, detrimental to health and well-being, and ultimately difficult and costly to upgrade, thus compounding already massive existing problems in the larger urban centres.
- Alternatively, if such growth constitutes part of official urban and development policies and programmes, formulated in advance of need, it can be legal, planned, controlled, balanced, salubrious, and not problematic to upgrade over time, and also form a recognized and accepted part of low-income housing provision.

In sum, it appears that increasing the access of the urban poor in Kenya to housing and services is not only likely to continue to be a critical issue, but that its solution will require a composition of innovative approaches in which informal settlements figure prominently. The political implications are profound because they will demand the adoption of development policies more orientated towards the level of resources likely to be available and the needs of the low-income group. The poor, however, generally have no constituency from which to present their case and are, in fact, considered a threat to established order and values in some quarters (Haywood, 1986). The resolution of their housing needs will, consequently, require a strong political commitment to the development of new approaches, institutions and standards.

8.3 Re-constitution of a Housing Ministry

A primary recommendation of the present thesis, regarded as imperative if the urban housing issue is to be accorded the priority it warrants and duly addressed, especially as concerns the provision of adequate housing for the low-income majority, is the re-establishment of a separate housing ministry. In this regard, the 1970-1974 Development Plan, touched upon in Chapter 2.5.5.2, states:

¹ The foremost housing finance institution in the country.

The establishment of the Ministry of Housing as a separate Department of State has helped to provide the leadership needed at the national level for the formulation of a new and progressive national policy on housing and for the co-ordination of the efforts of all concerned with public housing. The greatest priority has been on providing more housing in the towns because of the high rate of urban population increase. (RoK, 1970:506)

In the light of this affirmation, it is difficult to comprehend why housing was subsequently relegated to a department under an umbrella ministry comprising one or more other departments. Moreover, the National Housing Strategy for Kenya, outlined in Chapter 2.5.6, emphasizes the exigency of conferring on housing "the position it deserves in the nation's constitutional and legal framework by giving the Housing Department statutory duties and obligations" (RoK, 1987: 34). It moreover stresses that housing should be regarded as "a major area of governmental concern in its own right, rather than an adjunct to public health, the construction industry or public works" (RoK, 1987: 34).²

This thesis maintains that the re-constitution of an individual housing ministry is fundamental to real progress in finding pragmatic solutions to the urban housing question because it will presumably facilitate recommendations for public policy. A separate ministry will, conceivably, promote the review of housing policy and formulation of appropriate strategies for informal settlements which remove biases against their development. An efficiently staffed ministry working in conjunction with local authorities will, furthermore, be able to better comprehend the following and hence devise appropriate strategies: (i) the operation of urban housing markets and the role of informal settlements; (ii) the characteristics of informal settlements, and (iii) the potential of developers in informal settlements as suppliers of affordable low-income (rental) housing.

In the context of an enabling role for government in national shelter strategies, a separate housing ministry will facilitate upgrading of informal settlements through various measures, including:

- creating an enabling legal and regulatory environment for housing activity and informal settlements in particular;
- exploring ways of regularizing informal settlements, with safeguards for avoiding the displacement of existing residents;
- rationalizing planning standards and building standards, including making provision for rental accommodation in informal settlements;
- installing a widely accessible information network on informal settlements;
- facilitating initiatives of owner and tenant groups to organize and manage housing and services, and secure finance on affordable terms and to negotiate land sharing in informal settlements;

²The Housing Department is at present subordinate to the Ministry of Public Works and Housing.

- identifying the scope for subsidies for low-income households in informal settlements.

A separate housing ministry will almost certainly be able to command a larger share of total Government capital investment for urban development. Indeed, through the influence of a separate ministry, public investment in urban housing and infrastructure will more likely increase as a share of gross fixed capital formation, and reduce the backlog in their provision. There is reason to believe, also, that a separate ministry will be given additional resources to reinforce its professional and technical staff, thereby making it more effective.

In addition, a separate housing ministry will be better able to review the role that NGOs and co-operative type organizations play in the housing sector and expand their contribution to the improvement of housing conditions in informal settlements by advising the Government on how to improve the legal framework which governs the functioning of housing co-operatives and companies; providing incentives to co-operatives and companies for construction of improved housing in informal settlements; and encouraging the formation of landlords/owners and tenants organizations.

8.4 Innovative Urban Policy Approaches

8.4.1 The New Internationalist Urban Policy Approach

Urban authorities' quality of management is of major consequence on whether or how urban areas develop; and the emergence of the environment as a high priority urban issue—the 'brown agenda'—has necessitated a more substantial role for local government in urban management (Webster, 1994). In Chapter 2.2, it was noted that the spatial dimensions approach to development, in which the growth of urban centres is an important component of the Government's policy of achieving a rural-urban balance, is transforming the urban structure from a pattern of urban primacy to a spatially extensive urban pattern (RoK, 1997). Consequently, urban management should adapt to the expectation of continued rapid urban expansion. As Obudho (1993:90) stresses: "Rapid urbanization in Kenya must be recognized as a source of many development problems that will continue to tax the meagre . . . infrastructure of the urban [centres]."

There is a growing convergence in terms of what constitutes appropriate policies to deal with urban growth and related issues. While this trend partly reflects the ostensible "end of ideology" that has accompanied the end of the cold war, it is more probably a reflection of increased globalization of the information base and the professional community which deals with urban issues (Webster, 1994: viii). It is recommended that Kenya adopt the main pillars of the new conventional wisdom on urban development, which include:

- Planning and development controls should guide urban development, but be sufficiently flexible to not interfere significantly with supply of housing and related services and amenities, or deter low-cost solutions to problems. If not, the poor will suffer most through supply-side induced inflation in terms of land or housing or inappropriately built environments to meet their needs.³
- Urban planning and management authority should cover the extended urbanized area since most population accretions will be in informal settlements on the periphery of built-up areas.
- Urban centres are built by the private sector, not by governments. Hence, discourse between the private sector—whether formal or informal—is crucial in managing and planning urban areas.
- "Projectizing" urban areas, although necessary for some functions, will not solve the system-wide problems.
- Within reasonable limits, urban infrastructure and service provision should be privatized for reasons of higher quality of service, cost-effectiveness and, in the case of infrastructure, to access capital.
- Many urban improvements are best rooted in the community or neighbourhood; however, co-operation among local government, NGOs and CBOs is necessary.

Further issues which this thesis deems critical in the urban agenda for the 1990s in Kenya include the following, which are all closely interrelated in expediting the effective transition from rural to urban societies but are also important in their own right:⁴

- Improve urban management, including decentralization of authority and responsibility for urban development from central government agencies and ministries to local government and NGOs and expansion of local governments' revenue-generating capacity.⁵
- Promote the protection and regeneration of the urban physical environment, particularly in informal settlements.
- Promote enabling and participatory strategies for the provision of affordable shelter and environmental infrastructure.
- Alleviate urban poverty by promoting the role of the informal sector.

8.4.2 Local Governance and Subsidiarity

Local governance has become a key issue in urban development largely as a result of the elaboration and implementation of decentralization policies in many countries including the

³ As Webster (1994) points out, due to equity implications this is probably the most difficult issue to deal with conceptually.

⁴ These issues are mentioned by the ILO (1993:6).

⁵ Raising the efficiency with which local governments collect revenue (e.g., land taxes) may induce price rises and raise housing costs for the poor, as Jones and Ward (1994:42) caution: There is, hence, a direct trade-off between the financial strength of local authorities and the cost of urban life for low-income households.

emergence of the concept of subsidiarity. The consequential role that competent and representative local governments can play in mobilizing local resources (more effectually than higher levels of government) and co-ordinating and directly delivering services to the urban poor is now widely recognized. (Hardoy and Satterthwaite, 1989). In line with its emphasis on policy, regulatory, and institutional reforms, and to link projects to such reforms, the World Bank will target loans and policy conditionality at the appropriate institutions—those capable of policy and regulatory reforms. This means, by implication, local authorities which administer the plurality of regulations affecting the housing sector (World Bank, 1993).

In Chapter 2.2, it was noted that the administration of urban areas is, for the most part, the responsibility of the Ministry of Local Government and local authorities, and that the Ministry has the primary responsibility of overseeing the operation and financing of the local authorities. The adoption of decentralization strategies is recommended for the following reasons, which UNCHS (1996) also forwards as cogent arguments to explain why so many other countries have done the same:

- (i) the decentralization of the provision for public services is the only way to ensure an efficient response to the variation in demand, both in quantity and quality, from place to place;
- (ii) locally financed and provided services can be produced at lower cost—and with local authorities able to work more closely with NGOs and CBOs;
- (iii) decentralized institutions should in principle be more accountable to the community; and
- (iv) many local services are interdependent, and the cost-savings from co-ordination can be more easily realized when it operates over a smaller, more local area.

The principle of subsidiarity remains important as control of resources, responsibilities and tasks are decentralized to the lowest level where their implementation will be effective. Hence, it is recommended that power and decision-making in Kenya be decentralized as far as possible. This will involve transferring power from central government to municipalities so that local responses can meet local issues; revenue generation to finance local agendas should likewise be locally controlled. Moreover, sustainable development requires decision-making to take place at as low a level as is commensurate with success, from inter-government at one end to the household level at the other. As locally made decisions will probably have a more constricted scope than central decisions, there is likely to be less relocation and redevelopment under sustainable development and more neighbourhood upgrading (Tipple, 1996; Tipple *et al.*, 1994).

Stren (1994) observes that governments appear to have been loathe to devolve much power to their local authorities and have placed innumerable impediments in their path when it comes to assuring a steady and reliable flow of resources for their effective functioning. However, the Kenya government has adopted various policies aimed at decentralizing responsibility for

development and management of urban growth since Independence in 1963. Indeed, Sessional Paper No. 1 of 1986 (RoK, 1986b:53) states:

Measures will be taken to consolidate the capability of local authorities to plan the development of their jurisdictions and to design and implement projects. ...[and] to ensure that [they] are properly empowered to carry out these responsibilities; that they bear effective accountability for their actions and use of funds . . .

Despite this affirmation, local authorities have yet to be comprehensively empowered. There is still urgent need to grant local authorities greater autonomy in decision-making, a sound financial base, and adequate resources to manage development in their respective jurisdictions.

There is a general consensus that local authorities in Kenya are not doing their job, and that various problems are adversely affecting their performance. Local authorities in Kenya depend directly or indirectly on central government for their finances; their various sources of revenue, some of which have been withdrawn since independence, are dictated by central government (Bubba and Lamba, 1991). Indeed, local authorities are virtually bankrupt for two main reasons: (i) central government abrogated a former colonial personal tax payable by all residents in response to public demand; and (ii) central government later withdrew all grants to local authorities to reduce public expenditure (Martin, 1991). There has, moreover, been poor financial management in the major urban centres (Chana, 1984). Still, conditions on the ground suggest that urban management is not sufficiently adaptive, even in cases where change would necessitate only minimal financial expenditure. What is required, therefore, is innovative approaches to urban management that can deal with the scale of the prevalent and anticipated problems. More effort should especially be devoted to finding and implementing ways to improve financial management.

Given the rapid rate of growth of urban centres and the necessity of "doing more with less" (Ramachandran 1992:2), training should be accorded top priority as it is only through competent management that this can be achieved.

8.4.2.1 Local Authority Capacity to Deliver Urban Services

Studies have found that the shortage of trained administrative and technical staff can be at least as serious a problem for local authorities as lack of adequate revenue; it inhibits them from extending services, and can delay or impede new development projects. While Kenya has a growing surplus of unskilled labour, which is largely a result of the rural-urban migration described in Chapter 2.2, there is an acute deficiency of qualified personnel in urban management: local authorities lack the skilled personnel to plan and manage service delivery—especially to poorer areas in urban centres (Cheema, 1988; Rondinelli, 1988). Hence, it is recommended that a programme be urgently implemented to strengthen the planning, management and technical capacity of local authorities to deliver urban services, and to establish

procedures through which poorer households can participate in the planning and administration of upgrading projects in their settlements, as has been done in the Philippines (Rondinelli, 1988). The objectives will be to strengthen the local authorities' administrative and organizational structures for planning and co-ordinating urban services and amenities; to create a planning and management process that brings together central and local government officials, staff and affected citizens, to shape the physical, social and economic development of urban areas; and to train local authority personnel in managerial and technical skills required for planning and development. The programme will, furthermore, help to create procedures for identification, formulation, financing and implementation of upgrading projects.

8.4.2.2 Involvement of Chiefs

In order to alleviate the stress on the administrative capacity of the local authorities, it is advocated that various responsibilities, including monitoring of certain aspects of physical growth of urban areas, particularly informal settlements, should be devolved to chiefs and their assistants. This would mean that chiefs would be responsible for monitoring the development of informal settlements within their jurisdiction; they would certainly be in a better position to check the rampant extension that has transformed Bondeni (detailed in Chapter 6.3.2) and contributed significantly to the poor environmental conditions that prevail. Such an arrangement would also release the local authorities to devote more attention and limited resources to other more urgent tasks.

8.5 Settlement Upgrading

8.5.1 The Legal and the Illegal City

The existence of two 'cities'—'the legal city and the illegal city'—in most major Southern urban settlements is generally acknowledged. Spatially, economically, socially and politically, there is a significant distinction between the two 'cities' (Earthscan, 1983; Franklin, 1984; Hardoy and Satterthwaite, 1987; 1989). In Chapter 3.9, we saw that Kenya is no exception in this respect. Certainly Nairobi has experienced two 'urban revolutions', resulting in the development of the 'modern city' and the 'self-help city' (Hake, 1977). The exigency of recognizing the 'real' city—both the physical (i.e., the illegal settlements) and the economic one (i.e., the informal sector) has been emphasized by most of those concerned with urban problems. Informal settlements, once regarded as symptoms of dysfunctional land and housing markets, are thus recognized as an important submarket where housing improves over time (World Bank, 1993a). Upgrading, like sites-and-services, is based on this thinking (Balbo, 1993).

8.5.1.1 'De Facto and De Jure Urban Centres'

In Kenya, an urban centre is one with a population of 2,000 or more. On the basis of this definition, a great many informal settlements constitute 'urban centres' in themselves.⁶ We would propose legitimizing informal settlements so that the largest settlements could be recognized by central and local governments as '*de jure* urban centres' within the human settlements hierarchy in Kenya. Principles of urban governance in respect of their development could then be applied accordingly. In this way, informal settlements could be accorded the priority they warrant in infrastructure provision; indeed, there would be a stronger case for channelling more of the resources for urban infrastructure into them. The contention here is that settlement upgrading projects implemented in the settlements with the largest (tenant) populations and highest incidence of informal sector employment opportunities, would not be 'stand-alone' projects *per se*, and we would not simply be 'projectizing' urban areas. Rather informal settlements would warrant development assistance and financial support as urban centres in their own right.

8.5.2 Institutional Framework for Integrated and Co-ordinated Upgrading

That settlement upgrading is an important component of the Government's housing strategy is evident from the overview of housing policy, programmes and the National Housing Strategy presented in Chapter 2. Upgrading can be facilitated by the establishment of an institutional framework, for which there are two main requirements (Pasteur, 1979). First, effective arrangements to secure the delivery of the various physical components of upgrading (water supply, sanitation, drainage, roads, and street lights) in an integrated manner should be made. Secondly, those involved in upgrading should be sensitized to the social situation, and be capable of integrating social factors arising from the upgrading into physical and administrative action. This should include politicians, professionals, administrators, relevant staff in public/facilitator agencies, and especially chiefs in urban areas whom this thesis recommends should play a major role in the implementation of upgrading projects.

8.5.2.1 Establishment of an Urban Informal Settlements Development Authority

The need for integration arises because of the ineluctable distribution of functions over several public agencies or departments within agencies. This problem can be addressed through the creation of an urban informal settlements development authority to concentrate the diverse functions. The integration of most of the functions in a single body will facilitate the realization of the second requirement of sensitivity and concern, by bringing social aspects of planning and implementation into closer contact with technical functions. In this respect, an urban informal settlements development authority modelled on the housing development departments (HDDs) and project monitoring unit (PMU) established in the World Bank-funded First, Second and

⁶The inventory compiled by Matrix Development Consultants (MDC, 1993), which provides comprehensive data on informal settlements in Nairobi and is intended to be used as a basis for policy formulation and strategies for the City of Nairobi, and in particular informal settlements, indicates that the majority of settlements have a population of more than 2,000.

Third Urban Projects should be created. This authority would be the operational arm of the housing ministry proposed above and the focal point of all stakeholders in informal settlement development and upgrading, including public agencies, bilateral and multilateral agencies, the private sector (formal and informal), NGOs and CBOs. The authority should also work closely with Shelter Forum, the umbrella organization of NGOs and individuals interested in "improving access to affordable shelter for all, particularly the poorest, among whom the most vulnerable are women and children" (Shelter Forum Bulletin, 1993b).

8.5.3 Management Implications of Settlement Upgrading

Settlement upgrading as an urban development strategy calls for a peculiar approach to management. Hence, it would be most unfortunate if, the acceptance of decision-makers, planners and administrators having been gained, policy changes were frustrated or distorted by failure to take account of obligatory adaptations in management systems. Experience in Lusaka suggests that there are four main aspects of upgrading which create management needs which are distinct from those of conventional urban settlement development:

- (i) upgrading is a partnership of development action: it includes the management of self-help;
- (ii) it is a partnership of development management: there is community participation;
- (iii) the development takes place on an existing settled site; and
- (iv) the time-scale of development is extended: development is never complete and typically leads on to partnership in management (Pasteur, 1979).

The process of development action in upgrading is one in which public provision and support are linked with individual and community effort in an enabling process designed to improve ongoing development in a formerly autonomous settlement, as opposed to one in which a complete package (of whatever scope and standard) is provided as in a low cost housing scheme. Individual efforts typically consist of self-help or self-controlled house construction; community effort comprises contributions to infrastructure or community facilities. Both require guidance and support. But self-help housing is virtually unknown in informal settlements in Kenya: construction is almost always sub-contracted and involves a division of labour (Amis, 1984; 1988; Syagga and Malombe, 1995). As development in upgrading takes place both through the conventional method of physical works and also in a manner not common to urban management, it will be necessary to reorientate and train staff in public agencies. Policy and managerial "know-why" should be communicated to some of these (Korboe: 1992: 223). Also, at the professional and management level, attitudes should be altered to accommodate the role of sub-contracting and division of labour in house construction and physical development, the standards affordable by the community, and the social and political context of upgrading interventions which will entail modifications in planning and building control procedures. Greater initiative, flexibility, adaptability and risk-taking will require a change in the institutional environment of

planning and housing agencies, which can best be achieved through training programmes, workshops, seminars and other forms of exposure to new and innovative ideas and methods of working. Indeed, the objective should be to develop a pool of "inperfs", i.e. qualified nationals within the country (Abrams, 1964:104) to overcome the prevalent ineptitude in dealing with urbanization, urban housing and informal settlements.

Unlike in conventional low cost housing schemes in which public agencies plan and implement a complete package with little or no effective local community participation, the process of development management in upgrading involves a partnership with the social and political organization of the previously autonomous settlement. The scope of this partnership may vary from consultation to diverse decision-making and management powers. Upgrading that is undertaken in any community without some participation in management will fail to exploit the organizational resources that are available (Pasteur, 1979). This holds true even in informal settlements in Kenya with a predominantly tenant population. The management implications are that the implementing agency must develop community structures, which are appropriate to both national and local environment, to which it must relate. As these structures must reach to the lowest level, it is unlikely that the existing governmental representative structures as they presently operate will be effectual. Hence, this thesis advocates that chiefs in urban areas should play a foremost role in upgrading in Kenya. Their administrative and leadership roles should be promoted, and they should be trained to perform functions of consultation, decision-making, and management, and generally to adapt to the new situation of partnership in settlement upgrading.

The fact that upgrading involves interventions in an existing settled area creates several interdependencies between the physical and social streams of activity. The management implications of this are close co-ordination between the various functions involved and prudent programming of work through techniques which accentuate the interdependencies. While co-ordination and programming are necessary in all kinds of projects, the requirements of upgrading are unconventional not so much in the scope of functions covered but in the intricacy of their interrelationship. It is thus recommended that the proposed project units within the local authorities co-ordinate closely with chiefs in their role in the implementation of upgrading projects in settlements within their jurisdiction.

The time dimension of upgrading is longer than that of conventional housing development which is completed both as to infrastructure and housing and handed over for occupation and maintenance. Development in informal settlements is a constant process, with new housing structures being built, existing structures being extended, and infrastructure components being installed progressively. Similarly, with upgrading interventions, there will be an initial period of intense development, but work will be prolonged at a lower level both on housing and probably additions to infrastructure or community facilities. This continual development process needs to

be closely monitored to preclude the occurrence of hazardous environmental conditions. A further issue arising over the extended time dimension in upgrading is that of maintenance: perhaps not inevitably but certainly desirably, community organizations should be involved in maintenance. This is discussed in more detail below.

These peculiarities of settlement upgrading warrant special attention. Upgrading policies will either be distorted or ineffectual if they are left to conventional approaches to project management or urban service management. But, as Pasteur (1979) underlines, this special attention must not detract from the general need to reorientate and improve conventional methods of urban management, and special arrangements for settlement upgrading must be accommodated in the organizational environment.

8.5.4 Affordability-Cost Recovery-Replicability

The present thesis holds that the World Bank's basic package of ideology, reform and user-pays economics, embodied in the 'affordability-cost recovery-replicability' theory and practice of housing which is interpretable as a relatively simple political economy—'neoliberalism', can and, indeed, should be adapted to improve environmental upgrading of informal settlements in Kenya. The theory, which is discussed in Appendix A, will undoubtedly have to be modified in practice in a process of 'learning by doing', because, in its most simplistic version, the neoliberalist theory does not fit most of the realities of urbanization and housing in Kenya, especially in so far as environmental upgrading of informal settlements is concerned. In this respect, some suggestions are made regarding the affordability-cost recovery-replicability set of mutually reinforcing principles, which were also examined in Chapter 4.3.1.

8.5.4.1 Affordability

Consistent with World Bank thinking, the primary intention of the Government should be to make housing more affordable to the low-income groups without the payment of subsidies. In operational terms affordability means that the cost of housing should be reduced until it is within the reach of the target population. Inferentially, standards for infrastructure and housing should be set within the affordability limits of renter households in informal settlements (Choguill, 1993; Cohen, 1988; Pugh, 1990; 1992). Hence, the focus should be on *in situ* environmental improvement of informal settlements which presently provide rental accommodation for the urban poor majority in Kenya. That being so, inappropriate land regulations, zoning and building controls, infrastructure and housing standards, and other impediments to settlement upgrading which will improve the housing conditions of the low-income majority should be removed. Also, construction of housing should be left largely as the responsibility of private (informal) developers and individuals, not the public agencies.

8.5.4.2 Cost Recovery

In line with the World Bank's original conception, cost recovery should be seen as a necessity in the face of the hard realities and dilemmas facing the Government in providing affordable housing for the low-income majority in urban areas, and a means of achieving positive results. Cost recovery has several mutually reinforcing purposes which are valid in the context of upgrading in Kenya: it ensures financial controllability of projects, minimizing demands on government resources; it ensures, in principle, the availability of housing capital, enabling a replication of projects; and without the operation of a 'user-pays principle', improved infrastructure provision and housing in informal settlements may induce rural-urban migration and a self-perpetuating expansion of subsidies, ultimately resulting in the financial and managerial collapse of upgrading programmes (World Bank, 1994).

Contrary to the popular notion that fully recovering costs afflicts the poor, full cost recovery in the delivery of infrastructure services may actually benefit them. Residents of informal settlements frequently pay much higher prices for infrastructure services, in particular water, because they are not connected to public service networks that have lower costs, and because they do not gain from subsidies to users of the public system—typically the better-off. Hence, expansion of access will provide them with less costly services. With this understanding, full cost recovery in settlement upgrading is recommended. This will necessitate care in planning and implementation, the participation of prospective beneficiaries (i.e., both owners and tenants), and an effective collection system. On the basis of evidence of impressive cost recovery performance in El Salvador (Bamberger and Deneke, 1984), special attention should be paid to the following factors: a prudent selection of settlements to be upgraded and identification of property owners; an efficient record-keeping, billing and collection system; the active involvement of owners in the collection process; and the threat of eviction for defaulters. As suggested by Korboe (1992), the actual level and cost recovery arrangements and mechanisms should, to the extent possible, be pre-determined through guided dialogue in a consultative forum. Ways in which effectual cost recovery can be achieved are discussed in more detail below.

8.5.4.3 Replicability

Replicability brings affordability and cost recovery into a full cycle of interdependent consistency: if all costs are recovered because they are affordable, it will be possible to replicate projects (Pugh, 1992). The implication here is that the successful implementation of upgrading projects should facilitate the undertaking of similar interventions in other settlements.

The World Bank's experience suggests that broader replication of successful settlement upgrading will require more than a larger scale repetition of that which has been done in the past if such projects are to meet future effective demand for housing (Cohen, 1983; 1988). Such

being the case, new ways of addressing institutional capacity, public sector finance, and trained manpower must be sought. The public sector should assist in creating tools which will facilitate environmental upgrading through the installation of basic infrastructure leading to better living conditions in informal settlements, and overall improvement of the urban low-income housing stock. Forms which these tools may take include organization, finance, technology, materials and information, some of which are discussed in more detail below. Most importantly, public institutions should become agents that enable rather than frustrate the contribution of settlement upgrading to urban housing delivery. Through replicability of upgrading projects, housing supply and stock accumulation will better meet prevailing socioeconomic realities.

8.5.5 Tenure

Title and security of tenure are enshrined in most housing policies for the urban poor. Legalization and security of tenure is commonly deemed to be the cardinal element in upgrading, and a prerequisite for the provision of services. Indeed, land tenure was, and indeed still is, regarded by many as a *sine qua non* of successful upgrading and essential to housing improvement.. The Government of Kenya, as we saw in Chapter 4.3.3, is among this number. But, others (Varley, 1987) hold that it cannot be claimed that tenure legalization is an essential requirement for housing improvements and settlement consolidation. In Chapter 3.8.2, it was observed that the dynamics of the commercialization of low-income housing in informal settlements in Kenya has resulted in the pervasive phenomenon of rental accommodation and (absentee) landlordism in informal settlements, making the matter of tenure of peculiar import to upgrading in the Kenyan context.

There are two main options as far as legal status applicable to informal settlements is concerned: (i) issue full legal titles, or (ii) provide some form of regularization which gives security of tenure without the right to sell on the open formal market. The major advantage of the latter, as Payne (1989) affirms, is its flexibility. The degree of legal status can be adjusted from a simple statement that a settlement will not be demolished, to one granting households formal use rights for a stipulated or indeterminate period according to circumstances.

There is no clear consensus on the impact of legal status in facilitating housing improvement in informal settlements. But the literature suggests that tenure security is fundamentally subjective, and that perceived or *de facto* security of tenure is more critical in releasing investment for housing improvement than *de jure* status as such (Angel, 1983b; Payne, 1989). This is the view of the present thesis; it is supported by the experience of Angel and others (1983b:532) which is pertinent to the Kenyan context:

[Settlement] improvement projects reached larger numbers of poor people, but in the majority of cases infrastructure services were improved without any significant change in land tenure security. Environmental improvements were carried out independently of tenure changes... In the few cases where popular

settlements were located on public land, attempts to improve land tenure conditions encountered serious difficulties.

The conventional paradigm of upgrading presupposes owner-occupation, whereby issuance of title will facilitate access to formal credit by householders, thereby enabling them to improve their housing conditions. But granting legal tenure in the Kenyan situation has very different implications. For one, in the context of major shortages of accommodation, landlords can undoubtedly profit at the expense of poorer renter households by imposing rent levels which are unaffordable by the latter. This will compel them to vacate their accommodation, and permit the landlords to command even higher rent from alternative tenants.

The colonial practice of giving the indigenous population land occupancy certificates for urban land rather than title deeds has been denounced by Mabogunje (1990, cited in Gatabaki-Kamau, 1995) who holds that denying Africans freehold rights to land prevented them from gaining access to an economic asset that can be mortgaged to mobilize credit resources from the capital market. But, in point of fact, the original allottees of plots in *majengos* in Kenya were issued with temporary occupancy licences by the colonial authorities. With such rights, the allottees not only built their initial houses, but the overwhelming majority and/or their inheritors went on to extend their houses, building additional rooms to rent out regardless of the evident insecurity of tenure and the constant threat of demolition.

The present thesis holds that formal issuance of title is not necessary in most cases, or even advisable, in informal settlements in Kenya. Problems of issuance of tenure in Kenya are notorious: the bureaucratic procedures are cumbersome, protracted and time-consuming; the slow pace and complexity of land registration utterly frustrating. Simpler tenure arrangements can effectively increase tenure security yet give ample opportunity to improve registration of more specific rights in future, as Angel (1983) affirms. The issuance of temporary occupancy licences (ToLs) in all informal settlements is thus advocated as the most expedient approach to overcoming the prevailing constraints in acquiring legal title to land. As any form of *de facto* tenure which provides a sense of security is generally sufficient, especially if supported by the phased installation of infrastructure, such an approach can facilitate rapid improvement of informal settlements at minimum cost. It can also serve as a means of achieving acceptable site and plot layouts by making these a precondition.

Moreover, experience in Swahili Village has evinced that possession of a title deed to property in an informal settlement is not sufficient to secure credit from formal financial institutions. The active promotion of financial institutions that recognize ToLs and award credit on the basis of the length of the lease to owners of property in informal settlements could conceivably circumvent this predicament.

8.5.5.1 Transparency in the Allocation of Secure Tenure

A fundamental issue that has considerable implication for settlement upgrading in Kenya relates to how ownership of land and property in informal settlements is secured. In many cases, the allocation of informal rather than legal rights—which amount to protection from demolition—is controlled by the local administration (see Chapter 3.8.2). Since the legality of this allocation process is at best debatable, political patronage within the public administration and wider political system was and, most probably still is, important in providing protection (Amis, 1984).

The most radical and critical proposal made by Tipple (1984), which is central to his proposed strategy aimed at rapidly increasing urban housing supply in Kumasi without imposing processes alien to local culture, is reinforcing the organization of land acquisition through chiefs. Because of their importance in the city, he advocates that chiefs be confirmed in their current role and given an executive role in the land acquisition process—including formulating policy on the process of increasing land density; and selecting a preferred level of land take and location of land to be used.

The involvement of chiefs in the process of regularization of tenure in informal settlements in Kenya is similarly recommended, on account of their position in the public administration hierarchy. Despite being part of the public administration, they can potentially play a significant role in making the land allocation process more transparent. Chiefs are at the 'grass-roots' end of the administrative order and, hence, closest to the communities within their jurisdiction; moreover, many have ties with the community which transcend their official role. They are thus more likely to have the interests of the community at heart, and less liable to use their position for personal gain. This being the case, their assistance in identifying owners in settlements, which is not only of vital importance in the design of upgrading projects but also essential for successful cost recovery, could be invaluable. In this regard, chiefs should be sensitized to political and social factors, in addition to receiving instruction to improve their skills in community organization which they can employ if their potentiality in also assisting other aspects of upgrading, as recommended below, is to be realized.

