

SITES AND SERVICES:
A STRATEGY FOR
KENYAN URBAN DEVELOPMENT

by

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ABSTRACT

The sites and services approach to urban development in Third World countries is understood to mean the preparation and subdivision of land for residential building and the provision of various combinations of public utilities and community facilities. In recent years the approach has emerged as a promising method for creating additional urban land suitable for development by the low-income groups. It has also been seen as an efficient vehicle for comprehensive community development.

This thesis is a case study of one particular application of the sites and services strategy in Nairobi, the capital city of Kenya. It relates the story of the Dandora Community Development Project. The evolution of the project is traced through several stages of development which led to its transformation from a comprehensive community development scheme serving the needs of the low-income groups to a peri-urban housing estate catering increasingly to the investment needs of Nairobi's middle class.

An analysis of the outcomes at Dandora reveals the following major dilemmas which are inherent in the sites and services concept and which are exacerbated by deficiencies in Kenya's housing policy environment: prices versus standards, subsidies versus replicability; wage employment versus self-help labor; middle-class beneficiaries versus low-income beneficiaries; and sponsor control versus participant freedom.

Dandora has provided benefits to allottees not only in the form of shelter but also in the form of additional income through rents and plot sales. This suggests that sites and services have an important role as an instrument for income redistribution.

On balance Dandora exhibits more in common with past Kenyan housing policies and less as a radical new attempt to meet the urban service needs of the poor. Recommendations are made to provide project participants with greater choice of options in future projects both in respect of housing and non-housing services.

Thesis Advisor: Alcira Kreimer, PhD
Assistant Professor

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Table of Contents

	Page
Abstract	i
Acknowledgements	ii
List of Figures	iii
List of Tables	iv
<u>Chapter 1 - Introduction</u>	1
Background	1
Purpose and Scope of the Thesis	3
Research Method	6
Organization of the Thesis	9
Notes	11
<u>Chapter 2 - Sites and Services Defined</u>	
Introduction	12
The Changing Perspective of Urbanization	13
Principles for a New Approach	17
Sites and Services: A Definition	20
Advantages of the Sites and Services Approach	26
Disadvantages of Sites and Services	29
Notes	33
<u>Chapter 3 - Urbanization in Kenya</u>	
Introduction	35
Major Socio-economic Characteristics of the Urban Poor	36
The Emergence of Sites and Services as a National Strategy	41
Notes	48
<u>Chapter 4 - A Chronological History of Dandora</u>	
Introduction	50
Project Definition: November 1970-December 1972	50
Project Preparation: January 1973-May 1974	57
Project Appraisal: June 1974-May 1975	66
Project Implementation: May 1975-November 1976	78
Project Occupation: November 1976-Present	85
Notes	91

Chapter 5 - Dandora Phase I: One Year After Conclusion

Introduction	93
Plot Development Costs	93
Monthly Plot Charges	97
House Consolidation	101
Plot Utilization	106
Plot Ownership	107
Employment	109
Project Administration	110
Conclusions	111
Notes	113

Chapter 6 - Theory versus Practice

Introduction	114
Housing Prices versus Housing Standards	116
Subsidy versus Replicability	119
Self-Help Labor versus Wage Employment	124
Middle Class Penetration of Dandora	127
Sponsor Control versus Participant Freedom	131
Conclusions	137
Notes	139

Chapter 7 - Recommendations and Conclusions

Introduction	140
How Well Has Dandora Done?	140
Implications for the National Sites and Services Program	144
Income Distribution Effects	146
Implications for Future Program Design	148
Notes	153

Appendix 1: Summary Chronology of Dandora Community Development Project	156
Appendix 2: Bibliography	159
Appendix 3: Glossary of Abbreviations	165