8.5.6 Planning and Development Controls

The new conventional wisdom with regard to urban management in the South holds that planning and development controls should guide the development of urban areas, but provide sufficient flexibility to not interfere significantly with supply of housing and infrastructure, or deter low-cost solutions to problems. If not, the poor will suffer disproportionately through either supply-side induced inflation in land or housing cost, or an inappropriately built environment to meet their needs (Webster, 1994).

Planning in Kenya is, at present, almost exclusively concerned with regulations and limitations; it is unnecessarily complicated, and unrelated to the needs and programmes of the public agencies, the private sector or the informal sector. Moreover, it generally does not serve the interests of the low-income majority in urban areas. If it is to redress these flaws, planning must be "decentralised, participatory, responsive, accountable, realistic and imaginative" (Tipple, 1996:371). Hence, traditional planning approaches which exclude informal settlements need to be replaced by apposite urban planning and management approaches. No legal framework or regulatory and control mechanisms designed explicitly for the planning and physical development of informal settlements currently exist in Kenya (see Chapter 2.7). It is vital that a comprehensive framework with appropriate, pragmatic and consistent standards be formulated to regulate and control the development of informal settlements and facilitate physical and environmental upgrading.

8.5.7 Regulatory Instruments

The inventory of prevailing legislation and regulations for planning, building and infrastructural services control in Kenya is extensive (see Appendix B). Much of it, though, as we saw in Chapter 2.7.1, was originally designed to maintain housing standards for a European settler minority. But, standards are relative and cannot have general applicability or be indiscriminately transferred from one environment to another where they may be economically and socio-culturally irrelevant (Turner, 1980b). The operative standards are thus mostly inappropriate to both the encumbered local authorities and the socio-economic status and needs of the indigenous urban population—especially the low-income majority in informal settlements. For housing and infrastructure development to be realized, anachronistic planning systems which are incongruous with the nation's prevailing development needs must be circumvented—standards ought to be based on the local realities of the low-income majority.

8.5.7.1 Appropriate Standards for Infrastructure and Housing

The exigency of instituting a regulatory framework appropriate to the local context has been reiterated persistently; and, indeed, there have been various undertakings (mentioned in Chapter 2.8.2) towards this end. The last significant initiative was "Code '92", the popular name given to the revised by-laws—which are performance-oriented rather than material specific (Shelter Forum Bulletin, 1993a). But the "standards stalemate" has not been adequately resolved; it persists largely because of the mutually reinforcing behaviours of the interacting participants in "the unintentional conspiracy" (Gakenheimer and Brando, 1987:135), mentioned in Chapter 4.3.3.1. If the standards impasse is to be counteracted, the various parties should be given to understand their role in the conspiracy.

The establishment of appropriate standards is, thus, partly a technical issue, to be addressed by technical expertise, and partly a political issue, encompassing the diverse pressures applied to the

definition of standards—by the policy makers, chiefly seeking lower standards in relation to the resource base, and by the users, mostly aspiring for higher standards with regard to their general well-being (Gray and Richardson, 1985). A compromise between the two should be sought through an iterative process.

While the "Code '92" initiative is unequivocally a positive development, further revision of the regulatory framework governing the development of urban housing and infrastructure is still required. The 1997-2001 Development Plan (RoK, 1997) affirms that a review of by-laws, building codes, regulations and procedures aimed at eliminating those that do not conform to private sector-led growth will be carried out by 1998, but how soon this will be effected remains to be seen. If past experience is anything to go by, it is likely to be a protracted exercise. Hence, there is still urgent need for more appropriate standards consonant with local conditions; affordable to users; and acceptable in technical terms (i.e., maintainable). Of utmost priority should be the reformulation of legislation relating to housing and infrastructure development in informal settlements, which should take into consideration readily available local building materials, construction skills and techniques, and environmental factors, while not neglecting socioeconomic profiles and cultural values. In this respect, the introduction of innovative planning and building standards which meet the following criteria is advocated:

- They should be oriented towards and facilitate the maximum and most economical utilization of local, readily available building materials and resources, and promote the use of traditional skills and techniques.
- They should be flexible enough to facilitate adaptation or amendment to accommodate innovative building materials and construction techniques, and other appropriate technologies.
- They should be easily enforceable; the vocabulary used should be easily comprehensible, concise and unambiguous.
- They should be amenable and adaptable, and accommodate local traditions, customs, values and practices.

Being more conversant with the development and local realities of informal settlements within their respective jurisdictions than central government agencies, local authorities should play a leading role in the reformulation of legislation and standards. The relevant personnel in local authorities should also be informed about alternative and innovative building materials and techniques, and other appropriate technologies. Training towards this end is thus recommended.

8.5.7.2 Community Involvement in Formulation of Standards

Although standards play a critical role in the daily life of the urban poor majority, they do not participate in their formulation and implementation. Regard must be given to effective demand—what people are prepared to pay for housing or other services; standards beyond the

ability or willingness of people to pay will prove ineffective (Gray and Richardson, 1985). Certainly, advantage should not be taken of "people's need for shelter in its economic aspects to force them, via enforcement of standards, to pay for more welfare than they want" (Peattie, 1987:276).

What is required therefore, is a participatory bottom-up institutional framework that will facilitate consultation with households in informal settlements to ascertain their socio-economic profile, needs, preferences, priorities, resources and cultural values, and ensure that these are addressed. This will enable the formulation of apposite indices for measuring 'adequate housing': a consensus based on mutual opinion is vital. Communication between the decision-makers and the users should be encouraged so the latter can better formulate regulatory and control mechanisms for informal settlements. There should also be provision for the granting of waivers and making exceptions to the standards which can be invoked where deemed appropriate.

8.5.7.3 Application of Research Findings

Research and development are of particular consequence in the formulation of appropriate standards for infrastructure and housing in informal settlements. HABRI has conducted pertinent research on minimum building and space standards, innovative building materials and appropriate housing technologies; and some of the findings have been applied and significantly reduced the cost of houses designed for low-income households. Parallel research and development work has also been conducted by other research institutions and various NGOs. The findings, innovations and recommendations of such endeavours should be given due consideration in the formulation of revised standards for informal settlements. Apart from the need for appropriate technical performance standards, there are often problems related with physically inefficient designs, especially regarding the more capital intensive components such as water supply, sewerage and access roads, as Chana (1984) points out. These also should be addressed.

Having said this, it is important to remember that the reformulation of standards and the legitimization of what is presently deemed to be "sub-standard" housing should not mean the perpetuation of poor housing conditions for the urban poor. They too would like to see an improvement in the quality of housing and the environment in which they live.

8.5.8 Infrastructure and Services

Provision of infrastructure is one of the areas in which government policy and finance have a paramount role to play because of its pervasive impact on both economic development and human welfare. The Government's recognition of the cardinal importance of infrastructure is demonstrated by the heavy investment that it has made in its provision since independence. But while the past growth of urban infrastructure in Kenya has, in some respects, been noteworthy,

the claim that "most of the infrastructural facilities that are necessary for the attainment of an economic 'take-off' are in place" (RoK, 1997:96) can only be regarded as hyperbole. Current estimates indicate that 75% of the urban population have access to potable water; only 30% of the 142 gazetted urban areas have sewerage systems. The situation with respect to infrastructure provision is considerably worse in informal settlements, as is apparent from the overview presented in Chapter 3.8 and the review of studies of informal settlements in Chapter 3.9.

The 1997-2001 Plan (RoK, 1997) does, however, acknowledge that, despite the expansion of the infrastructure base, the deteriorating quality of the existing stock poses a major challenge to the Government. Factors that have constrained further infrastructural development and adequate maintenance of existing infrastructure include the growing demand for infrastructural services arising from rapid urbanization and population growth, and inadequate administrative and technical capacity of public agencies to plan, finance and execute expanded service delivery programmes (RoK, 1997). Poor performance of infrastructure is also attributable to the following causes: those responsible for infrastructure delivery lack the requisite financial and managerial autonomy to operate effectively; delivery of infrastructure has taken place in a market structure characterized by the absence of competition; and the users of infrastructure—both actual and potential—have been unable to make their demands felt (World Bank, 1994). These issues all need to be addressed urgently. However, traditional modes of infrastructure provision are unlikely to meet the ever-increasing demand for services. Moreover, conventional approaches to infrastructure provision are too costly, unsustainable and unreplicable on the scale required and do not reflect the needs and priorities of the low-income majority (Cotton and Franceys, 1994). What is required are innovative policies for implementation, management and utilization of more appropriate technologies in infrastructure provision. In this respect, the following measures advocated by the World Bank (1994) should be taken:

- (i) innovation in technology and regulatory management;
- (ii) wider application of commercial principles to service providers;
- (iii) broader use of competition;
- (iv) increased involvement of users where commercial and competitive behaviour is constrained.

8.5.8.1 Privatization

History has demonstrated that, under normal circumstances, political pressures do not motivate the public sector to provide low-income communities with adequate environmental infrastructure. Similarly, commercial pressures do not motivate the private sector to provide environmental infrastructure in low-income neighbourhoods (McGranahan *et al.*, 1996). Real improvements are thus unlikely to be realized by simply interchanging responsibilities between public and private sectors. The ultimate usefulness of privatization policies in service delivery must be measured against better and more affordable services to the population, and especially

the poor (UNCHS, 1993b). Still, experimentation with the privatization of water delivery, excreta removal and solid waste disposal has demonstrated efficiency gains (UNCHS/ILO, 1995). The successful operation of privately-owned utility companies, even in low-income areas (Turner, 1976), proves their potential profitability. But, as Gilbert (1992b:436) notes, "[however] justified the case for privatization, the ability of private enterprise to supply services will be undermined by the ability of most customers to pay".

Consequently, infrastructure should be conceived and operated as a service industry that responds to customer demand, not like a bureaucracy. An alternative demand-led approach, which harnesses the multiform resources which communities and households possess and which reduces the overall costs of infrastructure, is required: "infrastructure provision needs to respond to the demand for services while at the same time minimizing the public health risks of living in unserviced informal settlements" (Cotton and Franceys, 1994:19).

The privatization effort should aim to attract several small-scale concerns rather than replacing public agencies with a sole private monopoly. This will not only encourage competition—and give consumers options to better meet their demands and likewise pressure suppliers to be more efficient and accountable—but also, as Korboe (1992) points out, impose some limited checks on exploitative commercialism.

8.5.8.2. Progressive Infrastructural Improvement

Urban infrastructure, especially water, sanitation, drainage and solid-waste management, is essential to the improvement of the urban environment; the provision of potable water and adequate sanitation in low-income neighbourhoods especially is fundamental to meeting the basic needs of the population. Conventional approaches to infrastructure provision based on service levels provided in the North are not only prohibitive in cost, but also not sustainable for many low-income communities. Since the 1960s, programmes which involve the progressive improvement of on-site facilities have been increasingly accepted as the most efficient way of meeting housing needs in low-income situations. Indeed, with the shift of priorities of the major multilateral and bilateral agencies in this field, it is imperative that methods to achieve progressive infrastructural improvement are developed and implemented (Choguill, 1996; Choguill *et al*, 1993).

The case for progressive improvement of infrastructure has been advanced by several writers (Choguill, 1996; Choguill *et al.*, 1993; 1994; Cotton and Franceys, 1991; 1994; Pugh, 1994). In this regard, Choguill, Cotton and Franceys argue that, because many inhabitants of informal settlements live in environments that lack even basic infrastructure (which corresponds to a 'zero baseline' service level), any improvement in service is likely to result in some benefit to the inhabitants. Hence, Choguill, Cotton and Franceys suggest a model for infrastructural

development which involves the improvement of infrastructure from a primary level of provision to intermediate and eventually to ultimate level. Within each of the infrastructure sectors—water, sanitation, drainage, solid waste management, access and roads—there are various technology options. Primary level of service—defined as "that which produces the first and lowest stage of improvement above the zero baseline of physical infrastructure to satisfy basic needs in each sector" (Cotton and Franceys, 1991:6)—is considered an appropriate first stage in settlement upgrading. It is regarded as a starting point in the realization of objectives which are commensurate with the standard of housing. Intermediate level is taken to include the improvement of such facilities to a still higher standard through community effort, but with technical advice from some facilitator agency. The ultimate level is what is generally thought of as conventional infrastructure. The different levels of service have different costs and different benefits.

8.5.8.2.1 Appropriate Level of Initial Service Provision

This thesis most definitely recommends progressive infrastructural improvement as the most viable approach to provision of adequate environmental infrastructure in informal settlements. However, the research shows that the appropriate primary level services would be much higher than those proposed by Cotton and Franceys (1991; 1994). They suggest that basic services like open earth storm drains, and profiled and compacted earth roads would be appropriate: these were provided in the World Bank-funded upgrading project implemented in Bondeni (see Chapters 6 and 7). But, while it can be argued that they satisfied basic needs in the respective sectors, they have also had significant adverse impacts on environmental conditions in the settlement. The open drains have become a breeding ground for mosquitoes because water stagnates and accumulates in them. Moreover, because of inadequate provision for on-plot disposal of sullage, households discharge their domestic waste water into the drains along with their solid waste which also causes a serious problem of smell. The heavy pedestrian traffic using the roads provided within the settlement generate generates a lot of dust, which is especially disadvantageous for informal sector activities located on the roadside. The sanitation system installed on each plot—a cubicle housing a single water-borne toilet, shower and tap—was also grossly inadequate and inappropriate for the multiple households accommodated in the many rooms in each house. The lesson to be learned from this experience is that provision of primary level infrastructure in some situations may have more costs than benefits: the level of initial infrastructure provision, while allowing for incremental pre-planned improvements, should be strictly judicious. It is important, therefore, that situations are recognized in which provision of primary level infrastructure, as proposed by Cotton and Franceys (1991; 1994), may not only be inadequate but also inappropriate. The actual level of provision of infrastructure and cost recovery arrangements in settlement upgrading should also be pre-determined through guided dialogue in a consultative forum to the extent possible.

The following strategic options for improving infrastructure and service delivery should also be the object of immediate attention:⁷

- (i) determine priorities with the target group and concentrate technical staff on priority areas; it is better to focus in the short term on priority problem areas rather than to try and address all issues;
- (ii) identify potential contributions and co-ordinate the efforts of the public, private (both formal and informal), community and NGO sectors in infrastructure delivery, improvement, operation and maintenance (giving priority to maintenance of existing infrastructure);
- (iii) promote the informal provision of various infrastructure services (e.g., waste collection and recycling);
- (iv) review and optimize technology options for innovative infrastructure delivery and promote low-cost, energy-effective solutions;
- (v) localize infrastructure improvement and service provision, by encouraging communities to turn from users to producers of environmental infrastructure (e.g., self-help development schemes, community contracts, etc.);

8.5.8.3 Infrastructure and Sustainability

The development of an adequate infrastructural base is a prerequisite to the realization of urban sustainability (Choguill and Choguill, 1996). Well-designed and -managed infrastructure can promote the environmental sustainability of human settlements—the 'brown agenda'. Infrastructure services that help the urban poor also contribute to environmental sustainability. The urban poor majority stand to benefit most directly from improved infrastructure because they are concentrated in informal settlements subject to unsanitary conditions, hazardous emissions, and accident risks (World Bank, 1994). In order to ensure the sustainable development of infrastructure, therefore, the Government has placed emphasis on increasing the quality and efficiency of existing infrastructural facilities. Development of new facilities in this sector will be limited to projects that fill critical supply deficiencies, those that remove development constraints in specific sectors, or those comprising modernization, rehabilitation or upgrading. The provision of new infrastructure will be undertaken on a cost recovery basis (RoK, 1997). This proposed line of action is wholly supported by the present thesis, and should be treated as a matter of utmost priority.

However economic, technological, or environmental the problem of infrastructural provision might be, it is a highly political issue and definitely a matter of priority for both physical

⁷These options are mentioned in the Report of the Executive Director, United Nations Commission on Human Settlements: "Improvement of municipal management", *Habitat International*, 17(1), pp. 3-31.

planning and environmental design—a fact which is commonly ignored in most urban planning and physical design educational programmes all over the world.

Therefore, in line with Psomopoulos' (1993) suggestions, this anomaly should be rectified by:

- more attention being paid to the political economy of provision of environmental infrastructure;
- the introduction of curricula in which physical planning and environmental design concerns related to environmental infrastructure are comprehensively addressed;
- increased research and dissemination of research findings

In sum, traditional modes of infrastructure provision for the urban poor are unlikely to meet the ever-increasing demand for services. New policies for implementation, management and utilization of more appropriate technologies are thus required. As Ridgley (1993) affirms, by expanding the range of technological alternatives normally considered, the resources necessary for infrastructure provision can be increased and made more effective.

8.5.8.4 Targeted Subsidies

The urban poor typically use fewer infrastructure services than the nonpoor, but not only because of low incomes—they also have very low access. The analysis of availability of on-plot services in Swahili Village and Bondeni (Chapter 7.2) underscores this truism. Many countries have introduced subsidies through low tariffs aimed at improving the poor's access to infrastructure services, but most of these subsidies have been captured by middle- and high-income households (World Bank, 1994). Targeted subsidies are suggested because it is realized that low-income households may often not be able to afford even the lowest quality public services that can be devised (Choguill, 1996). The poverty alleviation strategy formulated by the World Bank in 1990 unequivocally accepted the role of subsidies but judiciously prescribed the form they should take (Gilbert, 1997):

- (i) they should be circumspectly targeted at those falling into poverty, i.e., they should be a social safety net to protect vulnerable households;
- (ii) they should preferably be "one-time capital grants or housing allowances that have a finite duration or built-in review procedure" (World Bank, 1993a:126).

But targeting the poorest groups is not easy, especially as, whenever goods in shortage are rationed in some manner, those with power and affluence tend to displace the target group. Although income groups cannot be circumscribed and other groups be prohibited from occupying a particular form of housing or neighbourhood, it is evident that residents of informal settlements are, for the most part, worse off than those in formal residential areas. The only certain way of reaching most people with better housing and services is to have efficiently operating markets.

Even then, it is conceivable that the lowest income group will benefit less than any other as the minimum cost of even basically serviced accommodation may be beyond their means. But it has been found in the past that subsidies targeted to people are a more effective way of targeting the poor than interventions in the price of the goods (in this case housing which they consume). Under the UMP, some interventions in the form of well-targeted subsidies and services will be included to aid the very poor and enhance their opportunities for improvement (UNCHS/ILO, 1995).

In line with World Bank (1993a) recommendations, the Government should review subsidies in the housing sector with a view to reducing the overall level of subsidies to a level consistent with fiscal resources, eliminating inefficient subsidies, and targeting subsidies to deserving low-income beneficiaries. Hence, practical ways of excluding ineligible households should be devised. Priority should be given to subsidies such as tenure regularization programmes that are inherently targeted to large numbers of low-income people, and to programmes that provide infrastructure or one-time construction grants in informal settlements where the low-income majority live. The World Bank (1994) affirms that subsidizing access to public infrastructure is often more useful for the poor than price subsidies. Subsidy programmes that target low-income households in informal settlements should be transparent, and be the most cost-effective way of achieving the desired goal—improved housing conditions in informal settlements as the result of environmental upgrading.

8.5.9 Building Materials and Technology

Largely due to the building materials and techniques utilized, housing construction in the plurality of informal settlements in Kenya is characterized by economy of construction and profitability. The investment return is very lucrative indeed, despite relatively modest rentals, a factor which has contributed significantly to the commercialization of informal settlements, elaborated in Chapter 3.8.2. As it involves local materials and local, low-wage labour, it also has potential for high income multipliers (UNCHS/ILO, 1995). Not unexpectedly, there are significant differences in terms of quality between housing structures constructed of different materials (as the analysis in Chapter 6.3.4 shows).

8.5.9.1 Operational Strategy for the Promotion of Local and Innovative Building-Materials Technologies

Within the overall objective of the operational strategy of the GSS, i.e., to facilitate the achievement of adequate shelter for all by the year 2000, the Government should likewise aim: "to facilitate the required supply of affordable building materials with minimum disruption to the global and local environment, respecting the need for acceptable standards of health and safety" (UNCHS, 1993c:15). The utilization of improved lower-cost indigenous alternatives and innovative building-materials technologies is fundamental to achieving this objective. To

realistically promote such technologies, the Government should draw on UNCHS (Habitat) experience (UNCHS, 1994c), and:

- (a) consider building materials and technologies as a component of the national shelter strategy;
- (b) not only promote technological upgrading of local building materials, but also instigate institutional, financial and fiscal measures at the national level;
- (c) recognize artisans and small constructors as key actors who decide on the use of materials and technologies and that they should, hence, be both a target and a partner in housing and building materials policy.

Overcoming impediments to the acceptance of improved traditional or innovative building materials and the promotion of their production by small-scale enterprises, will require an integrated housing and building development programme.

Lack of requisite knowledge or techniques in the utilization of appropriate low-cost building materials in construction is an important factor in limiting the wide-scale adoption in settlement upgrading. This and other constraints can be largely resolved by the proposed informal settlements development authority working in partnership with other interest groups in informal settlements. The agency should be equipped to control the quality of improved indigenous and innovative building-materials, to effect their use within upgrading projects, to provide the relevant training for artisans and small-scale contractors, and to develop standards for the materials and facilitate the adaptation of building codes that permit the use of these technologies in upgrading programmes.

8.5.9.2 Standards for Non-Conventional Building Materials and Technologies

The absence of appropriate standards for non-conventional materials has been a major impediment to their widespread adoption by the housing market. It has also inhibited their utilization in many public housing projects, which remain biased towards import-intensive, costlier building materials. Building materials specifications and construction standards are necessary and beneficial, but only to the extent that they are affordable by the people they are meant to serve (Jorgensen, 1977). Sessional Paper No. 1 of 1986 (RoK, 1986b) affirms that building codes will be revised to promote the use of materials that can be supplied locally by small firms and to expand the activities of informal sector builders, especially those of low-cost housing. Although various initiatives have been taken, as mentioned in Chapter 2.7.2, much still remains to be done. The focus should be on performance-oriented by-laws rather than material specific standards which will allow informal developers more latitude in their efforts to provide affordable housing. Greater relativity and flexibility, to take into account contextual, cultural and other considerations, should be exercised. Hence, this thesis, like John Turner (1976), recommends that performance standards should set limits within which people and local

enterprises *may* do very much as they choose, rather than set down specifications for what they *must* follow (p.110, italics Turner's). In other words, standards should be informed by *pro*-scriptive legislation ('thou shalt nots') rather than *pre*-scriptive laws ('thou shalts') as only the former can ensure the necessary equifinality (Burgess, 1977:54).

8.5.9.3 Promotion of Local and Innovative Building-Materials Technologies

The permanence of the traditional building materials and technology used to construct houses in Swahili Village and Bondeni cannot be doubted. The analysis of the quality of the houses in the two *majengos* (Chapter 6.3.4) reveals that, despite a minimum of maintenance, virtually all the dwelling structures are still habitable and, indeed, are occupied by households that are for the most part satisfied with their accommodation. This clearly supports the case for the use of "grass-roots technologies—small in scale, indigenous, and using locally sustainable means of production" (Hamdi, 1991:25) in informal settlements. Indeed, with modification, improvement, innovation and the application of modern research knowledge, old indigenous materials can become new indigenous materials (Murison, 1979). Hence the use of indigenous and innovative building materials and technologies appropriate to national resources, which make minimum demands on scarce foreign exchange, should be actively promoted. This will expand both housing production for affordable capital outlay and employment therein.

Use of alternative materials should not be limited to construction of dwellings only. A wide range of low-cost, efficient building elements and infrastructure components such as doors, rafters, water tanks and toilet units have been developed locally. These are increasingly proving to be cost-effective with the escalating prices of conventional components; hence their use in settlement upgrading should be actively promoted.

8.5.10 Maintenance

Maintenance is a major issue in any development project, especially when the project is designed to deliver a long-term investment, such as infrastructure (Choguill, 1996). Inadequate maintenance has been an almost universal (and costly) failure of urban infrastructure providers in the South (UNCHS, 1996; World Bank, 1994). Inadequate maintenance leads to operating inefficiencies, and imposes substantial recurrent and capital costs. Neglect of (relatively inexpensive) routine maintenance can compound problems so much that entire infrastructure components have to be replaced. It is important to appreciate that high levels of infrastructure provision incur high recurrent costs for operation and maintenance which are likely to be beyond the means of the majority of local authorities and householders. The consequence of inadequate maintenance is that the costly infrastructure rapidly falls into disrepair and disuse (Cotton and Franceys, 1994).

8.5.10.1 Planned Maintenance Approach to Infrastructure Provision

If infrastructure installed in upgrading projects is to have a real impact on improving environmental conditions in the settlements, provision must be made for adequate and continued maintenance. A sound maintenance policy is of vital importance to the long-term improvement of environmental conditions and sustainability. Chapter Seven reveals that poor maintenance of the infrastructure installed in the upgrading project in Bondeni under the auspices of the Third Urban Project, has led to a deterioration of the environment in that settlement. To meet the rising demand and cope with the limited resources available to meet it, the development of a planned maintenance strategy should involve a shift from emergency operations to a more systematic planned approach. The planned maintenance approach should have as an underlying principle, the maximization of preventive maintenance programmes and a minimization of response or corrective maintenance to emergency and urgent repairs only (Brennan, 1989).

To preclude problems of operation and maintenance originating in the initial design or construction of infrastructure, and/or investments in upgrading which were economically nonviable being implemented, feasibility studies to determine the viability of projects should be conducted prior to any interventions. This will also help avoid inappropriate design standards that increase the requirements for skills in limited supply or are heavily dependent on imported spare parts requiring foreign exchange which can compound problems of maintenance.

The management and maintenance of dwellings and their surroundings, and their longevity, are primarily dependent upon the care of their residents and users. In this respect, both owners and tenants associations can play a vital role. Thus, vitally important, is: "raising awareness of the fact that management and maintenance are equally important or even more significant factors in housing design than the initial design, construction, and capital financing" (Turner, 1976:140).

Responsibilities for maintenance works should be well-defined within the planned maintenance programme. There should also be an explicit operational strategy for employing direct labour (of owner/tenants/groups) and small-scale contractors in the maintenance programme. A system of technical categorization which establishes a series of operational priorities to deal with response or corrective maintenance (e.g., shared/communal water points or water borne sanitation systems which are hazardous to health) should also be formulated.

Community participation should be employed to improve project performance and maintenance by directly involving the beneficiaries; seeking their early consensus on the project; and mobilizing cash or in-kind contributions from them, as the World Bank (1994) recommends. Participation in project formulation is particularly important for the maintenance of services and facilities. Tenants should be made aware that their involvement in maintenance is not a punitive transfer of responsibility (for repair costs) from owners to tenants (Brennan, 1989).

Legislation is commonly rather ineffective in persuading landlords to maintain and improve the conditions of their property (UNCHS, 1989c). The proposed conditionality clauses contained in the temporary occupancy licences (see section 8.5.5), duly enforced by chiefs, can overcome this problem. Regular publicity campaigns, aimed at encouraging routine maintenance and repairs and embarrassing bad landlords, as proposed by UNCHS (1989c), should also be conducted. Indeed, chiefs could do an first-rate job in this respect, as many can be quite vociferous!

8.5.11 Extensions

The expediency of expanding the existing housing stock through extensions, which are an intrinsically cheaper mode of supply and the most cost effective way to realize additional rental accommodation, has been underlined by several writers (Korboe, 1992; Peattie, 1987). The deliberate production of additional affordable accommodation existing in informal settlements has great potential for increasing the low-income urban housing stock. It can also greatly assist in reducing overcrowding at the dwelling unit level and its attendant ills, while helping to maintain fair rents for tenants, and this in a manner that is largely congruent with sustainable development (Tipple, 1996). But it is imperative that profit-motivated, indiscriminate "over-extension" be checked to preclude detrimental environmental consequences at the settlement level. Indeed, uncontrolled speculative development resulting in "unauthorized and/or unplanned 'microsupply' can generate costly conflicts with the 'macrodemand' of orderly development" (Turner, (1991:x).

8.5.11.1 Controlled Extensions

The existence of a strong market for rental accommodation in informal settlements is a great incentive for owners to extend their property. However, experience in Bondeni and other *majengos*, which originated as planned settlements, has clearly shown that uncontrolled extensions to provide additional rental accommodation can have an adverse impact on the environment. But, as Tipple (1996:375) affirms, in another context: "the balance of advantage is positive in their favour".

Issuance of ToLs to owners as proposed (see Chapter 8.5.5), with a conditional clause prohibiting unauthorized extension of existing houses, can circumvent uncontrolled extensions. Chiefs can also be deployed to check extensions in informal settlements. They can be far more effective than local authorities because their offices are frequently located either within, or in close proximity to, settlements. In addition to the assistants they have working under them, they also have administrative police (APs) attached to their offices who could be mobilized to monitor informal settlements within their jurisdiction. In many cases, chiefs would only have one settlement within their jurisdiction in contrast to local authorities, particularly in the larger urban centres, who would have to contend with more settlements. Owners/landlords associations could

also be of utility in checking indiscriminate expansion, as will be seen in a later section of this chapter.

8.5.12 Rent Control

The primary justification for rent control is the need to reconcile the interests of tenants and landlords (UN, 1979). Indeed, the principles guiding the Kenya's Rent Restriction Act, according to the Minister (cited in Patel, 1970), included ensuring that tenants are not exploited because of the urban housing deficit and safeguarding landlords against victimization.

Opinions about the merits and demerits of rent control vary sharply (Urban Edge, 1988). On the right of the political spectrum the consensus is that rent control has done more harm than good in rental housing markets—*let alone* the economy at large—because it "perpetuates shortages, encourages immobility, swamps consumer preferences, fosters deterioration, erodes production and incentives, and distorts land-use patterns" (UNCHS, 1989c:25). The political left, is of the opposite view. The current consensus largely favours decontrol, although most agree that existing controls should not be removed too abruptly. But there are also those who argue in favour of carefully designed forms of rent control (UNCHS, 1989c): this author is one of those.

8.5.12.1 Rent Control in Informal Settlements

That tenants constitute the overwhelming majority of residents in informal settlements in Kenya has been consistently underscored in the present thesis. Rent control in informal settlements, especially in those upgraded with public funds, is thus advocated to safeguard the interests of existing tenants. Hence, in accord with an Expert Group Meeting (UNCHS, 1990), this thesis recommends:

- A review of the administrative and judicial system related to rental housing, with particular reference to informal settlements, while maintaining a balance between the interests of both landlords and tenants;
- An examination of the impact of rent controls in the context of comprehensive housing strategies and settlement upgrading, and where rents are to be controlled, selecting the most appropriate methods to apply within available administrative capacities;
- The formulation of a simple, comprehensible and inexpensive system of arbitration between landlords and tenants involving chiefs;

A predominant argument against rent control is that it reduces dwelling maintenance, thereby accelerating deterioration and shortening the useful life of dwellings (Malpezzi, 1990b; Malpezzi *et al.*, 1990; UN, 1979). But, this thesis holds that clauses in the proposed temporary occupation licences obliging landlords to maintain property, and providing for termination of leases or confiscation of plots with deteriorated housing, would circumvent this problem.

8.5.12.2 Involvement of Chiefs in Rent Control and Arbitration

The need to either simplify and reduce the cost of court proceedings, or develop alternative methods of arbitrating between landlords and tenants, has long been recognized. It has been suggested that alternative forms of arbitration could include local authority tribunals and neighbourhood committees/councils (UN, 1979; UNCHS, 1989c).

Chiefs and their assistants in Kenya, perform a valuable administrative role. They have considerable powers, many of which date back to the colonial era, and are recognized and appreciated by certain sectors of society, in particular the lower income groups in both the rural and urban areas. In the rural areas, for example, permission has to be sought from the chief of one's location if one wishes to fell a tree. In urban areas, chiefs regularly settle domestic disputes amongst households living in informal settlements. It is recommended, therefore, chiefs be deployed to enforce rent controls and to arbitrate between landlord-tenant disputes, especially in the light of the zeal with which many of them carry out their duties!

This recommendation is supported by Patel's affirmation that both landlords and tenants prefer to report any dispute to the chief because "it is settled quickly, it is inexpensive, and the proceedings are informal" (Patel, 1972:253), even though the chief "has no legal authority, but has the political and social power, though he feels that he still has some form of authority" (Patel, 1972:254). Also, Amis (1990b) asserts that,

on reflection it almost looks administratively easier to enforce some system of "rent control" in the relatively homogenous [informal] settlements than in the heterogeneous, almost maze-like complexity of tenure arrangements in the low-income formal sector.

8.5.12.3 Landlords/Tenants Associations Role in Rent Control

Legislation will work best if it is seen to be fair to both landlords and tenants, and if it is widely understood. Tenants' ignorance of the provisions of the Rent Restriction Act was mentioned in Chapter 6.3.4.3. In this respect, in line with UNCHS (1989c) recommendations, landlord and tenant associations (discussed in more detail in Section 8.5.14) should be encouraged to disseminate information about prevailing laws and regulations to their members, and should also be encouraged to provide legal advice where necessary.

8.5.13 Community Participation

The discussion in Chapter 4.3.4.4 highlighted that community participation has progressively gained increasing prominence in development philosophy and, in most parts of the world today, is seen as a fundamental element of the community development process. But the question of whether community participation is as effectual as many would like to believe or whether only tokenism is achieved has been raised. It has been contended that not only do communities frequently have insufficient relevant knowledge, but they also lack the intellectual capacity to

distinguish between alternative strategies and hence to select those which optimize opportunities for the future (Zar, 1993).

Still, the present thesis holds that community participation can assist successful and sustainable environmental upgrading of informal settlements. While it may be possible (although not desirable) to acquire land and prepare a site-and-services layout without community participation, as affirmed by Turner (1980a), it is quite impossible to upgrade existing settlements successfully without the active co-operation of the residents. The best processes of community participation ensure that all involved have a stake in the outcome and that they therefore have some measure of control over it (Hamdi, 1991). Thus, it is imperative that both owners and tenants are involved at all stages in upgrading projects. This does not imply, however, that they should (or could) be involved in all aspects of the more-specialized work.

The majority of currently popular proposals for enhancing participation are false leads in the context of informal settlements in Kenya. Many simply perpetuate a political economic system in which programmes involving the urban poor are carried out as marginal exercises and experiments of limited impact (Douglass, 1992). There is, unquestionably, need for innovative approaches to public participation in settlement upgrading in Kenya. This is particularly so because the overwhelming majority of householders in informal settlements in Kenya are tenants. The undertaking in our case is, more appropriately, one of empowerment of both owners and tenants in informal settlements. Inferentially, in the vocabulary of Douglass (1992:25), "the key word is legitimization, without which households cannot sustain their collective voice in public affairs and the state can have no 'partners' in development". There are, of course, practical difficulties in generating a participatory system, especially when people are not used to being consulted, as may well be the case with both owner and tenant householders. There is a need, therefore, to focus on facilitating participation,

8.5.13.1 Involvement of Community-Based Organizations (CBOs) in Upgrading

As advocated by UNCHS/ILO (1995), and also in line with the recommendations of the GSS, Agenda 21 and the Habitat Agenda, community-based organizations (CBOs) should be formed to represent residents of informal settlements (both owner and tenant households); to act as legal entities representing the interests of their members in dialogue with the Government and NGOs and fighting for their rights; to negotiate for services, contracts, etc. with public authorities; and to organize residents to take collective action (raising and disbursing money on behalf of the settlement). Communities, represented by CBOs, should be actively involved in the implementation of upgrading projects because local authorities lack sufficient resources for all the tasks they are expected to fulfil. CBOs can be quite valuable in establishing priorities for action and in mediating between the public authorities and the community and among members of the community themselves. When they work well, the savings in public funds and time can be

substantial. (Doebele, 1987). There is thus need for capacity building and enabling communities to improve their living environments. CBOs should be strategically placed to undertake the implementation of policies affecting their neighbourhoods, to act as intermediaries between households and the local authority, and with finance agencies (in which role they can act as honest brokers, or as the corporate entity with which proceedings for distraint may be joined), and to encourage groupings of entrepreneurs or artisans who can negotiate for contracts or infrastructure provision and maintenance. Operational partnership arrangements between communities, CBOs, NGOs and local authorities should be established.

To improve project performance, it is recommended that the three keys identified by the World Bank to using participation should be espoused: the beneficiaries (both owners and tenants) should be directly involved; their early consensus on the project should be sought; and cash or in-kind contributions should be mobilized from them. Failure to do this can have dire consequences, as experience in Bondeni has demonstrated.

Inhabitants of informal settlements should be encouraged to form groups which can be engaged in the implementation of upgrading interventions and in sustaining healthful environmental conditions in settlements. Indeed, community participation is an end in itself: through community contracts, people can not only be involved in the planning and design of facilities in their own neighbourhoods, they can also participate in the implementation. Such involvement increases the community's responsibility for the state of repair and can also be deciding in ensuring adequate maintenance of these facilities, as well as the protection of (public) investments after construction is completed and extended economic life. Hence, community initiatives should be promoted in minor works in upgrading of informal settlements (Doebele, 1987; Lyby, 1992; UNCHS/ILO, 1995). Moreover, should the need arise, a larger proportion of the informal workforce would be registered for taxation purposes (Korboe, 1992). If such groups are registered, they can be awarded contracts to collect solid waste, clean drains, etc. by the local authority or landlords. In this manner, the local authority could generate additional income which could subsequently be used to further improve living conditions in the settlement.

Community participation is recommended by Angel *et al.* (1983) as a potentially important instrument in implementing tenure change. In many informal settlements in Kenya, particularly *majengos*, respected older residents and community leaders (mostly owners) can assist in identifying tenure rights and can mediate in tenure conflicts. Through them, the community can effectively participate in plot allocation and decisions regarding use of land in the settlements.

Participatory programmes can also provide a better way to collect, analyze, and interpret data (Hamdi, 1991). Feedback from upgrading projects that have been implemented is fundamental for improved strategy formulation and project design. Communication and exchange of

experiences and ideas among CBOs both within individual settlements and between different settlements should be actively encouraged as it can be invaluable in improving upgrading. Supralocal and introlocal connections are especially important because, when local groups are aware of or interested in others' experience, it is usually less accessible to them than it is to professionals (Turner, 1991).

Chapter 23 of Agenda 21 underlines that broad public participation in decision-making is one of the fundamental prerequisites for the achievement of sustainable development. Also, availability of water and sanitation are a basic premise for the argument for urban sustainability (Choguill, 1993). Community participation in the delivery of these basic services is a major way towards achieving this goal.

Having said all this, it is important to remember that

Whatever the arguments... community participation is no substitute for professional or governmental interventions or for formal planning or design, but an intrinsic part of both processes. And just as when governmental and professional interventions of the wrong kind can distort programs in favour of the needs of those who dominate, so too can community participation. (Hamdi, 1991:86).

8.5.14 Landlord and Tenant Associations

Habitat I (1975) endorsed public participation as a right of everyone and recommended the promotion of workers' organizations, community organizations, and neighbourhood and tenants' organizations. Tenant participation has been proposed and practised in diverse ways in the North: some involve tenants individually; others collectively; some are formal and regular; others are *ad hoc* and occasional; some have been promoted by statute, while others have been developed from local initiatives (Institute of Housing, 1989). In the South, however, few tenants belong to tenant organizations, and most are likewise much less involved than owner-occupiers in neighbourhood organizations (UNCHS, 1989c). In informal settlements in Kenya, too, the great majority of landlords and tenants do not belong to representative associations; but tenants' organizations have tended to be common in public housing estates (UNCHS, 1989c). The need for landlord/owner and tenant organizations is becoming more exigent as informal settlements continue to proliferate and provide rental accommodation for an increasingly larger proportion of the urban poor in Kenya. It is important that more representative associations be developed to serve the interests of both tenure groups. Certainly, they can help consolidate the lax legal basis and reconciliatory relationship which is a common feature of landlord-tenant relations in many informal settlements.

8.5.14.1 Landlords' Associations in Informal Settlements

The formation of landlords' associations in informal settlements is recommended, firstly, because it can help dispel the largely unfavourable image associated with landlordism, which also

portrays relations between landlords and tenants as posing one of the major difficulties of rental accommodation. Certainly, not all landlords in informal settlements follow an inexorable capitalistic logic or commercial rationale. Indeed, as Gilbert (1993) affirms, it is the lack of capitalistic behaviour that sustains the expansion of rental housing in many informal settlements. Landlords' associations can also assist landlords, especially the many who operate on a small-scale and are letting rooms as a kind of subsistence strategy (as is the case in Swahili Village and Bondeni), by advising them about legal matters and contractual relationships between landlords and their tenants; advising those who wish to expand their property to increase the number of tenants, or wishing to improve or redevelop their property; or advising those who wish to have their property managed by professional agents.

8.5.14.2 Tenant Participation and Tenants' Associations in Informal Settlements

Tenant participation in informal settlements and upgrading interventions is recommended because it will enable tenants to play a greater part in determining the future of their area. Indeed, by undertaking and paying for maintenance and repair works, as we saw in Chapter 6.3.4.3 and 7.2.2, tenants in the two *majengos* are already doing so. It will assist better decision making by providing information which can be taken into account in environmental planning and infrastructure delivery. This can lead to not only better decisions, but also more satisfied tenants. Participation can also be seen as essentially linked with the moral right of tenants to influence their own living conditions, either on the basis that the tenant pays or because of an implicit perception of the nature of a democratic society (Institute of Housing, 1989). Hence, tenants' associations should be formed as they represent a discrete method of, or approach to, tenant participation in informal settlements. Non-involvement of tenants can lead to their alienation, disaffection and antipathy, whereas participation is likely to increase tolerance of mismatches between users' preferences and priorities and existing housing conditions within settlements. This is all the more reason why the formation of tenant organizations should be actively promoted.

8.5.14.3 Potential of Landlords' and Tenants' Associations in Settlement Upgrading

The constitution of landlord/owner and tenant associations can also be expedient in environmental upgrading of settlements. The associations, representing the interests of their members, can facilitate selection of project components by choosing from alternative levels of service and various tested technical solutions, depending on how much owners/tenants are willing to contribute towards the installation of services. This can have significant implications for cost recovery. Where local associations are made responsible for ensuring payments or even collecting payments themselves, agreements may more probably be honoured. Where formed, such associations should be registered with the local chiefs office and, possibly, the proposed informal settlements development authority. In this way, both tenure groups will have a greater

voice. Moreover, it will be a means of minimizing exploitation of vulnerable tenants by unscrupulous landlords following the implementation of upgrading projects.

There is, of course, the possibility of such associations developing predominantly into partisan political bodies (Gilbert and Varley, 1991). But while this may indeed be a risk, it is less of a problem than the absence of representative associations which guarantees that the interests of neither tenants nor landlords will be served. Thus, their formation should be actively promoted.

8.5.15 Non-Governmental Organizations (NGOs)

While the dominant responsibility of housing the urban population may rest with the Government, NGOs, like bilateral and multilateral donors, can also exert a pivotal influence. But, NGOs cannot and should not compete with bilateral and multilateral donors in implementing large-scale projects or funding policy reform (Drabek, 1987). NGOs are among the strongest advocates of participatory practice in housing development. In recent years, a wide range of such organizations have been involved in various (experimental) projects throughout the South. Though there is a common thread binding them all—confidence in people and participation as a means of change—NGOs differ vastly in philosophy, approach and method of work (Shah, 1984).

8.5.15.1 Involvement of NGOs in Settlement Upgrading

Several NGOs have an interest in micro-policy reforms supportive of people-centred development, perceive development as primarily a people-to-people process, and lack the inherent structural constraints faced by the large donors (Korten, 1987). The involvement of such NGOs in upgrading projects is recommended because it can assist the benefits of environmental upgrading to reach a larger number of households. Also, as the objectives of most NGOs go beyond building shelter to building communities (Hamdi, 1991), NGOs can be particularly useful in organizing communities which may otherwise not know how to organize themselves. Where the local community may be required, as a prerequisite for (government/bilateral/multilateral) assistance, to form alliances with NGOs, their role should be supported by the Government. But as Choguill (1996) mentions, once community organization is in place and the community begins to act, external organizations should allow communities sufficient space to act themselves.

NGOs have four intrinsic advantages over both the public and formal private sectors: mediation, communication, coordination and networking. However, whereas they perform creditably on a one-off project basis, difficulties frequently arise in sustaining and scaling up their activities and impact over the longer term. NGOs also commonly suffer acute lack of funds to develop and sustain programmes of research, monitoring and lobbying (Choguill, 1996; Hardoy and Satterthwaite, 1989; UNCHS, 1993d). If NGOs are to make maximum use of their strengths, and

to minimize their weaknesses, partnership with the Government is essential; local NGOs should also be linked with international NGOs. NGOs involvement should also include a change from project the approach to taking the longer view and assisting in the implementation of programmes.

NGOs are already actively involved in the improvement of environmental conditions in many informal settlements, offering a variety of services. Indeed, there are several NGOs active in both Swahili Village and Bondeni. The vital role they are playing can be even more beneficial if effectively co-ordinated with the efforts of other actors in housing sector. The Government should promote NGO involvement in local communities as part of its enabling policies. If appropriate links are established between the proposed informal settlements development authority, Shelter Forum and NGOs, then the limited supply of technical assistance within the country can be extended more efficiently for the benefit of all in upgrading projects.

NGOs in Kenya are sometimes treated with some suspicion, especially in the light of their 'grassroots' activities, and more so because of their unaccountability to the Government. While multilateral donors may be able to serve as a kind of "buffer" between the Government and NGOs in order to circumvent unnecessary political tension (Drabek, 1987), it is imperative that a better rapport be established between the two. In this respect, NGOs should apprise the Government if they become involved in what the latter considers to be 'subversive' activities.

8.5.16 Gender Strategies

Women are a key economic resource in Africa (Word Bank, 1997b). The crucial part they play in development, however, contrasts sharply with the systematic gender-based discrimination they face in accessing basic resources and technologies requisite for the facilitation of their role. They are systematically under-represented in institutions at the national and local level, and seldom participate in decision-making. Gender barriers inhibit their participation and reinforce power disparities. Institutional legacies, cultural constraints and competition for scarce resources have contributed to the omission of women from various programmes and projects (Word Bank, 1997b; Yudelman, 1987). Because of the status attributed to them, women in Kenya are economically disadvantaged and vulnerable. Yet, the number of women-headed households in urban areas is rising. For many, the poverty cycle is vicious. This is patently manifested in their poor housing conditions—many are compelled to live in informal settlements, as was noted in Chapter 6.3.2.

8.5.16.1 Women's Participation in Settlement Upgrading

The incorporation of women's participation in settlement upgrading is advocated, for similar reasons to those presented by Moser (1992):

- (a) Their participation is an end in itself. Being primarily responsible for child-bearing and rearing, women are most affected by housing and settlement projects. They should, thus, be involved in the planning and decision-making, and also the implementation and management of projects which impact on their lives.
- (b) Project results can be improved through women's participation. As household welfare is their particular responsibility, women are more aware of the needs for infrastructure and services. Their commitment to the success of projects that improve living conditions is also greater.
- (c) Through active involvement in upgrading projects, women may be stimulated in other spheres of life.

Women have, in fact, been actively involved in housing activities, in both rural and urban areas. They have contributed significantly to the improvement of housing conditions in rural areas, through the formation of *mabati* groups whereby (traditional) dwellings have been roofed with corrugated iron sheets. More recently, they have played a significant role in the implementation and dissemination of appropriate technologies, including FCR sheets and tiles, stabilized soil blocks, and ferrocement water tanks. Building materials production is a widespread approach through which women can both earn a living, and contribute directly and indirectly to low-income housing (Thurman, 1993).

The formation of women groups in informal settlements should, thus, be encouraged and supported. Not only should women living within the same settlement be encouraged to form groups, but a forum through which women from different settlements can share experiences, views and aspirations should also be established. In this way, they will be able to generate more proposals and ideas on how to improve their housing conditions. These groups should all be registered, and both the proposed informal settlements development authority and concerned chiefs should be aware of their existence and support their activities.

8.5.17 Public/Private Partnerships

Although not a panacea for the shelter problems confronting the urban poor, in the right circumstances, public/private partnership can provide an effective mechanism for improving the shelter options of low-income groups. Their potential is enormous, and it is imperative, therefore, that a propitious environment within which partnerships can prosper be created. The Government, with support from the international donor community, should ensure the flow of shelter inputs and generate the legal and regulatory framework required to mobilize the resources of the poor in developing their own housing. It is in this sense that public/private partnerships represent the key to the GSS (UNCHS, 1993d).

Great emphasis is placed by the GSS on operational partnership arrangements among the various actors in the shelter-provision and -improvement process. The public sector, private commercial sector and third sector each have their roles to play in the overall development of shelter.⁸ The key to effective management lies in the integration of these roles in a manner that is mutual supportive. These partnerships have considerable potential for mobilizing under-utilized capacities in the shelter sector. Partnerships provide a mechanism for resolving the "needs/demand gap" in housing provision between what people can afford and what the market can provide (UNCHS, 1993d). The challenge for agencies responsible for shelter issues is to ensure the creation of an environment within which such arrangements can advance (Dowdeswell, 1993).

If we accept that the government's real task in the housing field is to direct and co-ordinate existing forces and resources (and not to abandon them or attempt to replace them), then government agencies must work along with those forces accepting existing values and priorities wherever these coincide with the logic and demands of the situation (Turner, 1963).

8.5.17.1 Innovative Partnerships in the Provision of Environmental Infrastructure

Good urban management begins with the provision and maintenance of infrastructure: the key to success here lies in the establishment of adequate partnerships between the public and private sectors (Biau, 1995). There are evident advantages to partnership in the provision of environmental infrastructure in informal settlements. While community participation can reduce construction costs, increase cost recovery, and promote coverage and sustainability, it is irrational to expect informal settlement residents to develop their own infrastructure. The capital costs of installing water, sanitation, drainage, road networks and electricity supply are definitely prohibitive (UNCHS, 1993d).

Hence, following UNCHS (1993d) suggestions, it is recommended that the Government play a leading part in providing environmental infrastructure which low-income households in informal settlements are incapable of providing solely through their own initiatives. Still, it is improbable that direct public provision of services will be an efficacious solution; small-scale privatization of services will undoubtedly continue. Experience, however, shows that it is possible for private suppliers to enjoy significant cost advantages over the public sector but they must operate within a framework supervised by government which can maintain the necessary levels of quality and accessibility. Hence, partnerships between the public sector, informal sector, NGOs and CBOs

⁸ The "public sector" refers to the institutions and responsibilities of government at local (municipal), regional and national (central) levels. The "commercial private sector" refers to institutions, firms and individuals active in different aspects of the shelter process but always organized to generate a profit on the investment of their resources, and includes actors of widely varying size and scale, from large developers operating on a very small scale in building a few houses or providing services to a small number of households. The "third sector" refers to organizations of people which have as their objective the promotion of the good of their members (CBOs), and to institutions which support and mediate on behalf of these institutions (NGOs); it includes housing co-operatives, community organizations, collectives, women's groups and common interest associations.

are advocated. In this way, the conditions essential to balance cost recovery with equity can be met. First, there will be a strong link between cost and accessibility (the role of the informal sector). Secondly, cost recovery will be facilitated through community participation at all stages of the upgrading process (hence the importance of NGOs and CBOs). Thirdly, access and sustainability can be secured through effective administration and supervision (through the proposed informal settlements development authority and chiefs).

8.5.17.2 Innovative Partnerships in the Production of Rental Accommodation in Informal Settlements

Approximately 80% of urban households in Kenya live in some form of rented accommodation (RoK, n.d.). The greater part of this accommodation is held in the informal sector—the vast majority of low-income rental opportunities are provided in informal settlements. It can be argued, therefore, that encouraging the production of rental housing via innovative partnerships between the public and informal sector is one of the most important aspects of partnership in the development of enabling shelter strategies. The critical policy choice is how to promote the production of improved rental accommodation in informal settlements, since by doing so there is some assurance that the supply of rental housing will be increased within the affordability limits of the low-income majority. A pragmatic way of improving rental accommodation in informal settlements, without an increase in rents and the concentration of profits accruing to a small number of landlords, is to promote construction by small-scale landlords following environmental upgrading. These objectives can be achieved by developing innovative partnerships between public agencies (the proposed informal settlements development authority and chiefs), NGOs, CBOs (including landlords' and tenants' associations) and those who produce shelter in informal settlements (through sub-contractual arrangements and division of labour).

8.6 "Planned Inevitability"⁹: The Renaissance of *Majengos*

It is important to remember that, typically, upgrading only momentarily makes up for a deficiency in local governments' investment/resource and implementation capacity—the housing deficit is not removed. In point of fact, if de-densification of housing structures is found to be necessary in order to improve environmental conditions within a particular settlement, an actual reduction in the housing stock will result. Indeed, it is for this reason that sites-and service schemes were originally implemented alongside upgrading projects, the aim being that residents displaced from the upgraded settlement would be accommodated in the former. Experience, however, has demonstrated that poor households are commonly unable to access plots in sites-and-services.

⁹This term is derived from Abrams (1964) who identifies it as one of ten ways in which governments were acting in relation to economic activities. In this approach, governments plan the installation of roads, electricity supply, or other works so that the site becomes the logical or even inevitable locus of industry, private housing, or other operations.

Hence, there is a need for alternative ways of ensuring that not only all existing residents, but also possibly additional poor households, benefit from improved housing conditions following the implementation of upgrading projects. There are a number of distinct possibilities in this respect—the primary one being proposed here is "planned informal settlements". This notion is largely consistent with Turner's (1963:379) description of a "planned squatter settlement" in which the original solution was to provide an absolute minimum within the means of almost all households—i.e., a plot, a provisional dwelling, and drinking water standpipes near each site; but no drainage, roads, pavements nor electricity. The system compares with the traditional and economically logical process of informal settlements themselves—but with significant improvements: the lay-out is better, the plots more regular, there is a minimum supply of potable water at the start, and the development will be completed, eventually, at a lower cost because of efficient initial planning. By tying the conditions of length of leases to levels of investment, all income groups can participate and upgrading is maximized. A similar approach—the surveyed plots programme—aimed at providing a viable alternative to squatting by providing potential squatters inexpensive plots in a planned environment, was implemented in Tanzania following the failure of even sites and services projects to reach the required affordability levels. The layouts for surveyed plots are designed to the same eventual standards as serviced plots but, save for a skeletal water supply, no services are supplied until after settlement has occurred (Mghweno, 1984). It is recommended that "planned informal settlements" be modelled on these approaches.

The notion of "planned" informal settlements is by no means revolutionary in Kenya. Indeed, this is exactly what the original *majengos* established in a number of urban centres in Kenya were (Farnworth, 1964; Hoek-Smit, 1976; Majale, 1985). Kariobangi 'sites-and-services' scheme in Nairobi was established along similar lines (Ross, 1973). The results of the research show that informal settlements make a substantial contribution to the low-income rental housing stock in urban areas. Also, the prevailing environmental conditions in Swahili Village and Bondeni, and the environmental impact of the uncontrolled extensions and upgrading project implemented in the latter settlement strongly support the case for environmental planning and management strategies in settlement development and upgrading. Hence, the recommendation for the adoption of the "planned inevitably" concept.

The implementation of two upgrading projects simultaneously, rather than an upgrading project in conjunction with a sites-and-services scheme, is also recommended. The second settlement identified for upgrading would necessarily have to be a settlement with a lower density of residential structures to facilitate the creation of infill plots on which additional housing units could be constructed to accommodate displaced residents from the first settlement in which de-densification was found to be essential to the improvement of environmental conditions.

8.7 Recommendations for Future Research

The Government has apparently long-recognized the importance of research in housing. Indeed, the 1970-1974 Development Plan (RoK, 1970:518) affirms that Government housing policy is to utilize all available resources to improve the housing situation by expanding and introducing various programmes to facilitate production of housing, including: "research into housing markets and constraints on supply, especially in finance, the contracting and building industry, and in building codes." But the most tangible achievements in the research and development arena in Kenya have been in agriculture and food production (RoK, 1997).

While acknowledging that infrastructure provision threatens to be a persistent constraint to upgrading low-income shelter, the 1997-2001 Development Plan (RoK, 1997) asserts that the MPW&H¹⁰ will produce, by January 1998, a comprehensive long-term plan for upgrading all informal settlements in major municipalities based on experience gained in a single scheme. The present thesis holds that this is impracticable. A majority of policy and decision-makers are lamentably ignorant of conditions and practices in urban low-income informal settlements. This may not be important if the Government is simply providing standard services, but it is critical if the government is to play an enabling role (McGranahan *et al.*, 1996). If shelter policy is to adequately address the housing issue of the low-income majority in urban areas, especially those living in rental accommodation in informal settlements, a far better understanding of informal settlements and their role in the urban low-income housing market is essential. This is not simply a reiteration of the common academic refrain "more research is needed" (Doebele, 1986:270), but an assertion that concrete knowledge about informal settlements is still lacking, and there is still insufficient factual information on which to base policy decisions. What is at stake is an intervention into the housing market in order to change the way it operates for low-income people (Peattie, 1982), and "it is the actors and processes in the informal sector... which is, relatively speaking, the *terra incognita*" (Peattie, 1987:268)

8.7.1 Pursuing Research and Development Activities Focusing on Upgrading

A data bank of informal settlements in the major urban centres should be assembled, and should contain temporal information on a series of variables, including tenure structure, land prices, service levels, housing quality, environmental conditions, and levels of employment and unemployment. The databank will make it possible to offer informed comments on the changing status of informal settlements in urban areas, and to establish whether they are proliferating or whether levels of overcrowding are improving or worsening. It is necessary to know what effect economic recession has on the development of informal settlements.

¹⁰ Ministry of Public Works and Housing.

In addition to research of a more theoretical nature and the compilation of a databank, there is a need to assemble case studies of settlement upgrading projects. There is need for empirically grounded descriptions of the processes by which settlements develop and of the actors in the development process. This means both quantitative and qualitative data, and greater use of case studies from which to draw general conclusions. Case studies of experiences in environmental upgrading need to be conducted, particularly in cases where the community has been actively involved in implementation of the project. Particular attention should be paid to the role of tenure in initiating housing improvements, extensions and maintenance, and the conditions under which such works occur. Case studies of different types of informal settlements, different means of granting tenure, and different ways of resolving tenure disputes should also be conducted.

The UNCHS (Habitat) Settlement Upgrading Project (SUP) is working in various parts of the world to develop approaches and tools for settlement upgrading. Currently, SUP is focusing on the Visual Settlement Planning (ViSP) Approach, an integrated computer application designed to address the specific mapping, planning and cadastral registration needs of settlement upgrading. The UNCHS-SUP project in Rhoda, an informal settlement in Nakuru, was aimed to field test ViSP technology as part of the first phase of SUP, and has proved to be effective for the collection of cartographic information and the production of updated thematic maps (Petrella, 1996). It is recommended that the use of ViSP technology be extended to other informal settlements to assist the assembly of the databank, and subsequently for land regularization and upgrading.

At the level of informal settlement analysis, there is still a dearth of information on the utilization of environmental infrastructure which needs to be better understood, including the use/non-use and abuse of particular services. An issue which requires considerable research attention is appropriate on-plot sanitation systems for the predominantly tenant households renting single rooms in informal settlements. A related area in which future research could be usefully directed is the environmental implications of uncontrolled extensions to existing structures in informal settlements and consequent densification. The additional stress on existing infrastructure and the environmental problems caused by such development at both the settlement level and the wider urban level need to be better understood.

Little is known about landlord-tenant relations in formal settlements. This critical issue would recompense consideration because, not only is it a potential source of social conflict, but it can also have significant bearing on the formation of landlords' and tenants' associations, as well as community participation in upgrading projects and cost recovery.

Community-based initiatives raises the significance of the roles of households, which have commonly been given insufficient attention by policy makers and community development

professionals. They are the intermediary spheres through which top-down economic and environmental programmes are processed and acted upon, and are a direct link to community-based and income-generation elements in bottom-up applications of policy. In environmental initiatives in low-income areas, households are, in effect, being persuaded to change their attitudes, to provide time and labour to develop policies and programmes, and to work for their own and the wider communities interests. Researchers have found that households, which have social, economic and political functions, are central in the potential for success or failure in 'brown agenda' housing and environmental improvement (Pugh, 1996b, 1997). Thus, household policies and research need formulating and developing. More detailed studies of poor renter households in informal studies should include: "... listening to the poor, a quality which remains rare even among those with the best intentions to help them" (Angel *et al.*, 1983:537). The participation of non-professionals should be considered an important part of rigorous inquiry into the form of housing supply and into the needs, habits, and social institutions that produce the greater part, by far, of the housing occupied by the low-income majority. Also, as Douglass (1992) notes, community level research, whether by academics, government agencies, NGOs or other "outsiders", has tended to be a one way process of intrusion into the community to collect information for analysis and its circulation in all quarters but one, the community itself. This situation needs urgent rectification; findings from research should be communicated to the community itself if it is to be motivated to participate in development projects.

Another area which could significantly affect the impact of environmental upgrading of informal settlements is the extent to which NGOs are involved. Only a limited amount of work has so far been carried out on this aspect. It is an area of analysis that would repay further effort.

8.8 Conclusion

Given the reality that the vast majority of low-income urban households are constrained to renting accommodation in informal settlements and will have access to shelter only to the extent that such accommodation is accessible, the contention that it is not a suitable option does not seem tenable. However, to the extent that this notion is based on perceptions of squalid rental housing in many counties in the South, it expresses the fear of exploitation of the renting poor by a rentier class (Kearre and Parris, 1982). This phenomenon does exist to some extent in informal settlements in Kenya—but it can be minimized. The most important action which can be taken is to facilitate access by the urban poor to affordable shelter in informal settlements, and to improve the housing conditions through environmental upgrading.

In concluding, it is *comme il faut* to contemplate briefly whether, in proposing the upgrading and promotion of rental accommodation in informal settlements as the most pragmatic approach to addressing the housing issue of the low-income majority in urban areas in Kenya, we are not

advancing a defeatist strategy? Are we being misanthropic and proffering less than the economically disadvantaged deserve, as critics might charge? Are we discriminating against those less well-off and denying them opportunities for legal security of tenure? Are we condemning low-income renter households to a life of perpetual poverty in sub-standard housing? Are we depressing the poor and keeping the less-privileged under social control as a socialist perspective might have us believe?