List of Figures

	Page
1.1 Map of Nairobi	8
2.1 Flow Chart: Major Tasks for Implementing a Sites and Services Project	23
3.1 Distribution of Public Housing Supply and Demand in Nairobi	43
4.1 Core Unit Layout: Conventional and Proposed	64
4.2 Site Plan of Dandora Community Development Project	69
4.3 Partial Plan of Phase I (1:400)	71
4.4 Core Unit Layout: Proposed for Phase II	87
5.1 Nairobi Income Distribution Curve (1970)	100
6.1 Housing Prices and Housing Standards	117
6.2 Subsidy, Replicability, and Affordability	120
6.3 Self-Help Labor and Wage Employment	124
6.4 Middle Income Beneficiaries and Low Income Beneficiaries	128
6.5 Sponsor Control and Participant Freedom	133

List of Tables

	Page
1.1 Global Summary of Use of Serviced Sites	4
3.1 Nairobi Household Income Distribution (1970)	37
3.2 Percentage of Income Spent on Rent in Nairobi (1970)	40
4.1 Phase I Land Use Profile	70
4.2 Project Cost Estimates and Allocation to Beneficiaries	77
4.3 Number of Applications by Plot Option	81
4.4 Actual Plot Types Developed in Phase I	89
5.1 Cost of Plot Preparation Charged to Allottees	94
5.2 Nairobi Building Cost Index (January 1973+100)	95
5.3 Phase I Pricing of Housing Services (Shillings per month)	98
5.4 House Consolidation Rate by Plot Option	102
5.5 Laborers per Plot by Building Method	105
5.6 Construction Costs Per Room by Building Method	105
5.7 Cash Flow for Sample Plot Development	109

Chapter 1

Introduction

Background

The rapid rate of urbanization occurring in the developing countries is by now a well-documented phenomenon. In 1975 it was forecast that by the year 2000 1.3 billion inhabitants will be added to their urban populations.(1) This accounts for approximately two thirds of the total anticipated increase in population and represents a tripling in size of the current urban populace. In most of the affected cities, the provision of urban infrastructure in the form of roads, sewers, water, electricity and community facilities has lagged behind city growth. The result has been a shortage of serviced land which is properly integrated into the urban fabric in terms of use and infrastructure.

The site and services approach to urban development in Third World countries has been seen as an efficient way to create this needed urban land. The concept is understood to mean

"the preparation and subdivision of land for residential buildings and the provision of various combinations of public utilities and community facilities."(2)

Typically, the construction of dwellings is carried out by the plot holders using self-help methods. The concept can apply to both raw land and existing residential settlements. It is seen as having particular potential for serving the needs of low-income groups.

In 1972 a global survey revealed that 23 countries had prepared over 770,000 new serviced plots for occupancy by low-income urban residents since the mid-1950s.(3) Since 1972, an additional 148,000 plots in 15 countries have been the subject of loan agreements with the International Bank for Reconstruction and Development (IBRD) as part of multisectoral community development projects (refer to Table 1.1).(4) IBRD loans for a further 48 projects are scheduled for negotiation before 1981. It would thus appear that the notion of sites and services is gaining increasing acceptance throughout the world as a way to create additional urbanized land in Third World countries.

Kenya is one of these countries and is representative of a number of sub-Saharan African nations whose proportion of urban population is low (11.3%), but whose cities are growing at double the rate of natural population growth (4.9%).(5) Faced with median per capita urban incomes of less than \$200 per year and a growing proportion of urban residents, Kenya has turned to the sites and services approach as part of its strategy for urbanization. The National Development Plan for 1974-1978 called for the allocation of \$72 million by the central Government for sites and services.(6) This represented 32% of the total government allocation for all types of publicly funded urban housing and was earmarked for 72,000 plots to be located in the 36 largest urban centers. Currently, efforts are being made to strengthen the institutional mechanisms for implementing the program and significant amounts of international capital are being obtained to finance the development costs of the work.

Thus the sites and services strategy now occupies an expanding niche in Kenya's national urbanization policy. Moreover, on the basis of the

evidence presented in Table 1.1, it is clear that the approach has secured an equal if not greater foothold in the national urbanization policies of a number of other countries.

Purpose and Scope of the Thesis

There are a number of hypotheses underlying the use of the sites and services approach as a way to cater for the needs of the urban poor.