As a long-term commitment, I do not believe that we are in danger of pauperizing the low-income stratum of the urban population in Kenya or, indeed, merely serving a palliative which may be interpreted as making an insufferable situation seemingly endurable. Indeed, I am of the conviction that there is nothing fundamentally inequitable about rental accommodation in informal settlements—certainly not if the deficiencies are addressed in adequate manner through appropriate, realistic, responsive, progressive, and sustainable upgrading.

Epilogue

Epilogue

This thesis has sought to substantiate the proposition that urban low-income informal settlements are not only an inevitable reality in present-day Kenya but will remain so for the foreseeable future, and that settlement upgrading is thus the most pragmatic approach to systematically improving living conditions for the low-income majority compelled to live in informal settlements in Kenya's rapidly growing main urban centres.

The ultimate concern of policy research, as stated in the *Prologue* to the present dissertation, is knowledge for action. Policy research, the essence of the present study, is distinguishable from theoretical research in two main respects. First, it emphasizes the substantive or practical importance of research results rather than merely 'statistical findings', and, secondly, it is a multi-disciplinary approach which in turn leads to the eclectic and catholic use of any and all research designs which might prove helpful in answering the questions posed. Hence the methodological integration in the present study, whereby the extensive literature survey undertaken as a cardinal element of the study has constituted the basis for much of this work.

The discussion in Chapter Two—*The Urban Housing Situation in Kenya*—affirmed that Kenya is characterized by the dynamic situation of unprecedented rates of urbanization and rapid urban population growth. The urbanization and demographic trends have not only engendered escalating rural and urban poverty, but have also precipitated a massive urban housing deficit. Despite the formulation of policies, strategies and programmes aimed at addressing the housing plight of the low-income majority who are most affected by the shelter situation in urban areas, public housing has been picayune in volume and exorbitant in cost. Moreover, the profit-motivated formal private sector has made little, if any, contribution to the low-income housing stock. The supply-side distortions have arisen mainly from policies affecting the major components of the housing process—land, finance, the construction industry/labour, building materials, infrastructure, and the legal and regulatory framework. Consequently, the informal sector is playing an increasingly important role in the supply of housing for the urban poor in Kenya's rapidly expanding cities and secondary towns by providing inexpensive low quality housing, thereby enabling poor households to spend a lesser proportion of their income on housing and hence more on food and other necessities. Burgeoning informal settlements in Kenya are as much the product of failure in the housing delivery system as they are the product of poverty.

Urban low-income informal settlements in the South represent a phenomenon which is not altogether unprecedented, neither in form nor in the planning problems it creates. Indeed, urban low-income residential areas and the inadequate housing conditions that poor, disadvantaged and vulnerable urban dwellers who inhabit them have to contend with have long been the concern of

various parties, among them academics of different disciplines, as elaborated in Chapter Three. Based for the most part on experience in the North or propounded in the Latin American context, much of the scholarly endeavour has centred on the identification of (physio-environmental and socioeconomic) characteristics of urban low-income neighbourhoods; conceptualization of the nature, function and attributes of informal settlements; developmental typologies, taxonomic classifications and classificatory analyses as a means to understanding the development processes in operation; and generalization on improvement strategies.

Various studies of urban low-income settlements in Kenya have also been undertaken and documented, but these have typically ignored the implications of settlement characteristics for improvement policies and strategies. This thesis maintains that settlement characteristics and certain indicators are indeed of particular utility and operational relevance in the formulation of improvement policies and strategies, and, that from the planning perspective, it is important that both the similarities and differences in settlement characteristics are emphasized, as each settlement is apt to have unique attributes that are not generalizable. Indeed, the treatment of all settlement types as homogenous serves to compound confusion and renders proper understanding of the dynamics of informal settlements and their housing markets impossible. A (methodological) proposal of classificatory analysis of urban low-income informal settlements in Kenya, in which six taxonomic classifications are differentiated, has thus been set forth. The design is to provide a more systematic basis for improvement strategy formulation, programme options and project design than subjective judgement, and further inform the implementation of upgrading interventions. Holding that comparative and developmental typologies are useful as sensitizing concepts for more in-depth analysis in policy-orientated analytical enquiry, field surveys were conducted in two *majengos*, one of the main typologies of informal settlements distinguished in the last part of Chapter Three—*Informal Settlements: A Pervasive Reality*.

Settlement upgrading has been cited as a prime means of improving the housing conditions of the urban poor. The higher priority that upgrading has been accorded and the development of novel approaches to upgrading has, moreover, been recognized as one of the most significant innovations in housing policy in the South over the last 10-15 years. A large number of governments in the South have adopted policies to upgrade informal settlements and a wide range of upgrading programmes and projects have been implemented in several countries. Experience and comparative evidence of upgrading from different countries, however, point to a number of cardinal issues that need to be addressed. These were highlighted in Chapter Four—*Settlement Upgrading: The Pragmatic Solution*—and include: affordability-cost recovery-replicability; tenure; site planning and reblocking; densification and dedensification; standards; infrastructure; maintenance; community participation; gentrification; the rental issue; and income generation. Indeed, as orthodox upgrading projects are designed to improve the quality of the residential environment in informal settlements in which householders are principally owners, it

is improbable that they will achieve the anticipated results in the Kenyan context as most contemporary informal settlements in Kenya comprise a predominantly tenant population. Moreover, the settlements have extremely high densities of population and dwellings owing to the vast number of households renting a single room in a multiple-room housing structure.

Upgrading projects have yet to be undertaken at a scale sufficient to benefit a significant proportion of poor households constrained to live in informal settlements in Kenya. However, a limited number of informal settlements in some secondary towns were upgraded under the auspices of the World-Bank funded Third Urban Project in Kenya. One of these, Bondeni in Nakuru, was selected as one of the two research locations for the present study. The other research site was Swahili Village in Machakos which has not benefited from any upgrading interventions as such. As elucidated in Chapter Five—*Research Design and Methodology*—the two research sites were selected primarily for the following reasons: firstly, they are both *majengos*—which though not representative of all informal settlements in Kenya constitute one of the six typologies of informal settlements distinguished in this thesis for purposes of classificatory analysis; and, secondly, they maximized comparability and allowed access to a wide range of perspectives.

Chapter Six—*Two Majengos in Perspective: House and Household Characteristics*—evidences that the two *majengos* are typical of most informal settlements proliferating in Kenya's rapidly growing urban centres in that the majority of residents are tenants living mostly in one-room dwellings in poor quality, inadequately maintained housing structures. Landlordism in the two *majengos* is small-scale and hardly an exploitative activity. Owners in both Swahili Village and Bondeni have lived in their respective dwellings considerably longer than tenants, but, generally speaking, the socioeconomic circumstances of the two tenure groups are not radically dissimilar. The two tenure strata do not differ significantly with respect to household size and their ownership of consumer durables is comparable. Not altogether unexpectedly, more tenants than owners intend to return to their home rural areas. Owner households are more satisfied with living conditions within their dwellings (in terms of size and privacy) than tenants, which again is not surprising as they occupy more rooms.

Inadequacy of infrastructure and deficient basic services, which precipitate degraded living environments and poor health conditions, are a paramount problem in the vast majority of informal settlements inhabited by the urban poor in Kenya. Chapter Seven—*Two Majengos in Perspective: Infrastructure, Services and Environment*—indicates that Swahili Village and Bondeni are both not exceptions, this despite the upgrading interventions in the latter *majengo*. The analysis of the common place environmental problems that characterize informal settlements inhabited by the urban poor majority in Kenya (which include deficient water supply and sanitation, inadequate solid waste disposal, and poor drainage) at settlement and household level

in the two *majengos* provided vital information about the residents' position with regard to access to basic infrastructure and their appraisive environmental perceptions. The present thesis considers such information essential to the formulation of apposite policies and strategies for improvement of housing and environmental conditions in informal settlements.

The upgrading project implemented in Bondeni was not in conformity with a majority of policy packages which are derivatives of the global technocratic paradigm of recommended action for settlement improvement—municipal service extension, tenure security, cost recovery, socioeconomic motivation and community participation. Rather the upgrading project basically comprised the following physical elements: the provision of a water borne sanitary unit on each plot in the project area, the construction of murram roads and an unlined open channel drainage network, the provision of communal solid waste storage facilities, and erection of street lights. Households in Bondeni definitely have better access to on-plot services, especially water supply, than their counterparts in Swahili Village because of the upgrading exercise.

On the whole, owner and tenant households in the two *majengos* have almost equal access to on-plot services, and their satisfaction levels with the services are comparable. The priority ranking of on-plot services of the two tenure groups in Swahili Village and Bondeni is similar, and the majority of both owners and tenants in both *majengos* would be willing to pay for better access to their priority on-plot service—water.

The upgrading project in Bondeni, however, seems to have done little to improve general on-plot living conditions and overall environmental conditions in the settlement. Most of the on-plot sanitary units are not functional and, besides being impracticable for the multiple households occupying each plot, were far from popular among residents. The unlined open channel drainage network—another of the components of the upgrading project aimed at ameliorating environmental conditions in the neighbourhood—is, in point of fact, a major source of environmental nuisance and danger to health. Not only is it the source of malodorous smell, a problem aggravated by the fact that a substantial number of neighbourhoods throw their domestic solid waste into it, but the open storm water drains are also an ideal breeding ground for mosquitoes. Indeed, opinion among owner and tenant householders in Bondeni as to whether or not the general environment in the neighbourhood has improved as a result of the implementation of the upgrading project is divided, but those who think it most certainly has are in the minority.

In the ultimate chapter of the present thesis, *Environmental Planning and Management of informal Settlements: Policy Implication and An Agenda for Action*, all the interrelated concerns which have been discussed in the study, including theoretical, conceptual and contextual issues and precepts in substantive chapters of the thesis and Appendix One (based on the extensive

literature review), and the salient findings from the two chapters of analyses have been synthesized. Policies and programmes which are considered to be realistic, pursuable and implementable have been proposed. These are intended to be replicable on a sufficiently large scale so that appropriate and sustainable upgrading of urban low-income informal settlements in Kenya can be achieved and generate improvement in the housing conditions of the poor, vulnerable and disadvantaged groups compelled to live in them. Exploratory conclusions from the insights and understandings gained for policy deliberations and formulation, and methodological propositions and matters of practice have also been presented. And the chapter has pointed to lacunae of knowledge which may provide direction for a comprehensive policy-oriented research agenda that is sensitive to locally specific circumstances.

In sum, the central thesis in this study is that, given the reality that an overwhelming majority of low-income households in Kenya's rapidly growing main urban centres are compelled to live in one-room rental dwellings in burgeoning informal settlements and will have access to shelter to the extent that such accommodation is available, settlement upgrading, within the framework of environmental planning and management strategies, is the most pragmatic approach to ameliorating their residential circumstances. However, to be apposite to the Kenyan context, orthodox upgrading programmes and projects will have to be adapted accordingly. The findings do not claim to be unparalleled, but they do shed some new light on the phenomenon of urban low-income informal settlements in Kenya and a number of issues germane to the theory and practice of settlement upgrading in that country. In so doing, it is anticipated that the study will have realized one of its primary objectives—to serve (in a modest way) as a basis for credible guidance in the formulation of policies and strategies to improve the housing situation of the urban poor in Kenya.

SETTLEMENT UPGRADING IN KENYA:

**THE CASE FOR ENVIRONMENTAL PLANNING
AND MANAGEMENT STRATEGIES**

APPENDICES AND REFERENCES

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A1.1 Introduction

In the area of urban housing in the South, inquiry, particularly that purposed to suggest guidelines for housing solutions and policy, must begin with an adequate interpretation of housing and of the urbanization process. Analysis can then address, more specifically, the existing urban housing situation in the South. For this a review of the evolution of national and international policy responses to the urban housing issue within the context of development paradigms in the South is useful.

A1.2 Urbanization in the South

A1.2.1 Urbanization: Conceptual and Definitional Issues

The literature on urbanization is replete with concepts and definitions of urbanization; one encounters a plethora of terms and categories without clear definition or delineation, and inserted into interpretative frameworks variously by individual authors. Concepts such as 'urbanization' and 'urban growth' are frequently conflated; in some cases, the term 'urbanization' is reduced to a consideration of urban social structure or even limited to a study of the housing question (Slater, 1986). But Jones (1975) observes that urbanization is being generated by so many diverse factors, operating with particular emphasis in individual countries, that it would be impossible, as well as impolitic, to summarise the process in any material way.¹ Still, while acknowledging the diverse interpretations of the urbanization process, McGee (1971:10) maintains that Lampard's (1965) definition of urbanization, despite being non-specific, contains the central conceptual meaning: "a way of ordering a population to attain a certain level of subsistence and security in a given environment."

Having said that, it is important to distinguish between 'urbanization' and 'urban growth'. According to UNCHS (1994a), urbanization, simply defined, is the process of growth in the proportion of people living in urban areas.² It is distinguishable from urban growth which refers to the proportionate growth of urban areas themselves (i.e., annual net additions to urban population divided by the size of the urban population). Put otherwise:

Growth of the urban population can be looked at in two ways: on its own, in which case it is described as urban growth, and as a proportion of the national population in which the term urbanization is used. (Ouchu and Gould, 1993:275 cited in UNCHS, 1994a:2)

¹Potter (1985) affirms that although urbanization is a global phenomenon and it is possible to identify similarities in its manifestation in different countries, in every region, and possibly every country, the process is actually a unique phenomenon with roots in the economic and social life of the area concerned.

²UNCHS (1987a:68) defines urbanization as: "The process by which a national population shifts from rural occupations to urban occupations, and hence from rural settlements to urban settlements—of all sizes." The point being underscored is that the settlement pattern of any country subsumes urban settlements of any magnitude, ranging from primate cities to small urban centres.

The Dictionary of Human Geography (Johnston *et al.*, 1994) states that, in general usage, urbanization refers to the relative concentration of a territory's population in cities and towns (i.e., relative urban growth). It also propounds a three-part model of urbanization which sees demographic change as a dependent variable within a process driven by structural imperatives.³ The model is especially suited to analysis of capitalist systems; it has demonstrated that rapid urban growth is occurring in many regions of the contemporary South as rural-urban migrants swell the urban populace living in informal settlements.

Another process, 'urbanism'—defined as "a way of life associated with residence in urban areas" (Johnston *et al.*, 1994:665), or "the tendency for people to lead increasingly urban ways of life" (Potter, 1992:5)—can also be differentiated. In this respect, it is sometimes argued that the rapid influx of rural migrants, used to a rustic life style, is causing a reduction in urbanism when both urbanization and urban growth are increasing rapidly in the South (Potter, 1992).

No matter what definition is given to 'urbanization', and irrespective of whether it is regarded as a primarily demographic, economic or social-behavioural process, it definitely constitutes a most significant multi-faceted phenomenon that is transforming the South, with major social, economic and political implications.⁴ No public policy can ignore the process (Cheema, 1992). Indeed, there has been growing apprehension about several trends as urban growth and development have progressed, including: the neglect of development opportunities; the persistence of lagging and declining regions; and politically explosive regional and social disparities; the burgeoning populations in (primate) cities; and the high levels of unemployment (Rodwin and Sanyal, 1987). Particularly salient, however, are the soaring demand for urban shelter, infrastructure and services and the environmental problems of cities in the South (UNCHS, 1989a; Hardoy *et al.*, 1992).

A1.2.2 Urbanization Trends

Trends of urbanization are best appreciated by examining the degree of urbanization in terms of indices such as the rate of urbanization, the rate of urban population growth over a specified

³As a *demographic process*, which is the commonest use of the term, urbanization is presented as a process whereby urban centres grow in relative importance within a space-economy through, first, an increasing proportion of the population living in all urban places and, second, the growing concentration of those people in the larger urban settlements. Linked to these demographic processes are the *structural changes* in society consequent upon the development of industrial capitalism. Thirdly, there is *behavioural urbanization*—urban areas, particularly the larger ones, constitute centres of social change: attitudes, behaviour patterns and values are modified in the urban milieu (Johnston *et al.*, 1994). This conforms with the three conceptions of urbanization identified by Lampard (1965) as having currency in the social sciences: the demographic, the structural and the behavioural. However, Potter (1985), while agreeing that urbanization can be regarded as involving alterations in the size, density and composition of populations in different areas and entailing fundamental changes in the economic structure of a society, argues that its affecting changes in human behaviour is perhaps more contentious. But UNCHS (1995b) affirms that urbanization has led to what can be described as a global urban culture which is transforming social behaviour and consumption patterns down to the smallest rural settlements. See also Mangin (1970) for a diversity of anthropological accounts of the transformation of life styles as rural people take up residence in various cities.

⁴Gugler (1988) considers that the urban transition constitutes a momentous human transformation, comparable to the domestication of plants and animals that made a sedentary life possible.

period or the "proportion urban" (UNCHS, 1994a:2).⁵ In 1970, the level of urbanization in the South was 25%, in 1994 37%, and it is projected to be 57% in 2025 (de Haan, 1997a). Cities are presently absorbing two thirds of the total population increase in the South (UNCHS, 1994a). By the year 2000, for every urbanite in the North, there will be two in the South (Potter, 1992).

Although all countries have experienced urbanization and virtually all continue to follow the apparently inevitable course to a predominantly urban future, there have been significant variances in the rate, magnitude and character of urban concentration across countries (Gilbert, 1993; World Bank, 1991). Analysis by the World Bank of urban growth of four categories of Southern countries grouped according to (i) their period of most rapid urbanization, (ii) the percentage of urban population, and (iii) present rates of urban growth, distinguishes the following fundamental differences in urbanization patterns (World Bank, 1991):

- Urbanized countries (more than 75%) with high historical population concentrations but declining rate of urban growth. Most growth is attributable to natural increase rather than migration.
- Recently urbanizing countries with approximately 50% of the population urban. Population pressures in rural areas will continue to impel rural-urban migration, but growth rates have peaked and are declining.
- Predominantly rural but rapidly urbanizing countries, experiencing very high urban growth in major cities and secondary towns. Migration continues to be a primary source of urban demographic growth, but household migration has replaced male migration, resulting in natural increase becoming the principle cause of growth.
- Large, predominantly rural, heavily populated countries with considerable land constraints. Population size and high growth rates have evolved both major urban concentrations and several secondary cities and towns. Despite having stabilized at high levels, growth rates are projected to continue for the next decade.

Comparisons between the North and South will reveal that the rise in the urban proportion of total population in the latter is not unduly phenomenal. But contemporary urban growth in the South has such large absolute dimensions as to distinguish it clearly from trends in the North during and after the Industrial Revolution (Harris, 1991; Satterthwaite, 1995).⁶ This contradicts earlier assertions that the urbanization process in the South is identical to that which occurred in

⁵It can be argued, however, that the definition of urban is extremely broad. Usually, areas with over 5,000 inhabitants are considered to be urban, even though many of the areas have a predominantly rural character (de Haan, 1997a). In Kenya, a locality with 2,000 or more inhabitants classifies as urban (RoK, 1983).

⁶Lomnitz (1977), however, argues that although urban growth has always been characteristic of industrialization, comparison with the industrializing nations in the nineteenth century are not entirely valid. Whereas the industrial technology then required a large unskilled labour force, this is not the case today as large masses of unskilled labour are no longer a prerequisite for industrial growth.

the North.⁷ While urban population expansion can generally be correlated with economic growth, it would be imprudent to infer a causal relationship either way. Indeed, the precise nature of the relationship between the two has generated considerable debate (Drakakis-Smith, 1981; Potter, 1992). An unequivocal characteristic identifiable in the South, however, is the allometric nature of urban growth, i.e., the way the largest cities have experienced the most rapid increase. In all regions, save China, the tendency towards increased concentration is evident; it is most pronounced in Africa (Drakakis-Smith, 1981; UNCHS, 1987a).

A1.2.3 Demographic Driving Forces

Demographic studies of urbanization have identified rural-urban migration, natural increase of population and reclassification as the primary driving forces underlying changes in urban areas.⁸ The universality of these components of urban growth has been clearly observed, although their mix varies by countries or regions (UNCHS, 1994a).⁹

A.2.3.1 Rural-Urban Migration

Migration is one of the three fundamental elements determining population change and structure in an area: the others are births (fertility, natality) and deaths (mortality). Scale provides an essential criterion for classification—migration may thus be international or inter-regional, or inter-urban, rural-urban or intra-urban¹⁰ (Butterworth and Chance, 1981; Johnston *et al.*, 1994). Rural-urban migration in the South, a most perplexing dilemma of the development experience, involves massive, and historically unprecedented, movements of population from rural areas to burgeoning urban centres (Todaro, 1992). It is a manifestation of the urbanization process which entails a transition from primary production (agriculture, mining, etc.) to secondary and tertiary production (processing and service activities) (Mohan, 1994). It is likewise indicative of unjustifiable regional and sectoral distortions in patterns of development; at the same time it may make their reversal more difficult (Preston, 1988). The fact that a country is urbanizing reflects that rural to urban migration flows outnumber migration flows in the opposite direction. Various factors influence the scale of net rural to urban migration that underlies the urbanization process (UNCHS, 1996a).

⁷For example, Reissman (1964:167-8 cited in McGee, 1971:15) claims: "... industrial urban development in the West and in the underdeveloped countries today is the same process although greatly separated in time and space."

⁸But Drakakis-Smith (1981) and UNCHS (1987a:64), among others, mention only two causes of urban population growth: the natural increase of urban populations and migration. Alternatively, Crook (1997) distinguished four components of the crude growth rate of cities and towns: the crude birth rate, the crude death rate, the gross in-migration rate and the gross out-migration rate.

⁹Davis's account (1968, cited in McGee, 1971) of the growth of cities leading to urbanization in the North distinguishes three ways in which cities grow: (i) through an excess of births over deaths (natural increase); (ii) movement of people from non-urban to urban areas; and (iii) reclassification of settlements from rural to urban because of population growth. The last factor was of limited significance to the history of urban growth in the North; the second was of little more consequence as mortality in the cities was substantially higher than in the rural areas and birth rates lower. Thus, rural-urban migration constituted the principal component of urban population growth.

¹⁰Butterworth and Chance (1981) hold that the term 'rural-urban' is one of many that distorts our understanding of migration by introducing an extraneous and misleading polarization of what is essentially a continual interaction over time and space within particular contexts. See also McGee (1971) for a reformulation of the concepts of the rural-urban continuum.

Migrants move to urban centres for manifold reasons.¹¹ Migratory shifts are frequently occasioned by increased population pressures on resources; but circumstances may differ, and need not be directly related to population densities or the size of the resource base. In most of the South, population pressure has been most intense in the agricultural sector (Drakakis-Smith, 1981; Sanyal, 1988). Poverty,¹² both absolute and relative,¹³ and income variability, which leads to greater vulnerability have likewise prompted massive migrations into urban areas (World Bank, 1990). Spreading rural poverty due to the agrarian crisis has precipitated rural-urban migration and, hence, urban poverty (UNCHS, 1995a; 1996b; van Lindert, 1992).¹⁴ Most studies have shown migrants to be motivated primarily by rational economic considerations—many make an immense migratory investment in expectation of economic and social betterment (Preston, 1988; UNCHS, 1987a; World Bank, 1990).¹⁵ The decision to migrate is, however, actually dependent upon anticipated rather than guaranteed rural-urban wage differentials.¹⁶

While there is a consensus that migration is a selective process and that expanding cities in the South are crowded with young households, variant perceptions of migrants hold. As de Haan (1997b) observes, some writers characterize migrants as indigents and their migration as a last resort—a compulsory move from depressed rural areas in a quest for subsistence in urban areas.

¹¹UNCHS (1987a) underlines that what is involved are complex migratory movements of rural residents to urban centres, and not simply the shifting of farmers to urban areas. See Butterworth and Chance (1981) for a statement on why people move and the push-pull hypothesis. See also Todaro (1992).

¹²Most definitions associate poverty with a 'lack' or 'deficiency' of the necessities required for human survival and welfare. There is, however, no consensus about what basic human needs are or how they can be identified (Wratten, 1995). However, Hardoy and Satterthwaite (1989) maintain that basic needs are the same for rural and urban dwellers—adequate means of livelihood, a secure shelter, access to clean water, health care and education, protection against natural disasters and contamination from wastes, as well as basic civil and political rights.

¹³Poverty, according to Ekins (1992), can be viewed as both an absolute and relative phenomenon. The absolute variety is essentially a physical condition afflicting that lot of the world population that is not able to meet their most basic human subsistence needs on a regular basis. Relative poverty, on the other hand, is a function of expectations and opportunity in a particular society. Alternatively, UNCHS/ILO (1995) states that economic measures fall basically into three categories: absolute measures of poverty (which usually specify an amount of money that an individual or family must receive to obtain a minimum standard of living); relative measures of poverty (based upon percentages, e.g. a percentage of the total population or of total income); and absolute/relative measures of poverty which combine absolute measurement with a relative standard.

¹⁴Poverty as measured by low income is generally at its worst in rural areas, even allowing for the often substantial differences in cost of living between urban and rural areas. the problems of malnutrition, low life expectancy, substandard housing and lack of education are also, as a rule, more acute in rural areas. In numerous countries rural poverty is a critical factor in the overall incidence and depth of poverty (World Bank, 1990).

¹⁵Hardoy and Satterthwaite (1987) affirm that numerous studies on migration have evinced how people's movements, whether temporary or permanent, from rural areas or smaller urban centres to large urban centres (or indeed from large urban centres to rural areas) are essentially logical responses to where economic opportunities are better or survival more certain. Thus, in terms of equity, preventing impoverished people migrating out of poor areas precludes moves to greater equality (Harris, 1989).

¹⁶Smith (1996) asserts that the urban-rural differential is the overriding factor in rural-urban migration. But Potter (1992) stresses that "the pluses or advantages of urban living for the individual are often *perceived* rather than real." (Potter's italics). Weitz (1973) observes that rural-urban migration frequently takes place not because of new economic opportunities in the city, but mainly due to the hope of the migrants of a better and easier life in town. Haywood (1986), similarly notes that close examination of the growth of urban centres in the South has indicated that what has been occurring is expansion, through population growth and migration, rather than urbanization in the European sense of changes in the migrants' style of life and mode of production. Thus, the flood to urban areas no longer bears any relationship to expanding urban economies and opportunities: underemployment in rural areas is being exchanged for unemployment in urban areas, and migration to cities reflects merely a demographic adjustment to changes in the spatial structure of economic and social opportunities that result from the major urbanization process. Indeed, because of the deteriorating urban environment, fiscal crises, and reduced employment opportunities, many are beginning to question the long held assumption that the poor fare better in cities (Urban Edge, 1991b). In fact, Oberai (1993) asserts that as population densities increase, urban land prices rise, thereby increasing the cost of housing and other urban amenities. This decreases the real rural-urban gap, thus slowing migration and the pace of urbanization.

Others perceive migrants as rational actors—as individuals responding to income incentives in their migration decisions.¹⁷ Another division of the literature maintains that the poorest cannot migrate. Due, in part, to these inconsistent views, it is unclear how migration influences rural and urban poverty.

Various patterns of migration are observable in the South, including: temporary migration (of men separated from their families); return migration (in which migrants ultimately return to their natal area); and permanent migration (where migrants have no intention of returning to the place of origin, and put considerable effort into becoming established in urban areas). Migration predominantly involves a single, unidirectional move; but sometimes step migration takes place progressively, up the urban hierarchy, with smaller urban centres serving as staging posts for a transient population shifting from rural areas to the capital city (Gilbert and Gugler, 1992; Gugler, 1996a; O'Connor, 1983; Parnwell, 1993; Potter, 1992). There is also circular migration, floating migration and reverse migration (Gugler, 1996b; UNCHS, 1987a), as well as counter-stream migration (constituting movements in the opposite direction to the predominant streams of migration—typically from city to village or from centres of economic activity to economically depressed regions) (Parnwell, 1993). Several moves may also be made over a lifetime. But, whereas previously return migration was the norm, the number of migrants leaving rural areas permanently is steadily growing, partly due to an evolution from individual to family migration.

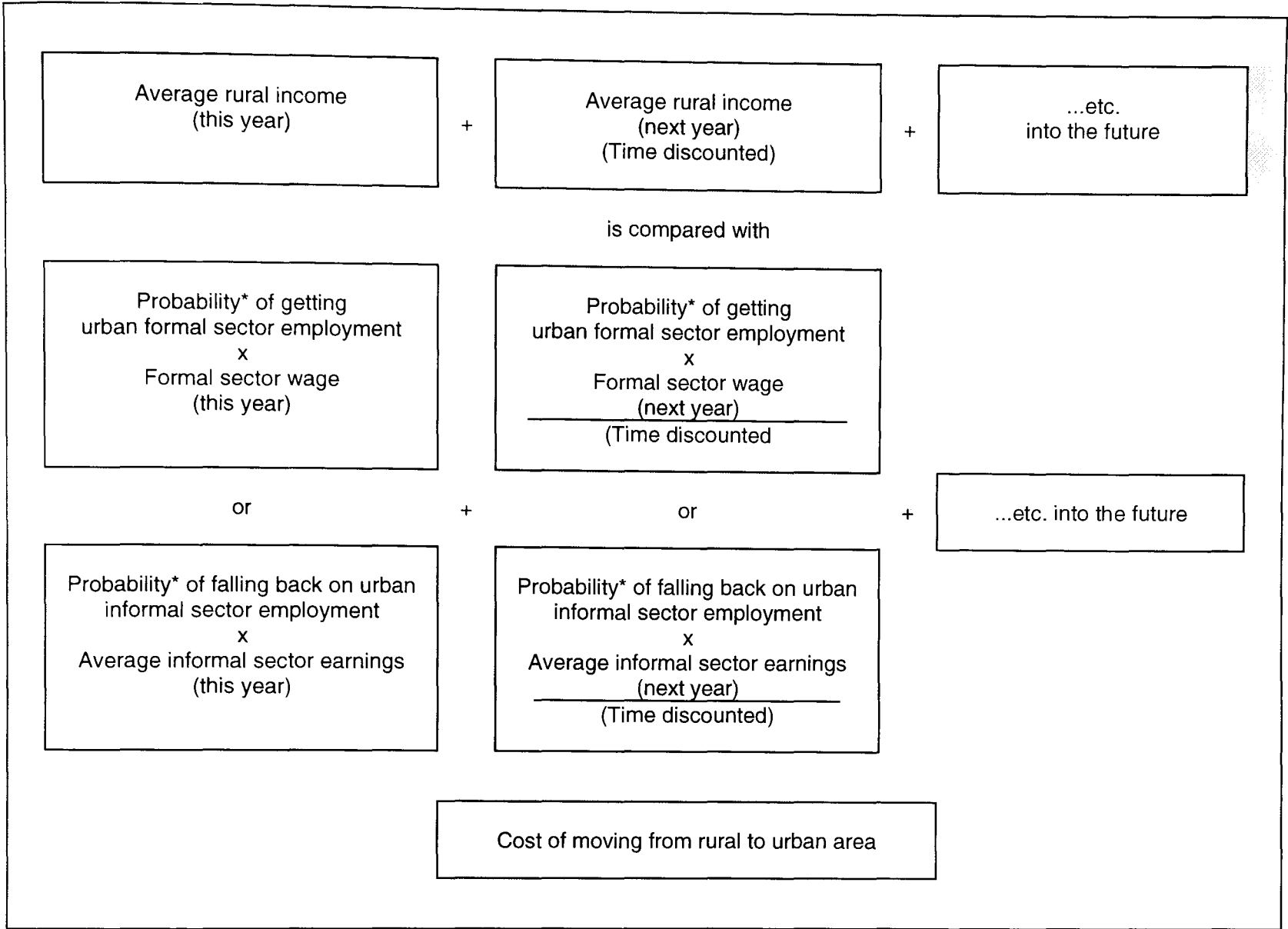
Rural-Urban Migration and the Origins of the Informal Sector

The origins of the urban informal sector are traceable to rural-urban migration through the model of the urban labour market formulated by Michael Todaro, the principal exponent of the neo-classical approach to migration (Crook, 1997; Harris, 1992). The model (Figure A1.1.) uses the modification of expectations theory to explain why, notwithstanding poor employment prospects, migration continued unabated: the impetus was the differential between average rural and urban income. The operations of minimum wage legislation and/or trade union controls sustained urban wages at comparatively high levels. Consequently, waged employment was paid significantly more than the opportunity cost of labour, and employers thus sought to substitute capital for labour, thereby limiting the growth of employment. Still, given the high urban-rural wage differentials, migration to urban areas continued as migrants counted on eventually securing waged employment.¹⁸ While they waited, they were occupied in petty and miscellaneous activity where the marginal productivity was close to zero. This is what evolved into the 'informal sector'.¹⁹

¹⁷UNCHS (1987a) affirms that decisions to migrate are rarely arbitrary. While invariably involving individuals, decisions may be collective, involving kinship groups and even rural communities as a whole. Moreover, migrants typically receive considerable assistance from a wide range of relatives, in the countryside as well as in the city, in their move (Gugler, 1996b).