First, it is hypothesised that sites and services provide a way of giving government a method of controlling the spatial development of urban centers by channelling self-help housing efforts onto appropriately located and serviced land. Second, it is assumed that limited resources will not permit governments to solve "the housing problem" in any more substantive way. Sites and services are thus claimed to be a "second best solution" to the problem of providing shelter, especially to the urban poor.(7) Thirdly, and perhaps most importantly, it is claimed that sites and services improve the life-prospects of project participants, particularly those in the low-income groups, by giving them access to the resources, services, and opportunities offered by the urban system.

The purpose of this thesis is to examine the validity of the above hypotheses in the case of Kenya. More specifically, it is intended to 1) define the concept of sites and services as applied to new residential settlements; 2) outline the relevant social, economic, and political characteristics of the Kenyan context within which the concept is being applied; 3) describe in detail one particular application of the approach in Kenya; and 4) evaluate the extent to which the Kenyan experience validates the claims made for the approach. The study attempts to deal with the following topics:

Table 1.1

Summary of Global Survey of Sites and Services

Country	Number of plots prepared before 1972	Number of new plots assisted by IBRD since 1972
Bolivia	-	5,525
Botswana	-	1,800
Burma	40,000	-
Cameroon	4,200	-
Chile	180,000	-
Colombia	12,000	-
El Salvador	-	15,000
Guatemala	-	10,000
India	110,000	26,200
Iraq	100,000	-
Indonesia	-	7,930
Ivory Coast	-	8,250
Jamaica	-	4,000
Kenya	3,000	6,000*
Korea	6,600	1,900
Malawi	7,500	-
Morocco	10,750	-
Nicaragua	-	6,400
Pakistan	150,000	-
Panama	1,500	-
Philippines	-	3,300
Puerto Rico	11,600	-
Senegal	15,000	16,000
Sudan	13,000	-
Tanzania	521	29,600
Thailand	4,450	-
Tunisia	14,000	-
Turkey	50,000	-
Venezuela	20,000	-
Zambia	18,500	4,400
TOTAL	772,621	146,305

Sources: Merrill and Grindley, 1973, p.8 and IBRD, 1977, Attachment 1.

* Dandora Community Development Project

1) The theoretical basis on which the sites and services concept is founded;

- what assumptions does it make about the process of urbanization in Kenya as it is presently understood?
- what are the contradictions built into the approach as currently defined?

2) The various elements of the sites and services strategy as practiced in Kenya are;

- what components make up the sites and services strategy?
- what is the nature of the relationship between the program sponsors and the program participants?
- what role have international development agencies played in shaping Kenya's strategy?

3) The nature of Kenya's urban situation within which the concept is being applied;

- what are the socio-economic characteristics of the country's urban population?
- what is the existing institutional framework which caters for Kenya's urban growth?
- what national and local policies have been adopted to deal with expanding urban centers?

4) The ability of the sites and services strategy to meet the needs of the low-income groups;

- what has been the impact of the strategy on the perceived need for low-income housing in Kenya's urban areas?
- to what extent do sites and services provide opportunities to use self-help methods of building construction?
- have sites and services projects succeeded in promoting comprehensive community development for the urban poor?
- to what extent have sites and services projects created employment opportunities for the low-income groups?

5) The conditions under which a strategy of sites and services is most

likely to succeed;

- what are the political, economic, social and technical constraints which hinder the implementation of the strategy?
- what sub-groups of the housing market are best served by the strategy?
- what kind of housing policy environment is required to support a strategy of sites and services?
- what role do sites and services have in developing new urban communities?

6) The future prospects for Kenya's sites and services strategy;

- what changes are required in order to make the strategy better serve the needs of the low-income group?

Research Method

As a result of Kenya's use of the sites and services concept since the early 1960s, there exists a considerable body of literature on the subject. This literature is made up of not only government statements but also a number of evaluation surveys (Houlberg et al., 1971; Merrill, 1975) and academic theses (Chana, 1974, 1975; Temple, 1973). However, there has been a tendency to treat the subject at a relatively high level of generality or from a particular disciplinary point of view such as architecture or political science. Moreover, none of the work published to date has involved the preparation of a case study of a single project with sufficient detail to illustrate some of the more complex aspects of planning and implementing what may appear to be a straightforward urbanization policy. This thesis is an attempt to correct that deficiency by undertaking a detailed study of one particular application of the sites and services strategy in Kenya.

The case study focuses on the Dandora Community Development Project located in the nation's capitol city, Nairobi. Dandora is a multiphased

sites and services scheme consisting of 6,000 plots and related community facilities. It is located on a tract of previously vacant land approximately eleven kilometers north east of the city center (refer to Figure 1.1). The project is being implemented by the Nairobi City Council (NCC) under the close supervision of the central Government. At the time of writing (winter 1977/78) the first 1,000 plots have been completed and occupied. The remaining 5,000 plots, divided into two additional phases, are in the final design stage. The implementation of the project has been accompanied by considerable political controversy. The planning, design, and management of the scheme embody many notions of urban development which run counter to the sentiments of diverse interest groups in the country. Questions about appropriate environmental standards, relevant allocation criteria and the like generated much debate among both policy makers and ordinary citizens.

The Dandora Project was selected for study for the following reasons. Firstly, the size of the scheme, its location in Nairobi and the political controversy surrounding its implementation have caused virtually every segment of Kenyan society to make known their opinions of the project. It is thus a particularly rich episode in Kenyan housing history and crystallizes the major issues underlying the sites and services concept as applied in Kenya. Secondly the project is being sponsored by the International Bank for Reconstruction and Development (IBRD). As such, it is one of a growing number of such projects which are coming under the formative influence of this important international lending agency (refer to Table 1.1).

The case study draws on information gathered in 1976 when the author was engaged as an architect on the design of the second and third phases

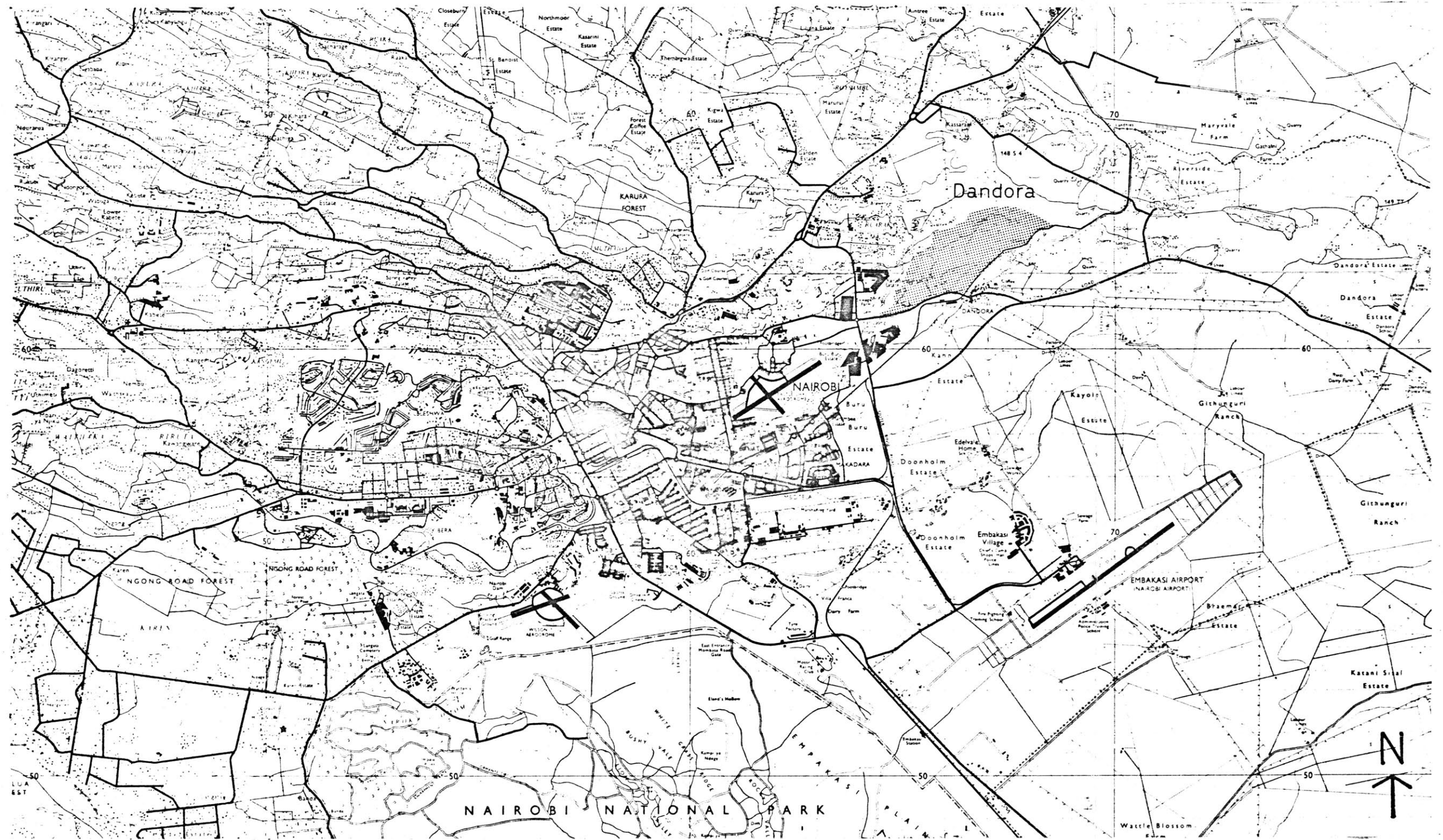
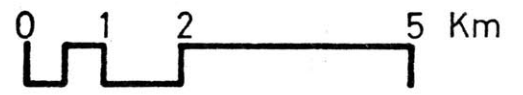