¹⁸See also Crook (1997) for further explanation of the Todaro model.

Figure A1.1: The Todaro migration model in outline



*These probabilities sum to one in any year as they are the only alternatives available.

Note: The terms 'formal' and 'informal' are used in place of 'modern sector' and 'casual earnings' which are used in the outline of the Todaro migration model presented in Crook (1977:168).

Source: After Crook (1977)

Studies of urban growth and the assimilation of rural migrants in the urban economy substantiate the salience of the informal sector; it continues to play a paramount role in providing a place and livelihoods for new immigrants (UNCHS, 1986a; World Bank, 1990). But, rural-urban migration has become a primary cause of rising levels of unemployment and underemployment and the prevalent poverty and unequal distribution of incomes in urban areas in the South. Most migrants who are engaged in the informal sector earn a minimal income; failure to secure employment means no regular income. Hence, a considerable percentage of migrants do not ultimately improve their standards of living, but simply substitute rural poverty and subsist from day to day as urban "hunters and gatherers" (Lomnitz, 1974:141). Indeed, much of the urban population has found itself constrained to the periphery of the economic, social and political order (Lomnitz, 1974; 1977).²⁰

¹⁹Crook (1997) observes that researchers in both Africa and Asia have objected to Todaro's neo-classical approach, and further criticizes Todaro's model.

²⁰See also Peattie (1974) and Perlman (1976).

A1.2.3.3 Natural Increase

Initially due to migratory flows from rural areas, the positive balance between urban birth and death rates of the already urbanized population—natural increase—now constitutes the principle vector of urban growth in the South (Hardoy and Satterthwaite, 1987; Preston, 1988; Chisolm, 1992; Vigier, 1992; World Bank, 1991).²¹ Natural increase accounts for some 60% of urban population growth (Harris, 1991).²²

But the growing emphasis on natural increase may, UNCHS (1987a) cautions, detract from the complexity of the relationships among natural increase, migration and urban population growth. Indeed, it is often argued that migrants constitute only a minor part of current urban population growth in the South; but they represent a significant group for urban economies and, possibly, for poverty reduction policies (de Haan, 1997b).²³ No Southern country has effectively checked migratory flows, despite the adoption of various strategies and extensive investments in rural development.²⁴ This underlines the need for urban policies to change from containing urban growth to guiding it (Gilbert and Gugler, 1992; UNCHS, 1995b; World Bank, 1991).

A1.2.3.4 Reclassification

The third major component of urban population growth is reclassification (Oberai, 1993; Oucho and Gould, 1993; Todaro, 1984; UNCHS, 1994a). The expansion of areas across some nominal borderline into a technically urban status and re-delineation of urban boundaries to incorporate previously rural places which results in their population and natural increase becoming urban by classification are also significant sources of urban growth (Lipton, 1977; Slater, 1986).²⁵ Reclassification accounts for between 8% and 15% of urban population growth (Harris, 1989).²⁶

²¹Preston (1988) reports that in a study of 29 Southern countries whose data support disaggregation of the sources of urban growth during the most recent intercensal period, 24 had faster rates of urban natural increase than of net-immigration (the latter also including area reclassification). However, Preston (1988) points out that the coverage of African populations in the data set is very poor and that results pertain primarily to Latin America and Asia (excluding China). Judging from the extraordinarily rapid urban growth in Africa, it is probable that rural-urban migration is a more important source of growth there. Indeed, World Bank (1991) asserts that natural increase is currently the major source of urban growth in most continents except Africa.

²²According to Ramachandran (1989), natural increase has accounted for approximately 60% of the growth of urban areas for the South as a whole since the 1960s, and this figure has been increasing ever since. Similarly, Clarke (1991) affirms that cities are currently absorbing two-thirds of the total population increase in the South, and more than half of the urban population growth now results from natural increase and not rural-urban migration.

²³Gilbert (1993) affirms that migration has continued apace in sub-Saharan Africa despite economic recession. He also remarks that if there is a correlation between fewer employment opportunities in urban areas and reduced cityward migration, it substantiates the reiterated belief in the literature in the rationality of the migration process.

²⁴Harris (1989), however, argues that given net migration accounts for between 25% and 32% of population growth, control of migration is not a very effective means of controlling the size of the urban population.

²⁵The current population of most of the world's largest urban areas, including Beijing, Bombay, Dhaka, Jakarta, London, Los Angeles and Shanghai, can vary by many million inhabitants depending on which boundaries are used to define their populations (UNCHS, 1996a). Discrepancies between, and changes in, census and administrative definitions of urban areas continue to adversely affect the statistical analysis of the urbanization process in sub-Saharan Africa (Oucho and Gould, 1993).

²⁶Reclassification and migration, however, appear to be a much more important source of urban growth in the North than in the South. According to Todaro (1984), in the North, 58.3% of the urban population growth is due to migration and reclassification and 41.7% to natural increase. This compares with respectively 39.3% and 60.7% in the South.

These components of urbanization, both the demographic (natural increase/migration) and the nondemographic (reclassification/re-delineation),²⁷ may be influenced by urbanization and industrialization policies, and by national development policies (Oucho and Gould, 1993).

A1.2.4 Policy-Related Determinants

In numerous countries, policy-related factors have given impetus to urbanization; policies frequently bias the basic spatial development pattern toward more rapid urban and more extreme spatial concentration (Oberai, 1993). Policy guidelines differ between countries, ranging from explicit urban policies or implicit socio-economic policies, to settlement and urban hierarchy policies which recognize urban areas as growth/service centres.²⁸ A majority of policies are aimed at avoiding hyper-urbanization, especially of primate cities;²⁹ decentralizing development and employment opportunities away from large urban centres; dispersing population from metropolitan areas to peripheral regions of a country, and containing encroachment on agricultural land by urban areas (UNCHS, 1991a; 1994a).

A1.2.5 Urbanization in the South: A Reappraisal

Several generalizations commonly found in the literature about urbanization in the South have been disproved, or shown to be only partially true, by analysts. Satterthwaite (1995:1) highlights the following—many of which are deceptive and unnecessarily alarmist: "Most of the Third World's urban population is growing out of control"; "Most of the urban population is highly concentrated in mega-cities"; "City populations are exploding . . ."; "City populations in the South have population growth rates that are historically unprecedented"; "Third World cities have been mushrooming".

In most regions of the South, cities have not been mushrooming; urban populations are not highly concentrated in mega-cities; and the assertion that city populations are exploding is, at best, only partially correct. Also, neither all urban centres nor all large cities are growing very rapidly; and not all countries are urbanizing rapidly (Satterthwaite, 1995). The rate of change in the urban proportion in the South is not exceptionally rapid by historical standards; rather it is the growth of urban populations—the sheer increase in the size of urban populations—that represent an unprecedented phenomenon. Indeed, the growth in the urban percentage in the South between 1950 and 1975 compares with that which occurred in most of the North during the last quarter of

²⁷Lipton (1977) refers to the nondemographic components of urban population growth as 'optical illusions' which help to foster the myth of mass urbanization.

²⁸Public services and environmental goals are pertinent elements of urbanization policy in some countries (UNCHS, 1994a).

²⁹Certainly, secondary-city policies in the South have predominantly been aimed at redressing the problem of urban primacy. There are few which have not endeavoured to tackle this ubiquitous problem through one or more of a variety of policies aimed at decelerating the rate of growth of large primate cities and at strengthening secondary cities (UNCHS, 1991a). However, Harris (1989) remarks that the redistribution of population growth towards smaller urban centres imposes even greater strains than before because smaller settlements have fewer resources to cope with expansion.

the nineteenth century (Hardoy and Satterthwaite, 1995; Preston, 1988).³⁰ Higher rates of rural-urban migration were, however, required in the North than in the South, where rural-urban disparities in rates of natural increase are far less significant (Preston, 1988).

Many large cities in the North had very slow population growth rates during the 1980s,³¹ but the fastest growing cities are not all in the South.³² The pattern of urbanization has, however, changed; far more people opt to live in urban places other than the largest ones. Generally, the largest cities are not growing especially quickly—rather, it is the smaller urban centres that are, thereby becoming the larger ones (Gugler, 1988; Harris, 1992).³³ The explanation for the accelerated urban growth in the South lies not in the exceptionally rapid changes in the urban proportion produced by rural-urban migration, but in the rapid changes in total population to which those proportions are applied (Preston, 1988).

Many accounts give the impression that rural-urban migration rates in the South, like birth-rates, are high, and all but uniform in all countries. This impression is positively erroneous. Net rural out-migration rates have, in fact, typically been higher in the North than in the South—rural out-migration is generally highest in countries whose economic performance affords the best potentialities for accommodating the exodus. Poorer countries, characteristically, have not only more deprived rural areas, but also more deprived urban ones—the net effect of poverty appears to be to retain population in rural areas. This contradicts the view that absolute deprivation in rural areas is the motive force impelling multitudes to urban areas. (Preston, 1988).

Prediction in the social sciences is almost always an imprecise procedure, particularly where both population growth rates and internal migration have to be considered (Thomson, 1984).³⁴ Yet, various sources, including the United Nations, have been making projections of urban populations far into the future for over two decades. Their record for accuracy is not particularly good (Satterthwaite, 1995).³⁵ But, while the exact size of the urban population at some future

³⁰The fact that many Northern cities grew at rates comparable to most of the South's fastest growing large cities shows that it is not impossible to deal with rapid urban growth (Hardoy and Satterthwaite, 1995).

³¹Cook (1984) notes that the rate of urbanization in Europe and the eastern United States in the late 19th century was also slow compared to the South today.

³²UNCHS (1996) gives the example of Nairobi, which is frequently cited as one of the world's most rapidly growing cities—but both Miami and Phoenix in the United States had larger populations than Nairobi in 1990, yet all were small settlements in 1900.

³³This is certainly the case in Kenya; the issue is discussed in more detail in the section on urbanization trends in Kenya below

³⁴For instance, giving projections for urban populations far into the future based on extrapolating past trends does not take into account the fact that population growth in cities is very sensitive to economic performance and very often to government policy (Satterthwaite, 1995).

³⁵Most of the projections or estimates made for 1990 or 2000 back in the 1970s or early 1980s have been incorrect. Moreover, suggestions that the population of Nairobi will grow from under one million to 18.9 million between 1980 and 2025, as projected by the United Nations in 1982 must be regarded as implausible (Satterthwaite, 1995). Findley (1993) notes that UN urban population projections are not based on births, deaths and migrations, but are based on the UN urban-growth differential method. Their applicability for specific countries should be questioned, and Findley (1993) urges users of UN figures to do some reality testing and consider more carefully where the urban population is expected to grow and with what economic basis.

date, or the number of cities over a certain size which will exist by then may be controversial, the urban population will definitely constitute an increasing proportion of a total growing population for virtually all countries over the next few decades³⁶ (Thomson, 1984).

A1.2.6 Rapid Urbanization: Success Story or a Failure?

The rapid urbanization process and the accelerated growth of cities in the South can be interpreted as either a success story or a failure. Certainly, urbanization, along with the cities it creates, has long been perceived in negative and problematic terms. It has been considered inimical to national and human development, and deemed undesirable because of its presumed catastrophic physical and social consequences. The benefits of urbanization have, in fact, always outweighed the problems. But it is only recently, following prolonged emphasis on rural areas in development discourse and international co-operation, that research and public policy have begun to acknowledge its positive attributes (N'Dow, 1994).

On the positive side, in terms of population growth, urbanization leads to decline in fertility rates due to improved living standards and easier access to education—urbanization thus plays a positive role in demographic transition. From the environmental point of view, migration to urban areas lessens the pressure on fragile ecological zones, and also on agricultural land and other resources. From a financial perspective, value added transfers from rural to urban areas and higher government expenditures in cities are compensated by much higher revenue in urban areas and by private transfer of goods, services and financial resources to rural areas—urban and rural development are thus mutually supportive (UNCHS, 1995). The concentration of production and consumption in cities means a greater range and possibility for more efficient use of resources, while significantly higher population densities mean a reduced demand for land relative to population. High densities also mean much lower costs per household and per enterprise for the provision of piped water supplies, the collection and disposal of human and solid wastes, advanced telecommunications and most forms of health care and education. Urban incomes are higher than rural wages, and proportionally fewer people live in poverty.³⁷ Moreover, the 'social economy'³⁸ is most developed in cities (UNCHS, 1996a). Given the scale of migration, urban centres have absorbed the influx rather well, often providing a modicum of basic services and a living for many (Linn, 1983). On balance, migrants seem content, "primarily because life is 'better' in the city than it was in their home communities" (Findley, 1977:23 cited in Linn, 1983:5).

³⁶But, as Findley (1993) advises, if attempts are to made to synchronize national and urban development processes better, the methodologies for estimating, projecting, and evaluating urban growth processes must be revised.

³⁷Linn (1983) cautions that care must be taken in making such income comparisons because the cost of living may be substantially higher in urban than in rural areas. See discussion on urban poverty.

³⁸The social economy is a term given to multifarious initiatives and actions that are organized and controlled locally and that are non-profit oriented. It includes numerous activities that are unwaged and unmonetized—including the operations of citizen groups, residents organizations, and associations in informal settlements (UNCHS, 1996a).

On the negative side, there is an increasing gap between the problems created by the rapid demographic and physical growth of cities, and the capacity (or willingness) of governments to provide basic solutions. Urban unemployment, underemployment, escalating poverty, crime, and urbanization's parasitic impact on rural areas are frequently cited as adverse consequences of urbanization, as are inadequate access to housing and amenities and services which many governments find difficult to provide, and the deplorable living conditions in informal settlements—the overcrowding, deficient water supply and sanitation, uncollected solid waste, and general environmental degradation culminating in maladies and high mortality (Cheema, 1993; Hai, 1988; Linn, 1983; N'Dow, 1994; Perlman, 1993; Sethuraman, 1981). Moreover, traffic congestion and air pollution in large Southern metropolises can be comparable with the North. For a majority of urbanites, cities are not developing economically, and are neither adequately serviced nor socially integrated (Hardoy and Satterthwaite, 1987). While both perspectives contain elements of the truth, in isolation each omits significant dimensions of urban development in the South (Linn, 1983).

In both the North and the South, however, thinking about urbanization has changed significantly from the opposition that prevailed in the 1960s and 1970s (Davidson and Nientied, 1991). That cities are not "pathological symptoms of economic breakdown" (Harris, 1989:175), and that urbanization is an inevitable and indeed even expedient dimension of national economic development, has become more widely accepted (Clarke, 1991; Tipple *et al.*, 1994).³⁹ It is now recognized that despite its often chaotic and uncontrollable nature and the desperate plight visited upon so many of the urban poor, urbanization is not a process that is detrimental to a country's prosperity. Conversely, urbanization plays a necessary and climacteric role in development which can advance economic growth if properly managed (Cheema, 1993; Watts, 1992).

But, while cities are contributing considerably to output in the South, they are also the increasing focus of poverty and environmental problems (Clarke, 1991). Indeed, Franklin (1984:xii) contends that practically all future urban growth will ineluctably have the characteristics of "informal squatter-type settlement". Without positive government intervention, such growth will continue to be illegal, unplanned, uncontrolled, insalubrious, and difficult and costly to upgrade, thus compounding already existing urban problems.

A1.2.7 Characteristics of Urban Environmental Degradation

Various environmental problems, which manifest themselves specifically, are associated with rapid urbanization. They include the following (Leitmann *et al.*, 1992) :

³⁹Potter (1992:16) mentions that the crucial debate—'Cities as engines of growth'—was raised as early as 1955 by Hoselitz in a paper, *Generatives and parasitic cities*. The predominant view of the 1950s was that cities indeed spread economic benefits in a generative manner, thus bringing development to poor and backward regions. See Perlman (1993) for a comprehensive summary of old assumptions and new visions in urban policy making.

- *Pollution from urban wastes*: includes municipal solid wastes, hazardous wastes, municipal and industrial waste water, stormwater drainage, and ambient and indoor air pollution.
- *Environmental hazards*: urban areas are liable to natural hazards (floods, earthquakes, etc.) and anthropogenic ones, including prolonged exposure to pollutants, chemical contamination and industrial mishaps.
- *Resource management issues*: unsustainable patterns of resource consumption include depletion and degradation of water supplies, inappropriate land development, loss of natural and cultural heritage, and inefficient fuel consumption.
- *Urban transport externalities*: increasing motorization, inadequate road maintenance, incompetent traffic management and poorly operating public transportation contribute to vehicular air pollution, congestion and road accidents.

The impact and extent of these problems will differ in specific cities according to the unique circumstances in each locality. The level of economic development is, however, possibly the most significant determinant of environmental conditions; at a minimum, it determines the capability of a city and society to respond to environmental problems. In prioritizing environmental concerns, the following issues should be considered: the effect of the problem on economic activity; the human effects of the problem; the impact of the problem on the urban poor; the possibility of the problem leading to irreversible outcomes; and whether there is local political support or a constituency for solving the problem (Leitmann *et al.*, 1992).

A1.2.8 Options for Action

Managing crucial environmental issues involves several public and private sector actors, and diverse strategically targeted preventive and remedial measures. Four principal action areas in addressing the fundamental causes of environmental degradation, each with a range of management options⁴⁰ are identified by Leitmann *et al.* (1992):

- *Strengthening governance*: involves mobilizing public support and participation to develop a constituency for sustained environmental improvement, strengthen institutional capacity for identifying and addressing environmental problems, and establishing express institutional arrangements for urban environmental management.
- *Improving policies*: should comprise more comprehensive, efficient and effective regulatory, economic and environmental health interventions.
- *Improving urban operations*: should focus on the delivery and management of urban environmental infrastructure and services, emphasizing strategic financing and investments, and establishing public/private partnerships.

⁴⁰For a summary of problems and management options see Leitmann *et al.* (1992:136-7).

- *Improving information and understanding*: involves the collection of environmental data to understand and prioritize them, and formulate environmental programmes to resolve them. It further necessitates expanding curricula on the scientific, technical and managerial aspects of the full range of urban environmental services and land management.

A1.3 The Urban Housing Issue in the South

A1.3.1 Shelter and Housing: Conceptual and Definitional Issues

A cursory review of the literature on housing will reveal variant conceptions of 'shelter' and 'housing': a definitional consensus is evidently lacking. For example, Yadav (1987:1) states that shelter "... is the basic human need and ... the traditional definition of housing." Alternatively, Bourne (1981:13), maintaining that two major sources of confusion prevail in the literature on housing, one of conceptualization and the other of measurement, asserts that: "housing, at its most basic level, is certainly 'shelter', but it is equally more than that." N'Dow and Chinery-Hesse (1995:v) similarly affirm: "Shelter is much broader than housing." And various bodies of the United Nations have taken housing to mean:

the residential environment, neighbourhood, micro-district or the physical structure that mankind uses for shelter and the environs of that structure, including all necessary services, facilities, equipment and devices needed for the physical health and social well-being of the family and the individual. (UN, 1976:1)

There is, however, a growing consensus that housing is a composite good that provides a heterogeneous mix of services (McCallum and Benjamin, 1985). For example, Orville Grimes (1976:30) articulates:

Housing encompasses far more than living space and shelter. Its nature and value are determined by the services it offers. These services are varied, including neighbourhood amenities, access to education and health facilities, and security, in addition to shelter. Their worth depends upon quality considerations such as design, density, building materials and floor pace, and on access to employment opportunities, public facilities, community services, and markets.

Indeed, Kenya's Seventh Development Plan (RoK, 1994:237) elaborates:

Housing attributes encompass shelter and privacy, location relative to employment area and residence in terms of transportation costs and environmental amenities. It is both a consumption and an investment good whose production, management and distribution require dual participation of government and private sectors.

The concept of 'adequate shelter' that is integral to the 'Global Strategy for Shelter to the Year 2000' is:

... more than a roof over one's head: it means adequate privacy, adequate space, adequate security, adequate lighting and ventilation, adequate basic infrastructure and adequate location with regard to work and basic facilities—all at reasonable cost.⁴¹ (UNCHS, 1990a:4)

⁴¹UNCHS (1990a) points out that conditions of adequacy may vary from one country to another.

The present study is primarily concerned with the upgrading of informal settlements which accommodate the low-income majority in Kenya's urban centres through the provision of environmental infrastructure, whereby their residential circumstances are improved. Thus, the UNCHS (1990a) concept of 'adequate shelter' will be adopted for purposes of analytical clarity.

A1.3.2 The Urban Housing Issue in the South

Housing constitutes one of man's most basic needs. Yet it is critically deficient, by any standards, in urban areas in the South, where poverty and inequality are patently reflected in the housing conditions⁴² (O'Connor, 1983). Accelerated urbanization and massive flows of rural-urban migrants, occurring without parallel industrialization, has created "demographically bloated, 'exploding' cities" (Smith, 1996:59) and condemned burgeoning urban populations to inadequate housing (Dickenson *et al.*, 1983).⁴³

Analysis of the rural-urban housing dichotomy in the South verifies that, if there is indeed a housing concern in the rural areas, it is essentially one of quality rather than quantity.⁴⁴ Virtually all rural households have some form of shelter, however rudimentary it might be. Contrarily, the urban housing situation is grossly inadequate, both quantitatively and qualitatively.⁴⁵ Indeed, UNCHS (1987a:76) asserts:

the great shelter problem in developing countries is the shortage of affordable housing for the low-income majority of households in **urban** areas. (Author's emphasis)

The consistent reference to "**the** (singular) housing problem", which suggests, rather erroneously, that the issues and manifestations are constant the world over, is criticized by Korboe (1992:16, his emphasis). Aina *et al.* (1989:2) likewise remark:

... a detailed understanding of housing problems cannot be abstracted out of the particular city in which they occur since so many factors, particular to that city, influence the scale and nature of housing problems—for instance income distribution, the pattern of land ownership and laws concerning land ownership rights, government policies and the attitude of the government and the judicial system to illegal settlements and to political struggles around the issue of shelter.

⁴²Dickenson *et al.* (1983) assert that the operation of the class structure of cities in the South is nowhere more geographically explicit than in the composition and working of the housing market.

⁴³Yeh (1984) affirms that four variable together define the housing situation in any city: income, city size, rate of urban growth and policy. the rate of urban growth intensifies the housing problems created by city size, which include accessibility to employment, to commercial and social services and to other urban facilities.

⁴⁴Housing is also of particular concern in urban areas because, in contrast to rural areas, urban areas experience higher population growth rates, worsening environmental and health conditions, and greater need for public involvement in supporting housing development. Moreover, the greater concentration and conspicousness in urban areas make the problem of inadequate housing politically more urgent than the dispersed and less apparent problems of rural housing (Linn, 1983).

⁴⁵UNCHS (1996a) observes that figures for a countries' or cities' 'housing deficits' can be misleading—especially by underlining that the main problem is one of the quantity of housing units (the deficit) when the main problem is often the quality of the new units.

Thus, more in order may be Linn's (1983:xvii) reference to "the urban housing problem—whose symptoms include land invasion and illegal subdivision, overcrowding, lack of basic services, poor access to employment opportunities, and rapidly rising land and housing prices". This can be seen as the inevitable consequence of a rapid increase in the demand for housing, which overtaxes an inelastic housing supply.

Also, as Peattie (1979) mentions, when one begins to take the existence of the housing problem as itself problematic, it may appear anomalous that the housing problem as a social construct is set in urban areas. Indeed, although rural housing in the South is notoriously rudimentary, disquisitions on housing almost invariably begin with an alarming account of the rapid urbanization out of which the housing problem is seen to arise.⁴⁶

A1.3.3 The Demographic Dimension of the Urban Housing Challenge

From 1990 to 2030, global population is expected to grow by 3.7 billion people; 90% of this increase is likely to take place in the South. Moreover, 90% will be urban, and virtually all of that will accrue to human settlements in the South. Urban populations are likely to be double the size of rural populations by 2030. Rapid population expansion is exacerbating the frequently mutually reinforcing impacts of poverty and environmental damage in urban areas. Primarily due to a deteriorating urban environment, at least 600 million people already live in "health and life" threatening situations (UNCHS, 1994b).

Some 12 to 15 million new urban households requiring commensurate housing are formed in the South annually. Many of the new households will be poor, presenting a particular dilemma to those providing housing and public services; a considerable number will continue to be accommodated in informal settlements. The high costs of urban land, infrastructure, and construction, relative to such costs in rural areas, ensure that the economic dimension of the housing challenge will, for the anticipated future, remain concentrated in urban areas. (World Bank, 1993).⁴⁷ Latterly, there has been a significant move away from assessing the quantitative dimensions of housing deficits or 'backlogs' within nations to whether people can find accommodation that meets their needs and priorities—and what constrains those with low incomes from doing so. Certainly, in many cases,

⁴⁶ Haywood (1986) argues that although the urban bias in housing policies can be justified by a concern for the problems associated with population concentrations, it is not justified in terms of the actual numbers of people affected. The neglect in rural housing policies can be perceived as a contributory factor in the development of rural deprivation and its concomitant of rural-urban migration.

⁴⁷ UNCHS (1987a:77) indicates that in Addis Ababa (Ethiopia), Luanda (Angola) and Dar es Salaam (Tanzania) an estimated 85%, 70% and 60% respectively of the population lives in informal settlements, while in Caracas (Venezuela), Nairobi (Kenya), Lima (Peru) and São Paulo (Brazil) approximately one-third of the population is accommodated in informal settlements. But, as Cairncross *et al.* (1990) point out, most case studies are of large cities, when in fact a high proportion of the urban population in the South lives in relatively small urban centres; therefore, the proportion of urban households living in informal settlements may be far less than that suggested by case studies of large cities.

the problem is not one of too few housing units but of the poor quality and lack of basic services in a high proportion of the total housing stock. (UNCHS, 1996:195)

A1.4 The Evolution of Self-Help Theories

The notion of self-help in housing and urban development for low-income groups in the South has been central in application and dominant in the housing literature since the 1950s; such has been the extent of housing deficits that it has maintained continuity of significance (Pugh, 1997). In 1950s and 1960s, the housing issue was perceived largely as a question of moderating standards, costs and subsidies in order to provide housing at affordable costs. But, as rural-urban migration accelerated and population growth rates increased, it became apparent that policies of subsidizing urban housing were taxing resources and were incapable of satisfying demand either in terms of supply or cost. The proliferation of informal settlements patently manifested the ineffectuality of the prevailing housing policies. The low priority attached to housing provision, and poor administrative responses largely derived from an induced conservatism and reluctance to explore new solutions compounded the problem (Haywood, 1986).

Policy responses to the provision of urban housing have changed significantly, reflecting different perceptions of the urbanization process and development of informal settlements. The earliest response to the shelter issue was essentially a non-response, characterized by apathy and indifference. The proliferation of informal settlements, however, demanded an active policy response which, in many cases, was eviction and eradication. But governments gradually realized the inaptitude of these measures given the acute housing deficit. Governments also saw that demolition amounted to a destruction of assets, entailed substantial losses to households who had invested in their dwellings, and frequently meant deprivation of sources of livelihoods (UNCHS, 1987a). By and large, governments recognized the absurdity of

recommending the destruction of people's homes in order to solve the same people's 'housing problems' by providing them with alternatives either they or society cannot afford. In a world of grossly maldistributed resources and injustice, this is a huge, but very black joke. (Turner, 1976:61)

Toleration of informal settlements thus increased amongst most governments, though many still endeavoured to meet growing housing needs through public low-cost housing schemes—which proved futile (UNCHS, 1987a).

Growing disillusionment with public housing schemes as a solution to increasing shelter needs coincided with the emergence of positive attitudes towards the poor, the work they engaged in, and the settlements they built. A burgeoning library of empirical research studies evidenced that the urban poor were far from marginal to the city, but rather an integral part of it. Informal settlement inhabitants also demonstrated that they possessed the skills, motivation and, sometimes, the resources to provide basic shelter for themselves. In favourable circumstances

they were able to improve their dwellings and consolidate their communities, even when perpetually under threat of eviction. They also managed to develop peculiar market mechanisms, provide themselves with building materials largely appropriate to their requirements, and use self-help and mutual aid in building both housing and community facilities. Thus, governments came to accept the principle of self-help, albeit reluctantly at first (UNCHS, 1987a). Indeed,

... a good deal of wishful thinking accompanied the self-help formula. Soon it was viewed as a panacea for the housing problem of the industrializing nations ... The official self-help [programmes] simply tried to incorporate as policy what already existed, but the aim was to adapt the formula to urban environments. (Abrams, 1964:168, 169)

A1.4.1 Evolution of Self-Help Housing Policies within the Context of National Development Strategies

The evolution of housing policies in the South in the post-Second World War period has been located within the context of national development strategies by Burgess (1992);⁴⁸ Awotona and others' (1995) adaptation of his contextualization is summarized in Figure A1.2.

Modernization Theory and Conventional Housing Policies

Modernization theory, the dominant development strategy in the 1950s and 1960s, presented itself variously in political, economic, social and cultural conceptions. All, however, advocated the transformation of rustic, agrarian societies to modern industrial societies, by the South decreasing the share of agriculture in employment and output relative to that of manufacturing and services through substantial capital investment, as was done in the North. Development was perceived essentially as a process of economic growth measurable in terms of per capita GNP. The primary object was to 'go for growth'; concern for poverty and inequality was secondary (Burgess, 1992:76).