Figure 1-1 City of Nairobi



of the project. Note that neither of these phases have been constructed yet and so they do not form part of the analysis. This experience presented the opportunity to be a "participant observer" and watch part of the process unfold. The study also incorporates data collected in Nairobi in the summer of 1977. This period of field research included interviews with policy makers in central and local Governments, professional consultants, IBRD staff, building contractors, university research personnel and project residents. Data was collected from unpublished records kept by the Ministry of Housing and Social Services, the Ministry of Lands and Settlements, the National Housing Corporation, the Housing Research and Development Unit of the University of Nairobi and the Nairobi City Council. These sources included particularly valuable data collected by the Dandora Monitoring and Evaluation Study funded jointly by the Kenya Government and the IBRD. Information was also obtained from published sources such as annual reports of the relevant institutions and local and international newspapers. Direct field observations also yielded valuable information on the nature of the Dandora Project.

Organization of the Thesis

The next chapter briefly reviews the origins of the theoretical basis of the concept of sites and services. It describes the shift in perspective taken of uncontrolled urban growth from that of a pathological process to one of an inevitable manifestation of rapid urban growth containing much of the energy and resources needed for its own consolidation. The concept of sites and services is defined and an attempt is made to identify its physical, financial, and administrative components.

Chapter 3 examines Kenya's urban situation, dominated as it is by its capitol, Nairobi, and its port city, Mombasa. The important characteristics of the country's urbanization process are identified. The salient points of the national social, economic and political systems are described to provide the relevant background against which to view the unfolding of the Dandora Project.

Chapter 4 recounts what happened when the concept of sites and services as defined in Chapter 2 was applied to the real world as outlined briefly in Chapter 3. The evolution of the Dandora Project is traced through five different stages of development: definition, preparation, appraisal, implementation and occupation. During the process particular issues surfaced, often more than once, and became the subject of debate by actors who represented diverse interests, both Kenyan and international. The manner in which the forces were brought to bear and the issues resolved (or not resolved) conditioned the outcomes of Dandora. Chapter 5 describes these outcomes as observed in December 1977. The observations depict the "state of the system" one year after the first 1,000 plots were occupied. They provide a preliminary indication of the extent to which Dandora has achieved its goals.