Modernization theory underscored maximum mobility of the factors of production—land, labour and capital. It promoted total commitment to industrialization, which in the housing sector meant modern industrialized housing based on Northern technical and cultural standards. 'Conventional' housing was thus the dominant policy wisdom in the South throughout the 1950s and 1960s (Burgess, 1992; Mayo, 1987): "safe, decent, and sanitary housing for all people" was the stated policy objective (van Huyck, 1987:340). In most countries, planning and provision of housing for low-income groups was considered the responsibility of the state. Governments ignored the fact that most new housing was being constructed by the people themselves as they deemed it illegal: "they could not see the shelter for the slums" (UNCHS, 1989b:10). Self-help housing policies were discordant with the prevalent development strategy (Burgess, 1992). Therefore, constrained financial and human resources were directed into the construction of high-

⁴⁸ See also Palmer and Patton (1988) for an alternative statement on the evolution of shelter policies in the South in the post-World War II era.

Figure A1.2: Development paradigms and approaches to housing and settlement policy

Main features of the dominant development paradigms		
'Modernization' Paradigm Post 2nd World War to the 1960s:	Redistribution with Growth Paradigm and 'Basic Needs Approaches' Mid-1960s to mid-1980s:	Structural Adjustment Mid-1980s to 1990s
<ul style="list-style-type: none">● Development defined in terms of economic growth and industrialization.● Emphasis on transformation of agricultural and peasant societies to modern, urban, industrial societies.	<ul style="list-style-type: none">● Growth and redistribution seen as related.● Emphasis on increased output, productivity and employment opportunities.● Redistribution of increments resulting from growth.● Improve absolute incomes of the poor.	<ul style="list-style-type: none">● Economic Recession and Structural Adjustment.● Cuts in public expenditure● Reduction of subsidies● Market oriented development strategies● Privatization
Dominant Approaches to housing and human settlements in the South		
<ul style="list-style-type: none">● Housing defined as a consumption item.● Emphasis put on the provision of 'modern' formal housing units.● Mass Housing schemes.● Informal housing seen as unacceptable, bulldozing and forced removals	<ul style="list-style-type: none">● 1972-6: Emphasis on 'greenfields site and service' projects.● 1976-9: Shift to slum and squatter settlement upgrading.● 1979-84: Cost cutting measures within upgrading projects, labour intensive employment creation schemes and community participation highlighted.	<ul style="list-style-type: none">● Upgrading and Site and Service Projects phased out.● Shift to sectoral and institutional policy reform.● Attempts to facilitate market driven housing processes.

Source: Awotona *et al.* (1995:2)

standard low-income housing, so that few units were built relative to needs, and its allocation to the poor had to entail massive subsidies. As the principal international lending agencies at this time considered housing to be consumption expenditure, housing aid was restricted to technical assistance. Consequently, these projects were extremely limited and made little impact in redressing housing needs (Awotona *et al.*, 1995; Burgess, 1992; Hardoy and Satterthwaite, 1989; UNCHS, 1989b). In sum, "[however] well intended, public housing was picayune in volume, exorbitant in cost, and inefficient in administration" (Rodwin and Sanyal, 1987:8)

The lessons learned gradually and at considerable cost were that: (a) governments conceived shelter solutions in terms of housing units at standards, and hence prices, beyond the affordability of low-income target groups; (b) governments ignored the functional reality of informal settlements which were meeting the affordability and locational shelter needs of the urban poor at a scale far more commensurate with demand than attainable by public housing programmes at practically no cost to governments; (c) government housing agencies presumed that they could intervene in the housing market (formal and informal) without understanding its holistic and ultimately uncontrollable nature;⁴⁹ and (d) governments were attempting to produce and

⁴⁹Governments did not realize that when confronted with economic constraints low-income households will sell-out (informally/illegally, if necessary) to higher income groups. As Turner (1976) notes, it is not uncommon to find all units in well-designed projects in good locations have been sold, rented or sub-let—especially where policing is weak or corruption is strong. This is prevalent whenever the (black-) market price is substantially higher than the value placed on the dwelling by the intended (legal) beneficiaries. When the latter have low incomes or are able to obtain more suitable accommodation for less than the market price, the property is put into circulation, releasing the 'pent-up' demands of

distribute housing at a scale beyond their financial and administrative capacity (Hardoy and Satterthwaite, 1989; UNCHS, 1989b).

Redistribution with Growth

Around the mid-1960s it became apparent that modernization policies were not succeeding; the anticipated benefits of industrialization failed to materialize for a substantial and increasing proportion of the population. Massive rural-urban migration, high and rising unemployment and underemployment levels, high dependency rates and widening income inequalities all contributed towards a substantial increase in the proportion of the total population living in relative or absolute poverty. The housing policies associated with modernization strategies were, apparently, equally unsuccessful. Eradication of informal settlements and rehousing of those displaced had little impact on housing needs and burgeoning deficits. Conventional housing was not only prohibitively expensive for most households, but also failed to accommodate vital low-income household economies (e.g., subletting, the use of residence as workplace, horticulture). Moreover, the housing was located far from employment opportunities (Burgess, 1992).

The policy alternatives to modernization strategies were formulated in the 'basic needs' and 'redistribution with growth' (RWG) strategies, which initially appeared radical as their principal proposition was that growth could be realized by focusing attention on the problems of poverty, unemployment and inequality. The fundamental goals of RWG were an improvement in the absolute incomes of the poor rather than an assault on relative inequality; the distribution of income increments rather than a redistribution of existing income or assets; and labour intensive measures purposed to increase the productivity, output and employment opportunities of the poor.

A new macroeconomic development strategy thus emerged by the 1970s, whose policy objectives included: the deregulation of the informal sector; improved access of small-scale enterprises to finance, markets, technical and managerial assistance; the elimination of factor price distortions in capital and labour markets; the introduction of transfer strategies favouring the poor in public service expenditures (water, sewerage, health, etc.); the quest for labour intensive and 'appropriate' technologies; and the promotion of self-help policies (Burgess, 1992).

The rise of self-help housing policies in the 1970s and 1980s is interpretable within the context of the broader objectives of the basic needs and RWG strategies that dominated the lending policies of this period, the most consequential of which was that of the World Bank. Many of the housing principles and recommendations of Abrams and Turner were compatible with RWG

higher income brackets. These transactions are generally beneficial to all concerned. (For further discussion on 'effective', 'pent-up' and 'potential' demands see Turner, 1976).

goals and constituted the basis for the Bank's policies.⁵⁰ These included: security of tenure and home ownership; access to financial resources; reduction in standards; the need for self-help contributions; the incorporation of progressive development procedures; and access to and development of appropriate technologies and materials. Policies were thus based on sites-and-services and self-help housing projects; core housing; slum and squatter upgrading; regularization of tenure; access to financial, technical and managerial assistance; expanded provision of public services and the stimulation of informal sector activities and small-scale enterprises in project areas (Burgess, 1992).

Structural Adjustment, Mid-1980s Onwards

The mid-1980s was characterised by global economic recession. In the South, the adoption of structural adjustment and austerity measures resulted in the phasing out of site-and-services schemes and upgrading projects from World Bank programmes. Where the latter were continued, it was primarily in peripheral settlements. The emphasis changed towards regulatory and financial reform aimed at promoting private sector participation in the housing process (Awotona *et al.*, 1995). Thus, in the 1990s, strategies of the Bank and other international agencies, and also several national governments, have been shaped by neo-liberal analysis of the limited successes of the project-orientated approaches of the 1970s and 1980s, especially in terms of cost recovery and replicability. New 'programmatic' approaches have focused on policy, institutional and managerial reforms rather than direct involvement in shelter provision associated with 'project oriented' approaches (Awotona *et al.*, 1995).

Alternative Paradigms of Urban Housing Policy Change

Pugh (1997) similarly distinguishes three phases in the evolution of self-help housing policies. In phase 1 (1950-1971), self-help in informal settlements initially fell outside official policy. Negative predispositions were, however, superseded by attitudes and practices that made self-help acceptable in official policies, the fundamentals for progressive change in international housing policy having been laid down by the Turner school. The phase 2 experience centred on the use of state-aided policies in sites-and-services and *in situ* upgrading schemes; and was extensively evaluated by the World Bank and independent researchers. From a broad perspective, the latter group identified various shortcomings (lack of coordination among government agencies, unwieldy institutions, deficiencies in land policy, allocations which bypassed the poor, badly selected locations, and market compromise in socialist countries) and problems (excessively high standards, delays, discontinuities in housing finance and low cost recovery). The ensuing phase (1986-1996) had opposing effects on self-help. On the one hand,

⁵⁰Burgess (1992) stresses that the self-help theories of the Turner school were accepted and operationalized as the dominant housing strategy in the 1970s and 1980s not solely because of the strength of their arguments, but rather because their principles were considered compatible with RWG. Those policy recommendations that were deemed inconsistent with these objectives either disregarded or subordinated (e.g. political devolution, dweller control).

self-help had less significance following the replacement of the project approach by a broad based policy package emphasis; on the other hand, self-help was enhanced in such areas as bottom-up community policies for poverty alleviation and the environment.

Turner (1983a) differentiates three alternative thresholds of urban housing policy change. The first was crossed in most Northern countries after the First World War, following the failures of commercial provision for lower-income populations. The intervention of the state as an alternative developer and landlord or, at least, principal promoter of low and moderate-income housing, led to major material improvements. The South arrived at this threshold after World War II. Influenced by their ex-colonialists or by the general course of urban-industrial change, the radical disparities of context were not sufficiently taken into account by governments at a time when "take-off" fuelled by urban-industrial development was confidently expected by almost all. The high costs and administrative demands of state housing provision soon led some governments with large low-income populations to the second threshold of policy change: a recognition of the fact that they could house only minor proportions of the rapidly growing low-income populations. This resulted in a shift from the direct construction of "turn-key project programmes" (those which supply completed schemes with finished dwellings) to "service programmes" (sites-and-services and upgrading programmes), promoted by the UN, World Bank and other international agencies (Turner, 1983a:77). The transition from the former to the latter programmes represented a prerequisite step towards the next policy development: a new generation of policies based not on government programmes in the conventional sense, but rather on locally self-determined, self-organized and self-managed programmes by the people requiring the goods and services they effectively demand. Governments were to respond to these demands and also anticipate them and stimulate them, primarily through legislative acts and administrative actions—i.e., 'enabling actions' (for locally determined programmes) (Turner, 1983a:78).

A1.4.2 The Self-Help Debate

The classic debate between public and private modes of economic organization is paraphrased in the housing literature in the 'autonomy-heteronomy'⁵¹ controversy (Korboe, 1992:17), otherwise termed the 'self-help' debate.⁵² The Turner school conceived of housing as a social necessity: when left to their own devices, people will build dwellings of types and qualities consistent with their economic capacity, social circumstances and cultural habits. They considered

⁵¹Turner (1976:13) defines autonomy as "self-determined" and heteronomy as "other-determined". Turner's observation and formation of concepts were from the point of view of the local community. User-control in a frame of local communities will generate 'autonomous systems' as opposed to 'heteronomous systems', which are the creation of hierarchical social structures, centralized decision-making and large-scale technologies (Marcussen, 1990).

⁵²The original setting of the Self-Help Debate was the ideological cataclysm of the 1960s and 1970s. Within this context, according to Marcussen (1990), Turner identifies himself as a 'conservative anarchist'. Pugh (1997), however, affirms that Turner's advocacy of self-help in housing rests upon a genuine political economy and elements of social idealism (not often recognized in the literature). With Turner and Burgess the protagonists, the self-help debate (or political economy exchanges between Turner and Burgess, as Pugh (1995) regards the controversy) was grounded in Britain and made particular reference to Latin America; but it was taken up, simplified, and applied to other geographical locations as well.

the 'principle' of self-help [to be] *a priori* positive, because housing is actually produced and . . . it leads to greater autonomy of individual housing users independently of the political, economic and historical context in which self-help arises. (Harms, 1982:17)

The only state intervention required in terms of planning and support were mechanisms to facilitate security of tenure (achieved through expropriation and legalization) and such other resources that people cannot provide for themselves—basic infrastructure; certain building materials and technical assistance which would help improve the physical standards of dwelling construction; and, perhaps, financial resources (Ward, 1982a; Marcussen, 1990). Thus, the 'deprofessionalization' of housing was recommended (Pugh, 1990:57)

A central tenet of the Marxist case⁵³, the basis of much criticism of Turnerian thought, is that under the capitalist mode of production, housing necessarily assumes the commodity form at some point in its production, consumption and exchange. Burgess (1978; 1982) accuses Turner (1976) of having neither an historical or social concept of use values, nor an adequate understanding of the commodity process and, therefore, focusing on technology, bureaucracy and scale rather than on the status of housing as a commodity within a given social formation to explain housing problems.⁵⁴ Once housing is conceived of as either a real or potential commodity, maintains Burgess (1982:61): ". . . it is nonsense to look at low-income housing in terms of use-values alone . . ." ⁵⁵

The Turner school's interpretation of self-help—as an ideal form of social organization involving small-scale, self-sufficient, non-hierarchical and autonomous actions of free and independent self-governing people—which led them to adopt policy proposals based upon a very specific ideological stance, has also been critiqued (Harms, 1982). The antagonists condemned self-help for patronizing the poor, rationalizing poverty, and romanticizing the substandard housing conditions of the poor.⁵⁶ The ideological slogan, 'freedom to build', according to the critics, misconstruing freedom to act with the need to survive—it implies an actual freedom of choice when, in fact, it is the only alternative available to the poor.

⁵³See Burgess (1985a) for an elaboration of a Marxist theoretical framework that allows us to establish the limits of state self-help housing as a solution to the housing problem in the South.

⁵⁴With reference to Turner's perception of housing provision as distinct from what he understood as 'economic' matters, Pugh (1990) comments that although quite credible as a criticism of the costly and inappropriate public housing approach, it is not rational as a broad political economy of housing.

⁵⁵Burgess (1982:61) argues that Turner's conception of housing ignores: (i) the transformation of the self-help house into the commodity form by the producer himself; (ii) the fact that one man's use value can be another man's exchange-value and vice-versa; and (iii) that a self-help house can be a very different commodity to the various interest groups operating in the broader urban market.

⁵⁶Hake (1977:172-173), in his book *African Metropolis: Nairobi's Self-Help City*, asserts: "We need not idealise the culture of the self-help city. It, too, has its corruptions, its exploitations, its falsehoods, inhumanities, cruelties and obscenities . . . It is too easy, in reaction against the modern city's onslaught, to romanticise the shanty-dweller or to suggest that salvation will somehow be delivered at the hands of the urban poor."

Additional grounds for criticism include that it maintains the *status quo*, retards necessary structural change and does nothing to redistribute social resources in accordance with need; it underwrites low wages insofar as access to low-cost shelter reduces the wage level required for subsistence; it is an abrogation of government responsibility insofar as housing provision is placed firmly in the hands of the worker rather than those of the industrialist, local or central government; it allows labour to be exploited twice over—in the workplace (where wages are low), and in the home (where householders bear the burden of life in poor dwelling conditions with inadequate services and have to use their spare time and labour to build or improve their dwellings); it provides only a short-term respite and presents no long-term solution; and it is unlikely to provide enough dwellings.⁵⁷ Also, it cannot substitute indispensable resources for housing provision; it cannot deal with numerous problems requiring centralized decision-making; it violates sound and necessary planning principles; it provides no evaluative mechanism; it is inefficient; it results in a lowering of housing standards; and it can be politically revolutionary and socially divisive (Marcuse, 1992). In particular,

sponsored self-help housing has all the limitations of spontaneous self-help and none of its merits: it accentuates the presence of market mechanisms, increasing the costs to the users and reproducing the problems it is meant to solve while, at the same time, being an instrument of political co-optation and manipulation of the urban poor and of reproduction of the bourgeois ideology of private property. (Fiori and Ramirez, 1992)

Nientied and van der Linden (1988) claim there never was a scientific self-help debate,⁵⁸ but rather a confrontation between two different epistemologies,⁵⁹ which, moreover, produced a widening gap between theory and practice.⁶⁰ In the final analysis, however, the discourse has done little to help the residents of informal settlements solve their day-to-day problems (Mathéy, 1992).

A1.5 The World Bank

The World Bank represents a major contextual factor to be considered in the development process in the South. Its consequence arises because of its paramountcy in terms of the resources it commands for lending to governments, and its role, as a result of its financial dominance, in negotiating the principles and practice of development through the setting of international and national planning, policy and research agendas. Moreover, it has been influential in setting the

⁵⁷ Ward (1982a) notes that many of these criticisms cannot be readily accredited to specific individuals. See also Ward (1982c) reappraisal of conventional wisdoms regarding informal housing.

⁵⁸ According to Lea (1979:49): "Self-help housing is, by its very nature, a supremely unacademic subject . . ."

⁵⁹ Indeed, Turner himself (1978:1141) acknowledges that: "Given different positions on the basic issues, Burgess and I are bound to have different perceptions of the problems . . ."

⁶⁰ Harms (1992) believes the self-help debate has not ceased, but Mathéy (1992) claims that the polarized controversy ceased somewhat at the beginning of the 1980s after it had become obvious that there were valid arguments for contrasting positions; very little that is novel is now added to the disputation.

agenda for land and housing market analyses, and for identifying policy approaches (Gould, 1992; Jones and Ward, 1994a; Pugh, 1994).⁶¹

In recent years, the Bank's interest rates have been rising and the debt repayments needed to service them growing rapidly, causing anxiety in both the North and the South. Priorities within the Bank have also changed. The 'basic needs' emphasis of the 1970s and 1980s, when low interest rates and global capital surplus predominated, appeared expedient to the South's prevailing needs and aspirations. But in the contrary global economic circumstances of the 1990s, the Bank is able to assume a far more dominant profile, with a much greater insistence on offering loans primarily to improve economic performance in the short-term. It is also anxious to impose political, demographic and environmental conditionalities on loans, and to establish an overall economic strategy wrapped up in Structural Adjustment (Gilles, 1996; Gould, 1992; Pugh, 1994).

A1.5.1 The Evolution of World Bank Housing Policies

World Bank housing policy has been innovative and variable, influenced in a 'learning by doing' context of applied housing programmes. In a comparatively short period of two decades it has evolved from simplistic to complicated understandings and approaches of the nature of housing. The Bank's approach to housing in the 1970s and 1980s was at once ideological, expressive of a reformed way of government involvement, and systematically linked to its translation of economic and financial respectability. It was also not without social consideration or abstracted from human purpose. The basic package of ideology, reform and user-pays economics is expressible in the theoretical trinity: 'affordability-cost recovery-replicability', which fits into the Bank's favoured neoliberalist political economy.⁶² The rhetoric and the ideology were intrinsically linked with project approvals, with covenants detailing ways of developing and implementing projects, and with provision for monitoring the projects. In contrast to the conventional public housing approach, the Bank's object was to make housing affordable to low-income groups, without the payment of subsidies. This meant setting development standards within affordability limits, with emphasis on sites-and-services schemes and *in situ* environmental improvement in low-income neighbourhoods, rather than on dwelling construction. Residents, not public agencies, were to be largely responsible for construction. (Pugh, 1990; 1992; 1994a).

⁶¹ Unlike intellectuals such as Abrams, Turner and Burgess, the Bank can use the power of finance and everyday politics to express its housing theory in housing and urban projects (Pugh, 1990).

⁶² In essence, the World Bank's housing theory synthesizes elements from Turner, from orthodox neoclassical economics, and from the housing economics of such writers as Abrams and Burns (Pugh, 1990). For a comprehensive statement of the 'trinity theory' and the meaning, and some inherent dilemmas, of the terms affordability-cost recovery-replicability see Pugh (1990).

Table A1.1: World Bank housing policy, 1970s-1990s			
	1970s	1980s	1990s
OBJECTIVES	Implement projects to provide <i>affordable</i> land and housing for the poor; achieve <i>cost recovery</i> ; create conditions for large-scale <i>replicability</i> of projects.	Create <i>self-supporting</i> financial intermediaries capable of making long-term mortgage loans to low- and moderate-income households; <i>reduce and restructure housing subsidies</i> .	Create a <i>well-functioning housing sector</i> that serves the needs of consumers, producers, financiers, and central and local governments; and that enhances economic development, alleviates poverty, and supports a sustainable environment.
ROLE OF GOVERNMENT	Emphasis on <i>direct provision</i> of land, housing, and finance to facilitate progressive development of housing conditions by <i>project beneficiaries</i> .	Emphasis on <i>provision of housing finance</i> , mainly by public institutions; <i>rationalization of housing subsidies</i> (reduction, improved targeting, and shift from financial to fiscal)	Adoption by government agencies with policymaking, coordination, and regulatory responsibilities of an <i>enabling role</i> to facilitate provision of land and housing by the private sector; improved <i>coordination</i> of sector and macroeconomic policy.
POLICY AND LENDING INSTRUMENTS	Sites-and-services demonstration projects emphasizing <i>affordable housing and infrastructure standards</i> ; <i>tenure security</i> ; and <i>internal cross-subsidies</i> .	Housing finance projects emphasizing <i>interest rate reform</i> (to enhance resources mobilization and improve mortgage instrument design); <i>subsidy design</i> ; and <i>improved institutional financial performance</i> of government agencies involved in direct provision of land, infrastructure, and housing	<i>Integrated array</i> of policy and lending instruments to <i>stimulate demand</i> (property rights development, housing finance, and targeted subsidies); <i>facilitate supply</i> (infrastructure provision, regulatory reform; and building industry organization); and <i>manage the housing sector as a whole</i> (institutional reform and coordination with macro-economic policy).

Source: After World Bank, 1993

The World Bank (1993) distinguishes three stages in the evolution of its housing policies through two decades. The first decade of Bank policy focused primarily on sites-and-services and upgrading projects; the emphasis in the second gradually shifted to housing finance development; and recently there has been a third gradual shift to "housing policy development" (World Bank, 1993:52). Some of the key dimensions of the evolution of the Bank's housing policies are summarized in Table A1.1.

Sites-and-services and upgrading projects signalled the first fundamental shift in housing policy in the post war years—from total housing provision to public assistance in private housing construction. The shift was based on the realization that, in most Southern countries, provision of enough high-standard housing to meet urban needs required massive subsidies that most governments were either unable or unwilling to afford; that conventional housing produced by the private sector was unaffordable for most urban dwellers; that low-income households were building affordable housing through an evolutionary process; and that providing tenure security and basic infrastructure services motivated households themselves to invest their savings, labour and management skills in housing. Sites-and-services and upgrading projects sought to translate these observations into pragmatic solutions. Conceived as experimental demonstration projects, the objectives of these projects were threefold: the provision of affordable adequate housing for

low-income households; cost recovery from beneficiaries resulting in the elimination of public subsidies; and replicability of such projects by the private sector (World Bank, 1993).

While the first objective of these projects, provision of low-cost housing units, was broadly achieved, the great majority of projects realized neither the second nor the third objectives. Studies on subsidies in sites-and-services projects observed substantial interest-rate subsidies and poor cost recovery. Conversely, upgrading projects were able to satisfy the replicability criterion, and to distribute subsidies more widely to the urban poor. Loans for upgrading projects, although smaller and more difficult to administer than housing finance loans, will thus remain a critical component of Bank lending in the shelter sector for years to come (World Bank, 1993).

Pugh (1994b) distinguishes three phases of the World Bank's theory of housing. Phase I (1972-83) emphasized a neoliberalist user-pays principle in affordability and cost recovery in sites and services and upgrading projects. Phase II (1983-87) focused on the development and utilization of housing finance systems to expand housing supplies. Phase III (from 1987) places central and explicit significance on political economy. The overall object is to promote liberalism (enablement) in housing, relying dominantly on orthodoxies from economics, but with regard for some institutionally-loaded reform and social purposes. Parallel to this general aim is a more pragmatic one of extending the GSS statements on enablement and indicating to the South the conditionalities which can be expected to be attached to Bank funding and its policy preferences.

Alternatively, Burgess (1992) identifies four main phases in the evolution of World Bank housing policies since 1972. In the first phase (1972-75) emphasized, almost exclusively, sites-and-services; in the second (1976-79) attention shifted towards upgrading in the form of integrated urban development projects, with sites-and-services projects to facilitate de-densification. The concentration on upgrading in the third phase (1979-84) was complemented by attempts to stimulate labour intensive employment activities and community organization and participation. The focus in the current phase has been almost entirely on upgrading, and 'programme' rather than 'project' lending—the goals of RWG have been eclipsed by those of 'structural adjustment lending' (Burgess, 1992:82).

A1.5.2 Lessons Learned by the World Bank

Several lessons have been learned by the Bank through experience in working with Southern governments over the past two decades (World Bank, 1993):

- *The macroeconomic and regulatory environment is important.* Projects that have failed to address the broad regulatory, institutional, and economic environment have had a limited impact on overall housing conditions. Linkages between the housing sector and the macroeconomy are thus being given greater prominence.

- *The informal housing sector has a significant contribution to make.* Slums and informal settlements, once perceived as symptoms of a dysfunctional land and housing market, are now recognized as an important submarket.
- *Projects have limited impact.* A largely successful record notwithstanding, Bank assistance to specific projects, through sites-and-services, upgrading, or housing finance development, has usually been too small to significantly affect the housing sector as a whole. Housing projects, especially investment projects designed to improve the housing conditions of a limited number of beneficiaries, without a related and significant contribution to housing policy reform and overall housing sector performance, are no longer justifiable.
- *Attention should continue to shift to the housing sector as a whole.* Most urban housing continues to be produced without government-assistance. Government-provided housing or housing services or high profile multipurpose housing agencies can no longer be the focus of Bank assistance, if they detract attention from regulatory reform and concern with the housing sector as a whole.
- *Emphasis should continue to shift from projects to institutional reform.* Attention needs to focus more directly on policy, regulatory, and institutional reforms, and to link projects to such reforms.
- *A variety of approaches is needed.* Given the varied typology of countries requiring housing assistance, policy reforms and institutional development will be supported by the Bank through diverse lending operations.
- *Past emphasis of Bank housing lending on the poor is important and should continue.* Future lending should support policy reform and specific programs that directly benefit the poor, and also those that create favourable overall market conditions likely to indirectly benefit the poor.

A1.5.3 World Bank Policy for Urban Development and the "Brown Agenda"

The World Bank first financed urban development projects in 1972; it has, however, addressed specific aspects of the 'brown agenda' through sectoral lending policies for longer. Urban loans initially supported the development of site-and-services projects and upgrading; sector lending has long concentrated on water, sanitation, solid waste management and industrial pollution. But until recently, there was little or no conscious effort to better urban environmental quality by integrating sectoral interventions and linking them to urban development activities. This situation has changed radically. The past several years have witnessed conceptual, substantive and institutional changes at the Bank involving a fundamental shift at the intersection of urban development and environmental management—from marginalizing to actively embracing the 'brown agenda' (Leitmann, 1994)⁶³ The UNCED Earth Summit (Rio de Janeiro, 1992), where

⁶³Leitmann (1994:119-120) holds that to comprehend the revolutionary shift towards addressing the environmental problems in the South, it is necessary to examine the extent to which the Bank has "put its money where its mouth is". He thus presents information on existent and planned lending operations that constitute the bulk of the organization's work. He further gives a 'snapshot' presentation on the status of projects, programmes, policies and research which focus on the brown agenda to give one a sense of the depth and breadth of fundamental change at the Bank.

cities extended the environmental debate to focus attention on urban priorities, represented a significant breakthrough. There was broad-based consensus that the South's growing urban populations require attention, and their primary concern is the 'brown agenda' (Leitmann, 1993).

A1.5.3.1 The Brown Agenda

Cities are the engines of economic development in the South,⁶⁴ but the environmental implications of such growth need to be fully considered. Rapid urbanization, if ignored, can compromise environmental quality, human health and urban productivity. The most immediate and critical problems confronting Southern cities are the health hazards deriving from inadequate water, sanitation, drainage and solid waste services; poor urban and industrial waste management; air pollution; accidents linked to congestion and crowding; occupation and degradation of marginal and sensitive lands; and the inter-relationships between these problems.⁶⁵ This aggregation of problems, which collectively constitute the 'brown agenda', disproportionately affects the urban poor, who are most affected by ill-health, lower productivity, reduced incomes, and lowered quality of life. While the brown agenda is generally recognized as a universal priority in the South, individual cities may also face several of the 'green' issues.⁶⁶ It is imperative, therefore, that cities identify specific priorities, policies, and actions required to address the most immediate concerns (Bartone *et al.*, 1994; Leitmann *et al.*, 1992).

The brown agenda issues also have reference in the 'new agenda' reforms at the levels of urban economic development and urban governance (Pugh, 1996a). The challenge of rapid urbanization will be to sustain economic development while resolving the associated environmental and social equity problems. Addressing these problems presents a singular opportunity to better health and living conditions while increasing macroeconomic performance in rapidly growing Southern cities. In addressing the 'brown agenda', policy makers and planners will need to incorporate diverse preventive and remedial measures in response to the complex issues of rapid urbanization, productivity, poverty and environment (Leitmann *et al.*, 1992).

A1.6 The Continuum of United Nations Conferences and Evolution of United Nations Agencies' Principles, Strategies and Programmes Relating to Human Settlements

Just as the world has transformed since 1976 when Habitat: United Nations Conference on Human Settlements was convened, experience has altered ideas and approaches to improving

⁶⁴Cities make cardinal contributions to economic growth: approximately 60% of the GNP of the South is produced in urban areas.

⁶⁵The universal urban problems in the South identified by Juppenlatz (1991) include: environmental degradation, inadequate shelter, inadequate infrastructure in terms of water supply, sewage disposal, stormwater drainage, refuse collection, power supply, roadways, etc., along with the problems of unemployment.

⁶⁶The "green" issues include the depletion of water and forest resources, inefficient transport systems and energy utilization, the degradation of environmentally fragile lands, and the occupation of areas liable to natural hazards (Bartone *et al.*, 1994). In the South, brown agenda issues (e.g., salubrious urban living areas, pollution) frequently overlap with the green agenda issues (e.g., conservation of species) (Pugh, 1996a).

living conditions in human settlements. The changes in human settlements strategies are in many respects a response to demographic, economic, political, technological and social changes over the past two decades.⁶⁷ In the context of these changes, the dominant principles, strategies and programmes for human settlements development have moved towards human rights, democracy, decentralization of government, public-private partnership, people's participation, women's empowerment, and sustainability (UNCHS, 1995a).

The fundamental goals of alleviating poverty, ensuring human rights, encouraging social interaction and community self-help, and improving human settlements—particularly in terms of shelter, potable water, waste disposal, and public health—have dominated the United Nations since Vancouver. Most of the principles, policies and programmes called for in the Vancouver Declaration and Action Plan are still valid and have been expanded and reinforced in line with changed global economic, social and environmental conditions and perspectives. Although fewer of the Recommendations of Habitat I have been implemented than might have been wanted, notable progress has nevertheless been made (Okpala, 1996; UNCHS, 1995a). Breakthrough experiences directly related to UN agency activities include the International Year of Shelter for the Homeless, the Global Strategy for Shelter to the Year 2000, the Urban Management Programme, the Sustainable Cities Programme, the Indicators Programme and the Habitat Agenda.

A1.6.1 Habitat: United Nations Conference on Human Settlements

Convened in 1976 as a result of the concern over the prevailing condition of human settlements, particularly in the South, the Vancouver Conference drew attention to the unacceptability of the circumstances of vast numbers of people and noted that, unless positive action was taken at national and international levels to the situation, these conditions were likely to be further aggravated. The Conference recognized that, as human settlements' conditions largely determine the quality of life, their improvement is fundamental to the satisfaction of basic needs, such as housing, employment, health services and education.