Chapter 6 attempts to account for the observed outcomes and explores the relationships between them. The concept of sites and services is analyzed in terms of the contradictions inherent in the approach. Certain shortcomings in Kenya's political, social and economic systems are identified as contributing to the policy dilemmas facing Kenya's urban planners. The last chapter discusses the implications of the Dandora experience for future urbanization projects. Recommendations are made for modifying the strategy to better serve the needs of Kenya's low-income population.

Chapter 1 Notes

1. International Bank for Reconstruction and Development, The Task Ahead for the Cities of the Developing Countries, Working Paper No. 209, Washington D.C., July 1975, p.10.
2. Merrill, Robert and William Grindley, Sites and Services: The Experience and Potential, unpublished mimeo, IBRD, 1973, p.1.
3. Merrill and Grindley, ibid., p.8.
4. IBRD, Sites and Services and Upgrading: A Review of World Bank Assisted Projects, Washington D.C., 1977, Attachment 1.
5. IBRD, The Task Ahead, ibid., p.21.
6. Kenya, National Development Plan 1974-1978, Nairobi, Government Printer, 1973, Table 21.4.
7. Burns, Leland S. and Leo Grebler, The Housing of Nations: Analysis and Policy in a Comparative Framework, New York: John Wiley and Sons, 1977, p.241.

Chapter 2

Sites and Services Defined

Introduction

The purpose of this chapter is to define in some detail the nature of the sites and services approach to low-income housing. An attempt is made to link the origins of the contemporary definition of the concept to a fundamental change in planners' perspective of the urbanization process which occurred in the mid 1960's. This perspective, viewing the problem of squatter settlements as containing the seeds of its own solution, suggests a number of broad principles or policy assumptions which must condition government response to the housing problem in developing countries. The various physical, financial and administrative components of the sites and services approach are described with attention paid to how they meet the policy assumptions. The result is a strategy which claims to meet the housing needs of the low-income and which therefore has decided advantages over both conventional public housing and equally conventional squatter settlements. A final section outlines some of the criticisms which have been made of sites and services projects.

The Changing Perspective of Urbanization

The origins of the contemporary concept of sites and services has grown out of a new perspective of the urbanization process. Most planners have come to realize that the urban situation of many developing countries poses the following constraints on solutions to providing a proper dwelling environment for the low-income groups:

- "a. Rapid urban population growth which is not mitigated by policies of rural development;
- b. the inability of government to suppress the development of squatter settlements in urban areas through the use of police powers such as zoning, eviction or demolition;
- c. the inadequacy of government resources to provide every family with a permanent suitable house; and
- d. the inability of improved housing technology to solve the housing problem by itself."(1)

It is useful to summarize how these changes in perspective came about.

The classical view of urbanization did not distinguish between squatter settlements, often located on the periphery of cities, and inner city slums. Both types of settlement were seen as pathological aberrations in the urban setting. In both cases housing was seen as a physical commodity whose quality was capable of being evaluated according to definitive standards. The solution proposed for solving the housing crisis was simply the eradication of substandard dwellings and their replacement with publicly funded decent housing. This view was the dominant perspective in many developing countries and to a great extent still is. A typical official statement to this effect is the

oft-quoted resolution by the Indian Town Planning Institute in 1955:

"The basic standards in housing and planning are arrived at not only from consideration of cost but also from considerations of creating the desirable sociological and physical environment necessary for the healthy growth of individuals and the community.....The standards cannot be lowered, whatever be the community.....Substandard housing is but a step towards slums." (2)

In the early 1960's there emerged a different view which developed partly in response to the failure of the urban renewal formula in Western countries. This view accepted the inevitability of uncontrolled urban settlements. More sophisticated analyses of the urban process revealed many types of urban slums which were substantially different in social and economic character from the many types of peripheral squatter settlements (3). Already it was being realized that the conventional urban renewal strategies were beyond the financial and human resources possessed by most governments. Moreover, whenever urban renewal was carried out the beneficiaries turned out not to be the low-income groups but the better off who could afford the price of improved urban services. In addition, the social costs of urban "removal" exacted its price from those residents forced to relocate far from their places of employment (4).

Attention turned to the possibilities of government organized and assisted "self-help" approaches to urban housing. Experiments were carried out along these lines in Puerto Rico (1958) and Colombia (1960). A review of such schemes by Charles Abrams stated:

"Where the aim is not primarily the training of workers, it is preferable for the government to lay out and provide lots and utilities and let each owner decide whether to use his own skills or to hire others for all, most or part of the work." (5)

He also described the phenomenon of "installment construction" whereby a family constructs its dwelling progressively as funds allow:

"Installment building is the only way many families without savings can get their house built.....The installment builder needs financing to help him complete his building, and often a small loan will be sufficient. But not enough attention has been paid to this aspect of the housing problem."(6)

Here we see the beginnings of the sites and service concept as a basis for a formal instrument of public policy. It was articulated in a very pragmatic way by Abrams on the basis of perceptive field observation. He offered it, albeit with some reservations about the efficacy of self-help labor, as a possible way to shelter the urban poor.

Similar observations by John Turner in Peru led to his formulation of a theory which attempted to explain the nature of what he called autonomous urban settlements. In 1966 he prepared an influential paper entitled "Uncontrolled Urban Settlement: Problems and Policies" for a United Nations Interregional Seminar on Development Policies and Planning in Relation to Urbanization. In this paper he outlined a number of hypotheses concerning the nature of squatter settlements and the process by which they are formed.

His first hypothesis reversed the traditional notion that uncontrolled urban growth was a pathological phenomenon. By postulating a distinction between "problems of planlessness or anarchy and of 'shantytown' slum conditions," he proposed that:

"Uncontrolled urban settlement is a manifestation of normal urban growth processes under the exceptional conditions of rapid urbanization."(7)

From this he drew a second hypothesis:

"Autonomous urban settlements are both the product of and vehicle for activities which are essential to the process of modernization."(8)

A third hypothesis is based on the assumption that the values and priorities of the popular sector of the urban population are different from those that they are required to adopt by society's institutions:

"Autonomous urban settlement (in the major cities of urbanizing nations) is the product of the difference between the nature of popular demand for dwellings and those supplied by institutionalized society."(9)

It was asserted that employment was a priority amongst the urban poor, second only to the need for water, and that housing was much lower on the list than planners had previously supposed. Turner argues that:

"The institutional control of urban settlements depends on the encouragement and support of popular initiative through the government servicing of local resources.....Therefore governments, especially those that do not possess or control resources needed for environmental development, should not attempt to substitute for local action but they should support it."(10)

Squatter settlements were "viewed as solutions to difficult social problems rather than as problems in themselves."(11) Rather than build houses, government should create the capacity of the low-income groups to house themselves. Turner suggested that:

"in order to make the best use of scarce housing resources..... each household must have an adequate choice of alternative locations, of alternative forms of tenure and, of course, of alternative structures and ways of building and using them."(12)

Since 1966 Turner has elaborated his thesis and has embraced the notion of housing as an activity"that can act as a vehicle for personal fulfillment."(13) That is, housing is seen more as a process, "a verb" and not so much as a commodity or "noun". This conceptual leap distinguishes Turner and his advocates from his more pragmatic predecessors such as Abrams.

Since the mid-1960's, much field research has been carried out in various countries with a view to testing Turner's hypotheses. Much of

this work has been done in Latin America: Leeds, 1973, Perlman, 1975 in Brazil; Collier, 1974, in Peru; Ward, 1976, and Sudra, 1975, in Mexico; and Portes, 1974, in Chile. There are a number of studies in Asia and Africa as well: Laquian, 1968, in the Philippines; Etherton, 1971, in Kenya.

The Turner approach to housing the low-income groups suggests a number of principles which should govern the planning, design and management of strategies for dealing with the problem. It is to these principles that we next turn.