The Conference accented the need for policy to focus on the central role of human resources as an agent for development, and articulated the following recommendations:⁶⁸

- Planning and planners should be brought into close contact with the people, especially with respect to the expressed aspirations of the poor and their potential for self-determination.

⁶⁷The major changes identified by UNCHS (1995) include: a doubling of the world population from 3 to 6 billion; an even more rapid increase of the urban population, at a rate 2.5 times faster than rural areas; an unabated increase in the proportion of people below poverty levels despite a vast increases in national GNPs and wealth in some countries; and accelerated environmental degradation.

⁶⁸ The recommendations cited have been paraphrased and edited for reasons of brevity by Rodell and Skinner (1983).

- Standards for shelter, infrastructure and services should be based on the felt needs and priorities of the population.
- Legislative, institutional and financial measures should be reorientated to facilitate people's involvement in meeting their own needs for social services.
- Public participation is a right of everyone and special efforts should be made to expand and strengthen the role of community organizations, workers' organizations, tenants' and neighbourhood organizations.
- Communities should be involved in the planning, implementation and management of neighbourhood schemes.

Since Habitat, it has become apparent that the general orientation embodied in these policies is not universally practical (Rodell and Skinner, 1983)

A1.6.2 The International Year of Shelter for the Homeless A(IYSH)

Cognizant that, after starvation, homelessness is the worst deprivation sufferable by humans, confronting over 100 million people worldwide, the General Assembly of the United Nations declared 1987 the International Year of Shelter for the Homeless (IYSH) (Hutton, 1988).⁶⁹ IYSH aimed at addressing the predicament of both the multitudes without shelter and those rendered homeless by natural and man-made disasters. It further highlighted the plight of innumerable households living in inadequate housing (Cox, 1986).⁷⁰ IYSH sought to stimulate national and international reassessment of the problems of inadequate shelter and homelessness, emphasizing modes of:

- securing political commitment to the improvement of the shelter and neighbourhoods of the poor and disadvantaged, and to the provision of shelter for the homeless, particularly in the South, as a matter of priority;
- consolidating and sharing knowledge and relevant experience in order to provide a full range of tested and practical alternatives for improving the shelter and neighbourhoods of the poor and disadvantaged and providing shelter for the homeless;
- developing and testing new approaches to assist directly and augment the present efforts of the homeless, poor and disadvantaged to secure their own shelter and in order to provide a basis for new national policies and strategies for improving the shelter and neighbourhoods of the poor and disadvantaged by the year 2000;

⁶⁹The term 1982-1987 was designated a period of national and international programmes of shelter for the homeless, which culminated in the observance of the IYSH (Okpala, 1996).

⁷⁰ This included households whose dwellings do not meet basic standards; which provide inadequate protection from the elements; have no access to safe water and sanitation; do not provide for secure tenure and personal safety; are distant from employment opportunities, health care and education; and cost more than households can readily afford (Cox, 1986).

A strategic principle of the IYSH was that success would depend largely on national action, with UNCHS acting as a catalyst to instigate understanding, involvement and action among all actors in the housing process, especially the poor themselves, who demonstrate tremendous resilience, abilities, and innovation in creating and improving their own shelter (Cox, 1986). This implied the following:

- Most housing in the South would continue to be built by people themselves.
- The major resource available in many countries would continue to be the human resource which could, however, be misemployed if undertaken outside the mainstream of national development policies and programmes. Hence the emphasis on Government as an enabler of housing by focusing its attention on access to land, secure tenure, improved legislation, adequate water supply and sanitation, access to financing, a pragmatic approach to informal settlements, etc.
- As most development programmes precluded the participation of the poor in any of the existing formal mechanisms to provide housing, a redefinition of what constitutes the economy and a reformulation of indices used for measuring economic development was required. A proper conception of poverty alleviation and improvement of the quality of the natural and built environment was necessary; these could be considered as both objectives and measures of economic development.

IYSH promoted a notable range of new legislation, projects, and international and national initiatives on the part of international agencies, central and local governments, NGOs, and communities. It was recognized that there was need to improve global mechanisms for monitoring trends and developments in this area, to analyze profitable experiences, to advance knowledge of effectual approaches and solutions, and to intensify national and international efforts in support of the poor whose shelter conditions could and had to be improved. Thus, the proposal to launch a global strategy for shelter to the year 2000 was endorsed (UNCHS, 1990).

1.6.3 The Global Strategy for Shelter to the Year 2000

Endorsed in 1988, the primary goal of the Global Strategy for Shelter to the Year 2000 (GSS) is to facilitate "adequate shelter for all" ⁷¹ by the year 2000.⁷² The right to adequate shelter is

⁷¹The concept of 'adequate shelter' is the same as that adopted for IYSH: "Adequate shelter means more than a roof over one's head: it means adequate privacy, adequate space, adequate security, adequate lighting and ventilation, adequate basic infrastructure and adequate location with regard to work and basic facilities - all at reasonable cost" (UNCHS, 1990:4)

⁷²Korboe (1992) mentions the preponderance of slogans and policy documents with the year 2000 as the date by which solutions to housing concerns in the South will be resolved. But as Pugh (1997) remarks, as an imperative to provide adequate shelter for all by 2000, the GSS seemed optimistic considering the realities in some informal settlements during the mid-1980s.

universally recognized and constitutes the basis for national obligations to meet shelter needs.⁷³ Individual countries are able to adapt the GSS according to national parameters and goals.

Informed by the experiences of IYSH, the GSS aims to improve global shelter conditions by the creation of a legal, institutional and regulatory environment which can facilitate the construction and improvement of housing by all social groups, but especially by and for the poor.⁷⁴ The GSS incorporates much of the thinking on housing developed by the World Bank and international agencies during the late 1970s and 1980s (Urban Edge, 1988).

The adoption of the GSS formalized the transition to an 'enabling approach', whereby the full potential and resources of all the actors in the shelter production and improvement process are to be mobilized:⁷⁵ the ultimate decision on how to house themselves is, however, left to the people concerned. The implication is not a reduction of governmental responsibility, but rather a reallocation of public activities and human, physical and financial resources. Thus, governments should serve as 'enablers' in the housing sector—withdrawing from their role as providers of housing and playing a more substantial role in facilitating new construction by creating an appropriate regulatory environment and ensuring the availability of housing finance. An enabling strategy should also be seen as an essential constituent in the process of sustainable development, as it leads to the full mobilization of all potential indigenous resources (UNCHS, 1991d; Urban Edge, 1988a). Pugh (1995:383) sees it thus:

Enablement is . . . providing the legislative, institutional and financial framework whereby entrepreneurship in the private sector, in community-based initiatives and among individuals can effectively develop the economy and the urban sector. The advocacy and application of enablement is a key part of the 'new political economy' (NPE), a theory of political economy which has much relevance to current urban policies among international aid agencies and governments in developing countries.⁷⁶

⁷³The right to adequate shelter was reaffirmed by the General Assembly in its resolution 42/146 of 7 December 1987—"Realization of the right to adequate housing" (UNCHS, 1990:8). However, the debate in the run-up to Habitat II centred around the terminology used in international human rights instruments. Certain countries, most notably the United States, argued that the 'right to an adequate standard of living', as expressed in article 25 of the Universal Declaration of Human Rights, did not imply a separate 'right to adequate housing'. However, an expert group convened to review and clarify the legal status of the right to adequate housing concluded that the right to adequate housing is recognized, albeit not always identically formulated, in several UN instruments Coghlan (1996). (See also Appendix 2.1)

⁷⁴IYSH confirmed the need to intensify national and international endeavours to deliver and improve shelter for all, with particular emphasis on the poor and disadvantaged. In like manner, the GSS should be seen as yet another opportunity for the South to tackle the need of the poor in an action-oriented approach based on global interaction (Hammond, 1991).

⁷⁵In the 'enabling approach', as defined in the GSS, development efforts are based on constructive partnerships between all actors of development: government, private sector (both formal and informal) non-governmental organizations and institutions, and individual communities. The role of government is redefined as that of a facilitating and coordinating force based on consultation, accountability, well-trained and motivated professional cadres and community participation (ILO, 1993).

⁷⁶See also Pugh (1994b) for further exposition, explanation and criticism of the concept of enablement within the broader concepts of liberalism as a political economy, the post-1970 globalization of economic conditions, and the implications of the housing reforms of the 1990s.

A1.6.4 United Nations Conference on Environment and Development (UNCED): Rio Declaration on Environment and Development

The United Nations Conference on Environment and Development (UNCED), convened in 1992, reaffirmed the Declaration of the United Nations Conference on the Human Environment adopted in 1972. UNCED yielded the Rio Declaration and Agenda 21, the Programme of Action for Sustainable Development, which recognized that human settlements, and especially cities, are both the source of numerous global environmental problems and a key to their remediation. UNCED likewise recognized cities as generators of economic and social development, and also as a central focus of environmental concerns (UNCHS, 1995a).

UNCED proclaimed 27 principles, including:

- The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations (Principle 3).
- All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world (Principle 5).
- Environmental issues are best handled with the participation of all concerned citizens, at the relevant level . . . (Principle 10)
- . . . Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply . . . (Principle 11).
- Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development (Principle 20).
- Indigenous people and their communities . . . have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in sustainable development (Principle 22).

A1.6.4.1 Sustainability

'Sustainability' was first pronounced a universal goal at UNCED in 1992; since then 'sustainable development' has been commonly used (UNCHS, 1995). While significant change has occurred in the conceptual analysis and definition of the idea of sustainability, there is some consensus that sustainability rests on three pillars: 'economic', 'social' and 'environmental sustainability' (Pugh, 1996; Tipple *et al.*, 1994). Thus,

economic sustainability is understood as generating a maximum flow of economic welfare whilst maintaining the stock of assets, including environmental assets; social sustainability is people oriented, identified with the stability and cultural diversity of social systems; and environmental sustainability refers to the preservation, resilience and the adaptation of physical and biological systems (Pugh, 1996:1)

From some perspectives the notion of sustainability is not simply a matter of analytical definition and conceptualization. Rather, it is interrelated to general and operating principles of political economy, to spheres of application including 'green' and 'brown' agendas, and to processes of social and intellectual change (Pugh, 1996).

A1.6.5 Agenda 21: Promoting Sustainable Human Development

Agenda 21 constitutes the working document adopted by UNCED, and comprises 40 chapters divided into four broad sections: social and economic dimensions; conservation and management of resources for development; strengthening the role of major groups; and means of implementation. Like the GSS, Agenda 21 endorses the philosophy that, if policies affecting the shelter sector are favourable, the sector contributes to economic development, and the gains to economic development are translated into sectoral developments (Hardoy *et al.*, 1992; UNCHS/ILO, 1995).

The call for sustainable development in Agenda 21 is not solely a call for environmental protection. Rather, sustainable development implies a new concept of economic growth—one that provides equity and opportunity for all, without further destroying the world's natural resources and compromising its carrying capacity.⁷⁷ Agenda 21 imparts that sustainable development is a process by which economic, social, environmental, fiscal, trade, energy, agricultural and industrial and technological policies are designed and are mutually supportive so as to facilitate economically, socially and environmentally sustainable development (UNCHS, 1994b). Agenda 21 further calls for improved human settlements management and a sustainable construction industry, underlining the correlation between employment opportunities to relieve poverty and housing provision to ameliorate living conditions.⁷⁸ The multiple goals of sustainable development as applied to cities are summarized in Figure A1.3.

⁷⁷ One of the most widely quoted definitions of the goal of sustainable development is that of the World Commission on Environment and Development (1987:43), which is to meet "the needs of present generations without compromising the ability of future generations to meet their own needs".

⁷⁸ UNCHS/ILO (1995) state that just as shelter or housing are defined as more than just the structure in which people live, so living conditions encompass more than just the dwelling unit. UNCHS (1987a:5), on the other hand, emphasizes "settlement conditions" rather than "living conditions", contending the latter expression generally applies to the personal environment, while: "settlement conditions extend to all those components of the physical environment with which an individual or a community comes into contact and which are used on a regular basis for the whole range of human activities—the individual dwelling and its related services, the dwellings immediate surroundings, community facilities, transportation and communication networks, and so on."

Figure A1.3: The multiple goals of sustainable development as applied to cities

Meeting the needs of the present.without compromising the ability of future generations to meet their own needs
<ul style="list-style-type: none"> • Economic needs: includes access to an adequate livelihood or productive assets; also economic security when unemployed, ill, disabled or otherwise unable to secure a livelihood. • Social, cultural and health needs: include a shelter which is affordable, healthy, safe and secure, within a neighbourhood with provision for piped water, sanitation, drainage, transport, healthcare, education and child development. Also a home, workplace and living environment protected from environmental hazards. • Political needs: includes freedom to participate in national and local politics and in decisions regarding management and development of one's home and neighbourhood—within a broader framework which ensures respect for civil and political rights and the implementation of environmental legislation. 	<ul style="list-style-type: none"> • Minimizing use of waste or non renewable resources: includes minimizing the consumption of fossil fuels in housing, commerce, industry and transport plus substituting renewable sources where feasible. • Sustainable use of renewable resources: cities drawing on freshwater resources at levels which can be sustained; keeping to a sustainable ecological footprint in terms of land area on which producers and consumers in any city draw for agricultural crops, wood products and biomass fuels. • Wastes from cities keeping within absorptive capacities of local and global sinks: including renewable sinks (e.g. capacity of a river to break down biodegradable wastes without ecological degradation) and non-renewable sinks (for persistent chemicals; including greenhouse gases, stratospheric ozone-depleting chemicals and many pesticides).

Source: After Mitlin and Satterthwaite (1996) and UNCHS (1996a)

A1.6.5.1 Chapter 7 of Agenda 21

The discourse in Chapter 7 recognizes the relevance of multi-objective and multi-institutional realities in human settlements, and accordingly promotes the notions of innovative approaches in urban planning and economic development, institutional partnerships, and citizen participation (Pugh, 1996b). Chapter 7 reiterates the overall objective of improving the social, economic and environmental quality of human settlements and the living and working environments of all people, particularly the poor. Such improvement should be based on technical cooperation activities, partnerships among the public, private and community sectors, and participation decision-making by community and special interest groups. Chapter 7 elaborates eight programme areas which should form the central principles of national settlement strategies, and from among which countries should establish priorities consonant with national plans and objectives:

- Providing adequate shelter for all;
- Improving human settlement management;
- Promoting sustainable land-use planning and management;
- Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid waste management;
- Promoting sustainable energy and transport systems in human settlements;
- Promoting human settlement planning and management in disaster-prone areas;

- Promoting sustainable construction industry activities;
- Promoting human resources development and capacity for human settlement development.

Throughout, Chapter 7's programmes advocate an enabling approach, as well as cooperation between public, private and community partners in the pursuit of sustainable development, as no model of development is ultimately sustainable without the support of the people. Countries should, thus, make appropriate provision to monitor the impact of their strategies on marginalized and disenfranchised groups (UNCHS, 1994b).

A1.6.6 The Urban Management Programme (UMP)

The Urban Management Programme (UMP), which originated in 1986 as a global technical co-operation programme, represents a major collaborative approach of the international community: UNCHS (Habitat) is the executing agency; the World Bank is the associated agency; UNDP provides core funding and overall monitoring; bilateral donors, multilateral agencies (e.g. WHO) and NGOs provide additional external support. The long-term objective of the UMP is to strengthen the contributions by cities in the South to human development, including economic growth, social development, environmental improvement and the alleviation of poverty (Clarke, 1991; UMP, 1991; UNCHS, 1994; 1995). Recognizing the necessity of a multi-sectoral approach to urban development and encouraging sustainability in improved urban conditions, the UMP develops and promotes appropriate policies and tools, provides technical co-operation, and assists in the implementation of innovative programmes in a number of substantive areas.

Phase 1 of the UMP (1986-91) was devoted to applied research that built up an understanding of the processes and problems of urban management, and initially focused on three critical issues: urban land management, municipal finance and administration, and infrastructure. A fourth component—the urban environment was added in 1990, and in 1991 a fifth one—the alleviation of poverty. Various activities, ranging from the review of basic theoretical constructs to the preparation of case studies, were undertaken by UMP to identify best practices in the field. The principal issues that emerged from the examination of these case studies have been communicated in a series of policy framework papers, discussion papers and implementation tools (UMP, 1990; 1991).⁷⁹

In addressing the following priority topic areas, cardinal lessons have been learned:

⁷⁹The Programme has several publications covering the revision and analysis of urban problems and their causes and reviewing new approaches and tools that can be utilized in resolving them (UNCHS, 1996). Policy review studies to assess and revise institutional arrangements, inappropriate regulations, fiscal operations and other interventions are among the significant outputs from the Programme. A number of reviews on land issues are presently available, as are publications on mapping and record keeping, and environmental assessment and management (Tipple *et al.*, 1994).

- *Urban Land Management.* Recognizing the limitations of traditional approaches to urban land management, including master planning and large-scale acquisition and development, the UMP has identified greater market efficiency as the best method of meeting the enormous demand for urban land.
- *Municipal Finance and Administration.* In addressing questions of resource mobilization to finance municipal services and the allocation of municipal resources that are more responsive to consumer demand, the UMP has focused partially on procedural solutions—e.g., reviewing taxation procedures and defining areas of reform in municipal accounting systems
- *Infrastructure.* Recognizing that cities' incapacity to provide and maintain adequate infrastructure severely constrains urban productivity, the UMP has focused on three aspects of infrastructure: planning and financing; operations and maintenance; and management.
- *Urban Environment.* Having confirmed that the fundamental causes of urban environmental degradation and resultant costs to public health and urban productivity originate from inappropriate economic policies, deficient regulatory and institutional frameworks, weak management capacities, inadequate investment in pollution control, inadequate cost recovery, and insufficient political will and public awareness, the UMP is working toward identifying appropriate policy interventions, planning and management approaches, and institutional arrangements.
- *Alleviation of Urban Poverty.* The UMP proposes to address urban poverty alleviation by: (i) introducing a demand orientation to the issue;⁸⁰ (ii) encouraging policy reviews and regulatory audits to determine and redress areas in which artificial impediments, institutional deficiencies, and inappropriate fiscal operations promote inequity, inefficiency, and ineffectiveness; (iii) helping to define the most effectual roles and policies for government, the private sector, NGOs and CBOs in poverty alleviation.

The UMP catalyzes national and municipal dialogue on policy and programme operations in these vital programme areas (UNCHS, 1994). But with respect to Phase 1 of the UMP, Stren (1993:137) contends:

While comparative and conceptual work has taken place within the sectors, the overall concept of urban management has not been addressed head on. Is urban management an objective, a process, or a structure? The conflation of a variety of goals and interpretations into a single concept can only hinder its effective dissemination and eventual acceptance and institutionalization.

Phase Two of the UMP (1991-1997) is a less ambitious attempt to raise awareness levels, and to promote the quality of urban research and the orientation to more practicable policy alternatives.

⁸⁰By bringing a demand orientation to the forefront of its approach, the UMP underlines a variant perspective of urban poverty. A demand orientation is unlikely to disclose that any particular urban service is inconsequential, but rather that the priority, mix, and timing of urban services may be more effectively responded to by creating conditions for the delivery of services in effectively functioning markets. Moreover, through restructuring service delivery along more market oriented lines the urban poor will, inevitably, become more involved in the planning, delivery, and management of urban services (UNCHS, 1994).

Table A1.2: Priority issues in land management under the New Urban Programme

UMP SUBJECT AREA	EMERGING 'PRIORITY' ISSUES
1. Municipal finance	Central-local relationships (allocation and functions, financial flows, access to credit). Assignment and administration of revenue sources (including user charges). Municipal organization and administration. Community participation, the informal sector and responsive urban management.
2. Infrastructure	The linkages between urban infrastructure and service performance and macro-economy. Administrative, financial and technical means to improve infrastructure maintenance.
3. Urban land management	Urban land and related markets: identifying and rectifying constraints. Institutions and instruments to support land markets: The role of land registration, information management, urban planning and informal land management and administrative practices.
4. The urban environment	Improving urban waste management capacity and operational efficiency. The legal and regulatory framework for environmental protection. Assignment of jurisdiction for legislation, monitoring and enforcement. Use of economic instruments as alternatives to command and control. Environmental implications of land use control and property rights.

Source: Jones and Ward (1994b:38)

The 'New' Urban Management Programme (NUMP) signals the end of 'urban' projects as they have come to be known and understood (i.e., direct hands-on intervention); the primary concerns are now overall public administration. The new focus expedites an evolution within the Bank for policy emphasis to concentrate on support for national housing finance systems, urban management and local government revenue generation (Jones and Ward, 1994a; 1994b), and a move away from the Bank's past "urban product" toward new forms of urban assistance (Urban Edge, 1985:1) The major emphasis in the NUMP is on the identification of new paradigms for land management, resulting from a growing understanding of the interrelationships of land management, urban development and national economic growth, and recognition of the fact that land is the essential element in urban growth (Clarke, 1991).⁸¹

The priority issues defined by the Bank under the land management section of the NUMP are summarized in Table A1.2. Jones and Ward (1994b:46), however, contend that there is limited scope within the NUMP for state intervention to enable the policies advocated under the NUMP to succeed; thus, "the NUMP is less of a programme and more an ideology."

A1.6.7 Sustainable Cities Programme (SCP)

The Sustainable Cities Programme (SCP), launched in 1990, is a joint UNCHS/UNEP initiative, and constitutes the operational arm of the UMP. The ultimate objective of the SCP is to promote sustainable growth and development in cities. Its principal role is, thus, to improve the environmental management and planning capacity of municipal authorities and their partners in

⁸¹See Jones and Ward (1994b) for a comprehensive statement on the 'New' Urban Management Programme, and whether it does indeed represent a paradigm shift or is simply a continuity of earlier policy.

the public, private and community sectors in a manner that will be self-sustaining on termination of SCP support. It purposes to assist municipal authorities prioritize city-level environmental issues and enable them to address the concerns. The object is to promote good practice in planning and managing the urban environment and the potential impacts of urban growth on the surrounding region⁸² (Tipple *et al.*, 1994; UNCHS, 1994a; 1996).

SCP comprises two levels of activity (Tipple *et al.*, 1994):

- at the city level, SCP identifies priority environmental issues and principal actors whose cooperation is essential, produces action plans on political, administrative and technical levels, and supports implementation of action plans;
- at the programme level, SCP mobilises requisite expertise, technology, and financial resources, and promotes the exchange of know-how among cities, employing experience to advance the corporate expertise in urban management and the environment.

The SCP has initiated development projects in several cities aimed at involving both the public and private sectors.⁸³ The projects result in strengthened system-wide urban management capacities to mobilize all the public and private-sector actors whose cooperation is necessary for successful and effectual urban management, broad-based environmental strategies, and priority capital investment projects. These activities give actual operational expression to Agenda 21 at the local level. As a global programme, SCP promotes the importation of expertise between cities around the world. As an inter-organisational endeavour, SCP advances the pooling of pertinent know-how and mobilises technical and financial resources from both bilateral and multilateral sources (UNCHS, 1994a; 1994b; 1996; Bartone *et al.*, 1994).

A1.6.8 The Community Management Programme (CMP)

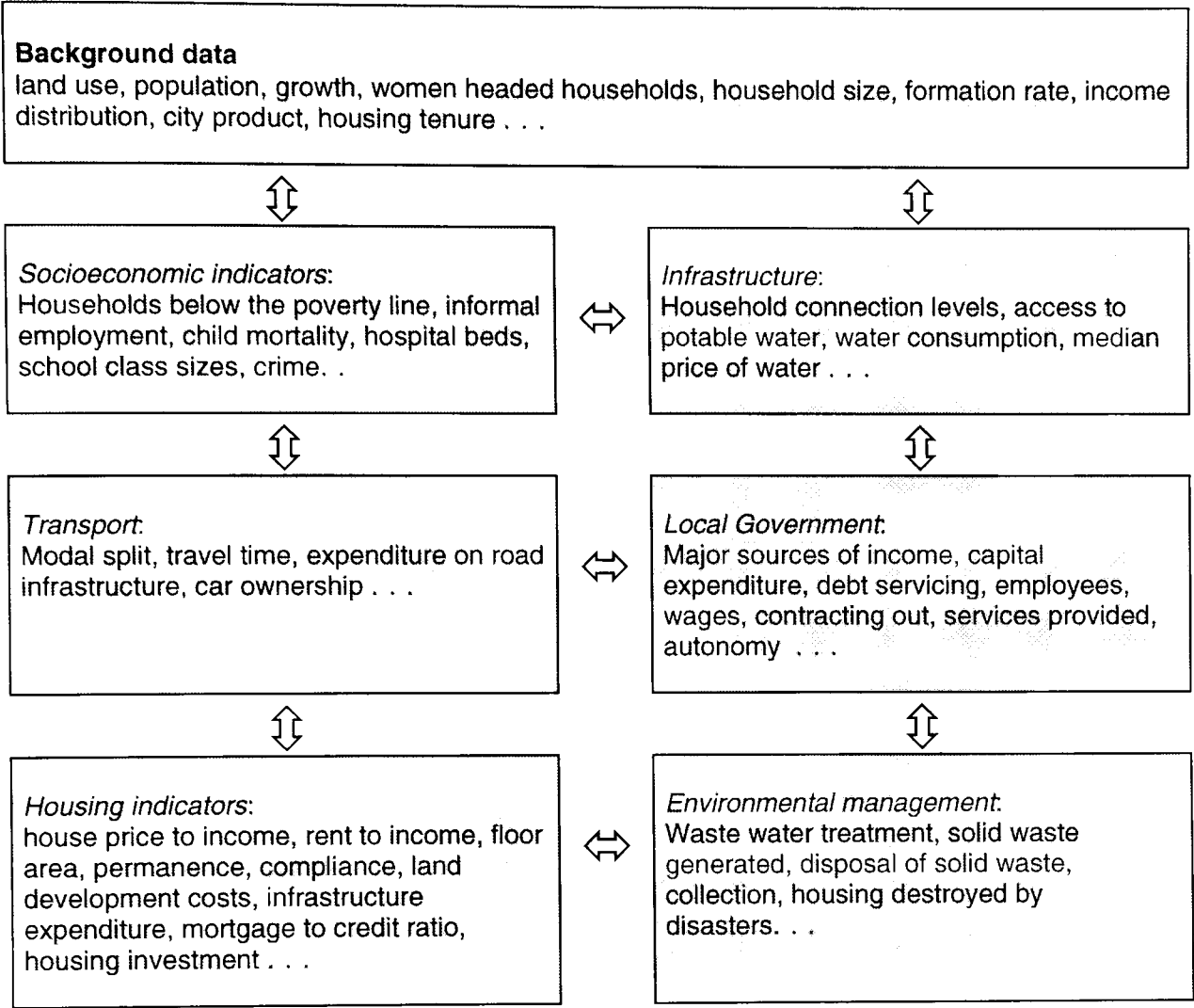
Inaugurated in September 1991, the Community Management Programme (CMP) aims to reorientate local-government policies and practices in the provision of housing, community services and facilities towards a participatory approach through the strengthening of community organization, management and building skills. It is purposed to contribute to the establishment of sustainable development in low-income settlements, with emphasis on the creation of viable and replicable strategies for the involvement of communities in the provision of services (UNCHS, 1990a).⁸⁴

⁸²See Hardoy and Satterthwaite (1984) for a discussion of the three geographic scales at which environmental problems arise as cities grow in size and population: the wider region; the city; and the home and its surrounds.

⁸³City level activities at various stages in the project cycle are underway in several cities including Accra, Concepcion, Dar es Salaam, Guayaquil, Ibadan, Ismailia, Jakarta, Katowice, Madras, and Tunis.

⁸⁴CMP commenced operations in four countries in early 1992: Costa Rica, Ecuador, Ghana and Uganda.

Figure A1.4 : UNCHS Indicators Programme—Key indicators



A1.6.9 UNCHS (Habitat) Housing Indicators Programme

The Housing Indicators Programme has developed apposite, measurable, and reliable indicators, linked to principles of economic, social and environmental sustainability, that are easily applicable using readily available data. A cost effective national monitoring process of key shelter indicators was first developed in 1989 to evaluate progress of the GSS. These were extended in 1994 to include key urban indicators which enable governments, the private sector, CBOs and residents to monitor urban and shelter conditions and provide criteria for evaluating and developing policies.

Figure A1.4 shows key indicators concerning urban and housing conditions for the development of government policy and strategies, as well as monitoring and development. The indicators focus on important economic and social conditions affecting cities, and the impact of related policy and practice. Consistent use of key indicators facilitates the measurement and comparison of the performance of the urban and shelter sectors in cities, countries and regions around the world.

A1.6.10 The Second United Nations Conference on Human Settlements (Habitat II)

The Second United Nations Conference on Human Settlements (Habitat II)⁸⁵ was convened in Istanbul in 1996, 20 years after the first Habitat Conference, for the purpose of addressing two themes of equal global importance: "Adequate shelter for all" and "Sustainable human settlements development in an urbanizing world" (UNCHS, n.d.). These two themes encapsulate the critical issues of human settlements, which require national policy and international attention, and can be furthered at the local level through an enabling process in which individuals, households and their communities play a central role.⁸⁶

A1.6.11 The Habitat Agenda

In light of the experience since the Vancouver Conference, Habitat II reaffirms the results from relevant recent world conferences⁸⁷ and has developed them into an agenda for human settlements: the Habitat Agenda. As a global call to action at all levels, the Habitat Agenda offers, within a framework of objectives, principles and commitments, a positive vision of sustainable human settlements—where all have adequate shelter, a healthy and safe environment, basic services, and productive and freely chosen employment.

Achieving adequate shelter for all is fundamental to the well-being of over one billion people lacking adequate housing and living in unacceptable conditions of poverty, while sustainable development is critical for the social, economic and environmental viability of human settlements. Recognizing the obligation by governments to enable people to obtain shelter and to protect and improve dwellings and neighbourhoods under the theme of 'Adequate shelter for all', states have committed themselves to:

improving living and working conditions on an equitable and sustainable basis, so that everyone will have adequate shelter that is healthy, safe, secure, accessible and affordable and that includes basic services, facilities and amenities, and will enjoy freedom from discrimination in housing and legal security of tenure.

A further commitment has been made to meet several objectives, including:

⁸⁵The Habitat II Conference was significantly designated the 'City Summit' to highlight the fact that cities and towns will be the dominant forms of human settlements organization in the 21st century. It is estimated that by the turn of the century, half of all people will reside and work in urban areas and that by 2025 almost two-thirds of the world's population will be urban dwellers.

⁸⁶See also Okpala's (1996) viewpoint on the Habitat II Conference.

⁸⁷UNCED—the Earth Summit—produced Agenda 21. At that Conference, the international community agreed on a framework for the sustainable development of human settlements. Each of the other conferences, including the Fourth World Conference on Women (Beijing, 1995), the World Summit for Social Development (Copenhagen, 1995), the International Conference on Population and Development (Cairo, 1995), the Global Conference on the Sustainable Development of Small Island Developing States (Barbados, 1994), the World Conference on Natural Disaster Reduction (Yokohama, 1994), the World Conference on Human Rights (Vienna, 1993), the World Summit for Children (New York, 1990) and the World Conference on Education for All (Jomtien, Thailand, 1990), also addressed important social, economic and environmental issues, including components of the sustainable development agenda, for which successful implementation requires action at the local, national and international levels.

- Ensuring consistency of macroeconomic and shelter policies and strategies in order to support resource mobilization, employment generation, poverty eradication and social integration;
- Providing security of tenure and equal access to land to all, including women and the poor;
- Ensuring transparent, comprehensible and accessible systems in transferring land rights and security of tenure;
- Promoting access to potable water, sanitation and other basic services, facilities and amenities, especially for the poor, women, and vulnerable and disadvantaged groups;
- Promoting non-discriminatory access to efficient, effective and appropriate housing finance, including mobilizing innovative financial and other resources for community development;
- Promoting locally available, appropriate, affordable, safe, efficient and environmentally sound construction methods and technologies, that emphasize optimal use of local human resources, promote energy conservation, and safeguard human health;
- Increasing the supply of affordable housing, including through promoting home ownership and increasing the supply of affordable rental, communal, cooperative and other housing through partnerships among public, private and community initiatives, creating and promoting market-based incentives while giving due respect to the rights of both owners and tenants;
- Promoting the upgrading of existing housing stock through rehabilitation and maintenance and the adequate supply of basic services, facilities and amenities;
- Ensuring legal protection from discrimination in access to shelter and basic services;
- Protecting all people from forced evictions that breach the law, taking human rights into consideration.

To achieve the goal of sustainable human settlements, states are committed to:

developing societies that will make efficient use of resources with the carrying capacity of ecosystems. . . ,and by providing all people, in particular those belonging to vulnerable and disadvantaged groups, with equal opportunities for a healthy, safe and productive life. . . which ensures economic and social development and environmental protection, thereby contributing to the achievement of national sustainable development goals.

Additional objectives states will aim to achieve include:

- Promoting socially integrated and accessible human settlements, opposing exclusionary policies and practices, and respecting all people's rights;
- Creating an enabling international and domestic environment for economic development, social development and environmental protection, that will attract investments, generate employment, contribute to the eradication of poverty and provide revenues for sustainable human settlements development;
- Integrating urban planning and management in relation to housing, transport, employment opportunities, environmental conditions and community facilities;

- Providing adequate and integrated environmental infrastructure in all settlements, with particular emphasis on the poor;
- Promoting the upgrading of informal settlements and urban slums as an expedient and pragmatic solution to the urban shelter deficit;
- Acknowledging, harnessing and enhancing the efforts and potential of productive informal and private sectors in creating sustainable livelihoods and increasing incomes, while providing housing and services for the poor;
- Developing housing that can serve as a functional workplace;
- Promoting education about, and training on environmentally sound technologies, materials and products.

A1.6.12 Settlement Infrastructure and Environment Programme (SIEP)

The Settlement Infrastructure and Environment Programme (SIEP) was launched by UNCHS (Habitat) in July 1992 to assist countries realize the infrastructure related goals of Agenda 21. The programme aims to improve the quality of life of human settlements, especially the quality of life of the urban poor through improved coverage and better access to basic infrastructure services. The programme promotes an integrated, participatory and gender sensitive approach to the management of the local environment by building capacity at the local level and providing governments and communities with pragmatic policy options and planning and implementation tools in critical areas of infrastructure delivery and management (UNCHS, 1996a; 1997a). Focused on Habitat Agenda priorities, the programme addresses capacity building in the following areas (UNCHS, 1997a):

- particularly in low-income settlements;
- provision and management of infrastructure and services;
- services through broad-based partnerships among local governments, other service providers, private sector and community groups (particularly women's groups);
- technologies for sustainable human settlements;
- local environment initiatives.

SIEP is further focused on Agenda 21 priorities, addressing capacity building needs in the following areas (UNCHS, 1996a:309):

- Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid-waste management (Programme area D of Chapter 7 of Agenda 21).
- Water resources management for sustainable urban development (Programme area E of Chapter 18 of Agenda 21).
- Environmentally sound management of solid wastes and sewage (all programmes areas of Chapter 21 of Agenda 21).

- Promoting sustainable energy and transport systems in human settlements (Programme area E of Chapter 7 of Agenda 21).
- Supporting co-operation and capacity-building for the use of environmentally sound technologies for sustainable development of human settlements (Chapter 34 of Agenda 21).
- Reducing health risks from environmental infrastructure deficiencies (Programme area E of Chapter 6 of Agenda 21).

SIEP works in close partnership with and complements other key UNCHS (Habitat) programmes, specifically: the Urban Management Programme, the Sustainable Cities Programme, the Community Development Programme and the Women in Human Settlements Development Programme. Regular consultations with inter-governmental bodies, NGO networks and external support agencies help in orienting the programme activities within the overall framework of the Habitat Agenda (UNCHS, 1997a).

A1.7 Urban Agenda for the 1990s: Critical Issues

The ILO (1993:6) regards the following concerns, each of which is important in its own right, but are all closely interrelated in allowing the South to cope effectually with the transition from rural to urban societies, as being critical in the urban agenda for the 1990s (1993):

- Alleviation of urban poverty by transforming the role of the informal sector and promoting income-generating activities.
- Promotion of enabling and participatory strategies for the provision of urban infrastructure and affordable shelter.
- Protection and regeneration of the urban physical environment, especially in low-income settlements.
- Improvement of urban management, including expansion of local governments' revenue-raising capacity and devolution of authority and responsibility for urban development from central government agencies and ministries to local government and NGOs.
- Utilization of the full complement of human resources in cities to achieve the above, implying public/private partnerships and wider recognition of the role of women.

A1.8 Conclusions Regarding Urbanization in the South

A number of conclusions regarding urbanization in the South can be drawn (Satterthwaite, 1995):

- urban problems in the South are not the result of the population growth rate but rapid change in the absence of political economic systems able to cope with such change—in the sense of demographic, economic, social and political change;

- the long term solution to addressing the problems in cities is building the capacity and competence of central and local governments to address their own problems;
- the processes that are currently building, improving and maintaining cities in the South which exist outside of government and the formal private sector should be supported;
- all the aggregated generalizations about cities and change should be forgotten.

Rapid urban growth is usually associated with intense socio-economic or political change (Payne, 1977). It is improbable that the economic, political and social factors which drive urbanization will stop before a majority of people live in urban areas in most Southern countries (Cairncross *et al.* 1990). Thus, whereas the urban population is stabilized in most Northern countries, its growth in the South will continue well into the next millennium (Towfighi, 1987). Consequently,

... it is time to abandon the notions that urbanization in the developing countries is undesirable, avoidable or, even, reversible. Such beliefs tend only to contribute to policy paralysis when it comes to the urban sector (Ramachandran, 1989:1).

The challenge of rapid urbanization in the South will be to sustain economic growth while solving the environmental and social equity problems which plague the very urban areas which empower the economy (Tipple *et al.*, 1994).

Low-cost urban housing projects supported by the World Bank are designed to reach those much lower in the income distribution than conventional housing programmes, tend to avoid subsidies more successfully and are likely to be more easily replicated to reach a much larger number of poor households.

Appendix Two

QUESTIONNAIRE

2. PLOT AND HOUSE

(1) Has the plot been demarcated ?

Yes 1
No 2

(2) What is the approximate area of the plot (m2)

(3) Are there any other structures on the plot apart from the main house ?

Yes 1
No 2

(4) If yes what are the structures ?

Dwelling unit(s)	(5)	<input type="text"/>
latrine	(6)	<input type="text"/>
Bathroom	(7)	<input type="text"/>
Ablution	(8)	<input type="text"/>
Store	(9)	<input type="text"/>
Other(specify)	(10)	<input type="text"/>

(11) How many rooms are there in this house ?

(12) For what purposes are the rooms used ?

Residential	(13)	<input type="text"/>
Commercial(shop or other retail activity	(14)	<input type="text"/>
Service activity(medical,educational,etc)	(15)	<input type="text"/>
Manufacturing/crafts	(16)	<input type="text"/>
Other(specify)	(17)	<input type="text"/>

(18) How many households live in this house ?

(19) How many have female heads ?

(20) What sex is the landlord/owner ?

Male 1
Female 2
Don't know 3

(21) Does the landlord/owner live in this house ?

Yes 1
No 2

(22) If yes, how many rooms does he/she occupy ?

Which of the following services are available on the plot ?

Water supply	(23)	Yes <input type="text"/> 1 No <input type="text"/> 2	(24)	Shared <input type="text"/> 1 Exclusive <input type="text"/> 2
Non-water borne sanitation	(25)	Yes <input type="text"/> 1 No <input type="text"/> 2	(26)	Shared <input type="text"/> 1 Exclusive <input type="text"/> 2
Water borne sanitation	(27)	Yes <input type="text"/> 1 No <input type="text"/> 2	(28)	Shared <input type="text"/> 1 Exclusive <input type="text"/> 2
Garbage/rubbish disposal	(29)	Yes <input type="text"/> 1 No <input type="text"/> 2	(30)	Shared <input type="text"/> 1 Exclusive <input type="text"/> 2
Surface water drainage	(31)	Yes <input type="text"/> 1 No <input type="text"/> 2	(32)	Shared <input type="text"/> 1 Exclusive <input type="text"/> 2
Electricity supply	(33)	Yes <input type="text"/> 1 No <input type="text"/> 2	(34)	Shared <input type="text"/> 1 Exclusive <input type="text"/> 2

MAJOR MATERIALS

CONDITION

Walls	(35)	Wattle and daub	<div><div></div></div>	1	(36)	Poor	<div><div></div></div>	1
		Brick	<div><div></div></div>	2		Fair	<div><div></div></div>	2
		Quarry stone	<div><div></div></div>	3		Good	<div><div></div></div>	3
		Concrete block	<div><div></div></div>	6				
		Timber	<div><div></div></div>	7				
		Other(specify)	<div><div></div></div>	8				
Roof	(37)	Flattened metal sheets	<div><div></div></div>	1	(38)	Poor	<div><div></div></div>	1
		Corrugated metal sheets	<div><div></div></div>	2		Fair	<div><div></div></div>	2
		Other(specify)	<div><div></div></div>	3		Good	<div><div></div></div>	3

SECONDARY MATERIALS

Walls	(39)	Wattle and daub	<div><div></div></div>	1	(40)	Poor	<div><div></div></div>	1
		Brick	<div><div></div></div>	2		Fair	<div><div></div></div>	2
		Quarry stone	<div><div></div></div>	3		Good	<div><div></div></div>	3
		Concrete block	<div><div></div></div>	6				
		Timber	<div><div></div></div>	7				
		Other(specify)	<div><div></div></div>	8				
Roof	(41)	Flattened metal sheets	<div><div></div></div>	1	(42)	Poor	<div><div></div></div>	1
		Corrugated metal sheets	<div><div></div></div>	2		Fair	<div><div></div></div>	2
		Other(specify)	<div><div></div></div>	3		Good	<div><div></div></div>	3

please indicate if any of the following maintenance works, improvements or other construction works have been undertaken in the plot/on the structure or during the past four (4) years, and if so by whom and who paid for them.

two (2)

Floor	(43)	Concreting	<div><div></div></div>	1	(44)	Landlord	<div><div></div></div>	1	(45)	Landlord	<div><div></div></div>	1
		Screeding	<div><div></div></div>	2		Tenant(s)	<div><div></div></div>	2		Tenant(s)	<div><div></div></div>	2
		Patching up	<div><div></div></div>	3		Other	<div><div></div></div>	3		Other	<div><div></div></div>	3
		Other	<div><div></div></div>	3								
Walls	(46)	Plastering	<div><div></div></div>	1	(47)	Landlord	<div><div></div></div>	1	(48)	Landlord	<div><div></div></div>	1
		Painting	<div><div></div></div>	2		Tenant(s)	<div><div></div></div>	2		Tenant(s)	<div><div></div></div>	2
		Patching up	<div><div></div></div>	3		Other	<div><div></div></div>	3		Other	<div><div></div></div>	3
		Other										
Roof	(49)	New cladding	<div><div></div></div>	1	(50)	Landlord	<div><div></div></div>	1	(51)	Landlord	<div><div></div></div>	1
		Patching up	<div><div></div></div>	2		Tenant(s)	<div><div></div></div>	2		Tenant(s)	<div><div></div></div>	2
		Other	<div><div></div></div>	3		Other	<div><div></div></div>	3		Other	<div><div></div></div>	3

Extensions	(52)	Room(s) (size)	<input type="text"/>	(53)	Landlord	<input type="text"/>	1	(54)	Landlord	<input type="text"/>	1	
					Tenant(s)	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2	
					Other	<input type="text"/>	3		Other	<input type="text"/>	3	
	(55)	New Rooms	<input type="text"/>	(56)	Landlord	<input type="text"/>	1	(57)	Landlord	<input type="text"/>	1	
					Tenant(s)	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2	
					Other	<input type="text"/>	3		Other	<input type="text"/>	3	
Reply	(58)	Repairs	<input type="text"/>	1	(59)	Landlord	<input type="text"/>	1	(60)	Landlord	<input type="text"/>	1
		New taps	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2
Ventilation	(61)	Repairs	<input type="text"/>	1	(62)	Landlord	<input type="text"/>	1	(63)	Landlord	<input type="text"/>	1
		New latrine	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2
Surface water drainage	(64)	Repairs	<input type="text"/>	1	(65)	Landlord	<input type="text"/>	1	(66)	Landlord	<input type="text"/>	1
		New Drain	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2
Electrical equipment	(67)	Repairs	<input type="text"/>	1	(68)	Landlord	<input type="text"/>	1	(69)	Landlord	<input type="text"/>	1
		Installation	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2		Tenant(s)	<input type="text"/>	2
					Other	<input type="text"/>	3		Other	<input type="text"/>	3	

PHYSICAL CONDITION SCHEDULE OF DWELLING UNIT

MATERIALS/FINISHES				CONDITION				
Floor	(70)	Compacted earth	<input type="text"/>	1	(71)	Poor	<input type="text"/>	1
		Cemented screed	<input type="text"/>	2		Fair	<input type="text"/>	2
		Burnt brick	<input type="text"/>	3		Good	<input type="text"/>	3
		Other	<input type="text"/>	4				
Walls	(72)	Earth render	<input type="text"/>	1	(73)	Poor	<input type="text"/>	1
		Bag wash	<input type="text"/>	2		Fair	<input type="text"/>	2
		Plaster	<input type="text"/>	3		Good	<input type="text"/>	3
		Paint	<input type="text"/>	4				
		Other	<input type="text"/>	5				
Windows	(74)	Timber shutters	<input type="text"/>	1	(75)	Poor	<input type="text"/>	1
		Timber shutters with glazing	<input type="text"/>	2		Fair	<input type="text"/>	2
		Timber Frame with glazing	<input type="text"/>	3		Good	<input type="text"/>	3
		Metal casement with glazing	<input type="text"/>	4				
		Other	<input type="text"/>	5				

How many windows are there in the (main) room ?	<input type="text"/>
In your opinion is there enough light in the room(s) ?	Yes <input type="text"/> 1
	No <input type="text"/> 2
In your opinion is there enough ventilation in the room(s) ?	Yes <input type="text"/> 1
	No <input type="text"/> 2

USE HOUSEHOLD CHARACTERISTICS

Sex of head of household ?

Male

Female

1

2

Tenancy status ?

Landlord

Tenant

1

2

Where were you born ?

Home rural area

Another rural area

In this town

In another town/city

1

2

3

4

How long have lived in this dwelling ?

(completed years)

Where was your last place of residence ?

In this settlement

In another settlement in this town

In a settlement in another urban centre

In another residential area in this town

In a residential area in another urban centre

Home rural area

Another rural area

1

2

3

4

5

6

7

Do you own any land/property elsewhere ?

Yes

No

1

2

If yes, where is it ?

Home rural

Another rural area

In this town

In another town

1

2

3

4

Do you intend to return to your home rural area ?If not where will you go ?

Yes

Another rural area

Another urban centre

Rermain in this town

1

2

3

4

How many persons are there in this household

Adults

Children

(16 years and over)

(Under 16 years)

Male

Female

Male

Female

(87)

(88)

(89)

(90)

How many members of the household belong to :

Nuclear family

Extended family

Other

(91)

(92)

(93)

Is there any other household(s) sharing the rooms with you ?

Yes

No

If yes how many ?

If yes, how many people are there in the other household(s)

How many rooms does the household occupy ?

What is the total area of the room(s) (m2)

Please indicate what activities take place in the room(s) ?

Activity		Main room		Other room(s)
Living/Eating	(99)		(100)	
Sleeping	(101)		(102)	
Cooking	(103)		(104)	
Storage	(105)		(106)	
Shop or other retail activity	(107)		(108)	
Maintenance/craft	(109)		(110)	
Service activity(medical/educational	(111)		(112)	
Livestock shelter	(113)		(114)	

5) How satisfied are you with the size of the dwelling unit

Satisfied		1
Indifferent		2
Dissatisfied		3

5) In your on opinion is there a problem of overcrowding within the dwelling unit ?

Yes		1
No		2

7) How satisfied are you with the privacy within the dwelling unit

Satisfied		1
Indifferent		2
Dissatisfied		3

3) Is the head of the houeshold employed ?

Employed		1
Self-employed		2
Casual		3
Unemployed		4
Retired		5

2) If employed, in which sector ?

Formal		1
Informal		2

1) If employed, what is the nature of the employment ?

Office		1
Shop or other retail activity		2
Service(educational/medical/etc.)		3
Manufacturing/crafts		4
Skilled/semi-skilled manual		5
Unskilled manual		6
Other		7

) If employed, where is the place of employment ?

Within the settlement		1
In town		2
Other		3

) If employed, what is the mode of payement

Monthly salary		1
Weekly wages		2
Daily wages		3

) Are there other members of the household employed ?

Yes	
No	

If yes, how many are employed in each sector ?

Formal	<div></div>	(124)
Informal	<div></div>	(125)

Does the household own any of the following items ?

		Yes	No
Radio	(126)	<div></div>	<div></div>
Radio cassette	(127)	<div></div>	<div></div>
Record Player	(128)	<div></div>	<div></div>
Television	(129)	<div></div>	<div></div>
Gas Cooker	(130)	<div></div>	<div></div>
Bicycle	(131)	<div></div>	<div></div>
Motor cycle/scooter	(132)	<div></div>	<div></div>
Car	(133)	<div></div>	<div></div>
Van/lorry	(134)	<div></div>	<div></div>

it is the household expenditure on the following items ?

		Amount (Kshs)		Period specify	Amount per month
Rent	(135)	<div></div>	per	<div></div>	<div></div>
Water	(136)	<div></div>	per	<div></div>	<div></div>
Food	(137)	<div></div>	per	<div></div>	<div></div>
Energy(Wood fuel/Kerosene/Gas/Electricity	(138)	<div></div>	per	<div></div>	<div></div>
Transport	(139)	<div></div>	per	<div></div>	<div></div>
Education(fees/school/building fund)	(140)	<div></div>	per	<div></div>	<div></div>
Education(books/stationery/uniform)	(141)	<div></div>	per	<div></div>	<div></div>
Clothing and footwear	(142)	<div></div>	per	<div></div>	<div></div>
Medical expences	(143)	<div></div>	per	<div></div>	<div></div>
Remittances	(144)	<div></div>	per	<div></div>	<div></div>
Other	(145)	<div></div>	per	<div></div>	<div></div>
Total	(146)				<div></div>

) Has the rent been increased since the upgrading exercise or in the last three years ?

Yes	<div></div>
No	<div></div>

) If yes, from what to what (KShs) ?

to

Which of the following domestic services does the household use ?

) Water	Communal water point	<div></div>	1
	On-plot connection	<div></div>	2
	Water vendor	<div></div>	3
	Water kiosk	<div></div>	4

) How much water (*on average*) does the household use each day ?
(*Debes/Buckets*)

) How much time (*on average*) is spent collecting water
(*where applicable*) each day ?
(*Minutes/hours*)

) How satisfied are you with the service ?

Satisfied	<div></div>	1
Indifferent	<div></div>	2
Dissatisfied	<div></div>	3

3) Sanitation

Communal pit latrine		1
Shared on-plot pit latrine		2
Private pit latrine		3
Communal water borne system		4
Shared on-plot water borne system		5
Private on-plot water borne system		6

4) How satisfied are you with the service ?

Satisfied		1
Indifferent		2
Dissatisfied		3

5) Bathing facility

Communal bathing facility without running water		1
Shared on-plot bathing facility without running water		2
Private on-plot bathing facility without running water		3
Communal bathing facility with running water		4
Shared on-plot bathing facility with running water		5
Private on-plot bathing facility with running water		6

6) How satisfied are you with the service ?

Satisfied		1
Indifferent		2
Dissatisfied		3

7) What is the main fuel used for cooking ?

Fuelwood		1
Charcoal		2
Kerosene		3
Gas		4
Electricity		5

8) What is the main source of lighting ?

Oil lamp		1
Kerosene lamp		2
Pressure lamp		3
Gas lamp		4
Electricity		5

9) How do you dispose of household waste water ?

Pour just outside structure		1
Pour within the plot		2
Soakage pit		3
Open drains		4
Down the sewer		5

10) How do you dispose of household rubbish/garbage ?

Throw/burn just outside structure		1
On-plot pit/heap		2
On plot container		3
Throw/burn by the roadside		4
Communal pit /heap		5
Communal container		6

In you opinion how important is it to have the following services within the plot?

1) Water supply ?

Not neccesary	<input type="text"/>	1
Indifferent	<input type="text"/>	2
Desirable	<input type="text"/>	3
Essential	<input type="text"/>	4

2) Bathing facility(bathroom/shower)

Not neccesary	<input type="text"/>	1
Indifferent	<input type="text"/>	2
Desirable	<input type="text"/>	3
Essential	<input type="text"/>	4

3) Kitchen(seperate for cooking)

Not neccesary	<input type="text"/>	1
Indifferent	<input type="text"/>	2
Desirable	<input type="text"/>	3
Essential	<input type="text"/>	4

4) Waste water disposal

Not neccesary	<input type="text"/>	1
Indifferent	<input type="text"/>	2
Desirable	<input type="text"/>	3
Essential	<input type="text"/>	4

5) Garbage/Rubbish disposal

Not neccesary	<input type="text"/>	1
Indifferent	<input type="text"/>	2
Desirable	<input type="text"/>	3
Essential	<input type="text"/>	4

6) Surface water drainage

Not neccesary	<input type="text"/>	1
Indifferent	<input type="text"/>	2
Desirable	<input type="text"/>	3
Essential	<input type="text"/>	4

7) Electricity

Not neccesary	<input type="text"/>	1
Indifferent	<input type="text"/>	2
Desirable	<input type="text"/>	3
Essential	<input type="text"/>	4

Please indicate in order of priority, which of the following three (3) domestic services you would rate as being most important in an upgrading exercise ?

Water supply	(168)	<input type="text"/>
Sanitation	(169)	<input type="text"/>
Bathing facilty	(170)	<input type="text"/>
Kitchen	(171)	<input type="text"/>
Waste water disposal	(172)	<input type="text"/>
Garbage/Rubbish disposal	(173)	<input type="text"/>
Surface water drainage	(174)	<input type="text"/>
Electricity	(175)	<input type="text"/>

Would you be/have been willing to contribute money towards provision of the:

First (176)	Yes	<input type="text"/>
	No	<input type="text"/>
Second (177)	Yes	<input type="text"/>
	No	<input type="text"/>
Third (178)	Yes	<input type="text"/>
	No	<input type="text"/>

RVICES, UTILITIES AND AMENITIES

Do you commonly use any of the following services /utilities /amenities ?
If yes where are they located (*distance in Km*) and how satisfied are you
with the service you recieve ?

Nursery school	(179)	Yes	<input type="text"/>	1	(180) On-site	<input type="text"/>	1	(191) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3
Primary school	(182)	Yes	<input type="text"/>	1	(183) On-site	<input type="text"/>	1	(184) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3
Adult education classes	(185)	Yes	<input type="text"/>	1	(186) On-site	<input type="text"/>	1	(187) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3
Market	(188)	Yes	<input type="text"/>	1	(189) On-site	<input type="text"/>	1	(190) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3
Public clinic	(191)	Yes	<input type="text"/>	1	(192) On-site	<input type="text"/>	1	(193) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3
Private clinic	(194)	Yes	<input type="text"/>	1	(195) On-site	<input type="text"/>	1	(196) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3
Traditional healer	(197)	Yes	<input type="text"/>	1	(198) On-site	<input type="text"/>	1	(199) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3
Community centre	(200)	Yes	<input type="text"/>	1	(201) On-site	<input type="text"/>	1	(202) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3
Church/Mosque	(203)	Yes	<input type="text"/>	1	(204) On-site	<input type="text"/>	1	(205) Satisfied	<input type="text"/>	1	
		No	<input type="text"/>	2		Distance	<input type="text"/>		2	Indifferent	<input type="text"/>
									D/satisfied	<input type="text"/>	3

Rank three of the following services/utilities/amenities,
in order of priority, do you consider to be essential in the
development ?

Nursery school	(206)	<input type="text"/>
Primary school	(207)	<input type="text"/>
Adult education class	(208)	<input type="text"/>
Market	(209)	<input type="text"/>
Public clinic	(210)	<input type="text"/>
Private clinic	(211)	<input type="text"/>
Traditional healer	(212)	<input type="text"/>
Community centre	(213)	<input type="text"/>
Church/ Mosque	(214)	<input type="text"/>

Would you be/have been willing to contribute money
towards provision of the:

First	(215)	Yes	<input type="text"/>
		No	<input type="text"/>
Second	(216)	Yes	<input type="text"/>
		No	<input type="text"/>
Third	(217)	Yes	<input type="text"/>
		No	<input type="text"/>

open drains	(244)	Yes <input type="text"/> 1 No <input type="text"/> 2	(245) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
garbage/refuse (e.g. heap, pits, etc.)	(246)	Yes <input type="text"/> 1 No <input type="text"/> 2	(247) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
outdoor fires (e.g. garbage/refuse burning, etc.)	(248)	Yes <input type="text"/> 1 No <input type="text"/> 2	(249) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
Other (specify)	(250)	Yes <input type="text"/> 1 No <input type="text"/> 2	(251) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3

In your opinion is there a problem of noise in the settlement from any of the following sources, and if so, how intense is it ?

residential (houses/Living)	(252)	Yes <input type="text"/> 1 No <input type="text"/> 2	(253) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
commercial (e.g. retailing, catering, etc.)	(254)	Yes <input type="text"/> 1 No <input type="text"/> 2	(255) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
manufacturing/crafts (e.g. woodwork, metalwork, etc.)	(256)	Yes <input type="text"/> 1 No <input type="text"/> 2	(257) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
outdoor fires (e.g. garage/refuse burning etc.)	(258)	Yes <input type="text"/> 1 No <input type="text"/> 2	(259) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3

In your opinion is there a problem of any of the following, and if so, how serious is it ?

pests	(260)	Yes <input type="text"/> 1 No <input type="text"/> 2	(261) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
mosquitoes	(262)	Yes <input type="text"/> 1 No <input type="text"/> 2	(263) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
rodents (rats/mice)	(264)	Yes <input type="text"/> 1 No <input type="text"/> 2	(265) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3
Other (specify)	(266)	Yes <input type="text"/> 1 No <input type="text"/> 2	(267) Minor <input type="text"/> 1 Moderate <input type="text"/> 2 Serious <input type="text"/> 3

PGRADING

ease indicate,in order of priority, which of the following three services you would want to be provided the settlement if all services were provided free but you could only select three due to limited funds ?

Water supply	(268)	rating
sanitation	(269)	
Solid waste disposal	(270)	
Stormwater drainage	(271)	
Access roads and Footpaths	(272)	
On-plot electricity supply	(273)	
Street/Security lighting	(274)	

hich of three of the following services would you be most willing to contibute money towards, if you are asked to do so, if an upgrading project was planned for the area ?

Water supply	(275)	rating
sanitation	(276)	
Solid waste disposal	(277)	
Stormwater drainage	(278)	
Access roads and Footpaths	(279)	
On-plot electricity supply	(280)	
Street/Security lighting	(281)	

- 32) If water supply was introduced on the plot, would you be willing to pay higher rent ?

Yes ☐ 1

No ☐ 2
- 33) If improved sanitation was introduced on the plot, would you be willing to pay higher rent ?

Yes ☐ 1

No ☐ 2
- 34) If electricity supply was introduced on the plot, would you be willing to pay higher rent ?

Yes ☐ 1

No ☐ 2
- 5) If an upgrading project which included solid waste disposal, stormwater drainage, access roads and footpaths, and street/security lighting were implemented, would you be willing to pay to pay higher rent ?

Yes ☐ 1

No ☐ 2
- 5) Would be willing to contribute free labour if an upgrading project was implemented in this settlement ?

Yes ☐ 1

No ☐ 2

7) If no, why not ?

You are a tenant
You do not intend to remain here for long
You are too busy to spare the time
You do not believe in community participation
You will only contribute labour if you are paid
Other

<input type="checkbox"/>	1
<input type="checkbox"/>	2
<input type="checkbox"/>	3
<input type="checkbox"/>	4
<input type="checkbox"/>	5
<input type="checkbox"/>	6

) How satisfied are you with the enviroment in which you live ?

Satisfied	<input type="checkbox"/>	1
Indifferent	<input type="checkbox"/>	2
D/satisfied	<input type="checkbox"/>	3

68) Have you benefitted from improved water supply since the upgrading project?

Yes

No

1

2

69) Have you benefitted from improved sanitation since the upgrading project?

Yes

No

1

2

70) Have you benefitted from improved waste water disposal since the upgrading project?

Yes

No

1

2

71) Have you benefitted from improved garbage/refuse disposal since the upgrading project?

Yes

No

1

2

72) Have you benefitted from an improved on-plot surface water drainage since the upgrading project?

Yes

No

1

2

73) Have your general living conditions within the plot/house improved as a result of the upgrading project?

Yes

No

1

2

74) In your opinion have the improved access roads and footpaths benefited the residents ?

Yes

No

1

2

(comments.....)

.....)

75) In your opinion, has the stormwater drainage been of any benefit to the residents ?

Yes

No

1

2

(comments.....)

.....)

76) In your opinion, have the streets lights/security lighting been of any benefit to the residents ?

Yes

No

1

2

(comments.....)

.....)

77) In your opinion, which of the following services was of most benefit to the residents ?

Water supply		1
Sanitation		2
Solid waste disposal		3
Stormwater drainage		4
Access roads & footpaths		5
Street & security lighting		6

78) In your opinion, which of the following services was of least benefit to the residents ?

Water supply		1
Sanitation		2
Solid waste disposal		3
Stormwater drainage		4
Access roads & footpaths		5
Street & security lighting		6

279) Had you been asked to pay for the services, which one of the following would you have been most willing to pay ?

Water supply		1
Sanitation		2
Solid waste disposal		3
Stormwater drainage		4
Access roads & footpaths		5
Street & security lighting		6

280) Had you been asked to pay for the services, for which one of the following would you have been least willing to pay ?

Water supply		1
Sanitation		2
Solid waste disposal		3
Stormwater drainage		4
Access roads & footpaths		5
Street & security lighting		6

281) In your opinion, has the overall enviroment within the settlement improved, worsened or remained the same ?

Improved		1
Worsened		2
Same		3

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