Principles for a New Approach

The altered perception of urbanization outlined above suggests that any appropriate and replicable strategy for providing suitable dwelling environments for the low-income groups in developing countries must rely on the following basic principles:

First, a successful strategy must necessarily provide what Van Huyck calls "channels of upward mobility." (14) This requires:

a) Treating the total neighborhood as the unit of concern since housing per se is not the problem of first priority for the urban poor.

b) Guaranteeing an adequate mixture of income-producing opportunities for all members of the family. This requires allowing income-earning activities to take place within the dwelling environment.

c) Applying the strategy in areas of existing employment opportunities and urban services. Where this is impossible, the creation of jobs and services must accompany the development of new dwelling environments.

d) Ensuring the provision of suitable housing services for those urban poor who cannot afford to own a dwelling.

The second principle recognizes the inadequacy of government resources to house the whole population. Hence, the strategy must, of necessity, mobilize private resources, both human and financial. This can be achieved by:

a) Ensuring that the benefits of the strategy are perceived by the participants as being worth paying for. That is, there must be value for money.

b) Ensuring that the costs per family do not exceed the amount families pay for housing in the absence of the strategy.

c) Guaranteeing the security of tenure of the dwelling environment to encourage its development by the participants.

d) Stimulating investment in the dwelling environment by providing families with appropriate types of credit.

Thirdly, a corollary to the second principle indicates that not only must the strategy mobilize private resources, but it must also be self-financing. That is, any costs not covered by private financial resources must be capable of payment by the sponsor on the scale of a large continuing program. This can be achieved by:

a) Selecting participants on the basis of their ability to pay for housing rather than on the basis of their need. In other words, the housing services provided must be affordable by the low-income groups.

b) Ensuring that there is an effective system for collecting the payments owed by the participants.

c) Gearing any improvements to public services, community facilities and housing to the effective demand of the participant population.

A fourth principle calls for the successful strategy to be applicable on a massive scale such that, in the long run, the supply of low-income housing will expand with a concomitant reduction in its market price. A necessary step to take in this regard is the preservation of the existing housing stock so that each new dwelling represents a net increase in the number of houses available to the low-income groups. This suggests the halting of demolition of existing squatter areas.

A fifth and final principle, called "the principle of self-government in housing" by Turner in his most recent writing, calls for the separation of:

"personal and local activities and their immediate ends from those that are necessarily standardized at supra-local levels."(15)

This principle gives the most direct clue to the fundamental nature of the sites and services approach.

In essence, the sites and services principle allows low-income residents to continue to use their resources to provide their own dwelling environment but in a physical setting that avoids the squalor associated with uncontrolled urban settlements. This principle of self-government in housing follows from the hypothesis that all activities connected with building and maintaining a dwelling environment can be divided into two sets. One set includes all those activities that are best carried out by a centralized organization on a "one-shot" instant development basis, e.g. the provision of physical infrastructure such as roads, sewers, etc. The other set of activities includes all those tasks that are best carried out by decentralized, autonomous, small-scale units on a progressive basis, e.g. building and maintaining

individual dwellings. What distinguishes sites and services from other more conventional methods of housing is the location of the dividing line between the two sets of activities so as to minimize the per capita investment of the sponsor and to maximize the contribution of the participants.

Sites and Services: A Definition

Turner has defined sites and services programs as follows:

"Sites and services programs are publicly sponsored subdivisions providing building lots and (generally minimal) services or utilities for low-income owner-builders."(16)

The term is customarily applied to a wide range of projects, including:

"Raw land, subdivided into plots, with a common water tap serving a number of plots, common latrines, and unpaved streets.

"Plots, each serviced by a water tap and with its own latrine, septic tank or sewer connection.

"Plots, each serviced as above and with a small outbuilding containing the core facilities.

"Plots, each serviced and with a partly finished house, which could be a plinth, a plinth with supports and roof, or one complete room upon which additions can be made."(17)

Given this variety, it is appropriate to identify those elements of the approach which are essential components and those which are variable or optional. The International Bank for Reconstruction and Development (IBRD) defines the following elements as essential:

- a) building plots for dwellings
- b) water supply
- c) waste disposal
- d) access ways

- e) street lighting
- f) surface water drainage (18)

The last five items are often referred to as urban infrastructure or "on-site" infrastructure. The IBRD defines the following components as variable, meaning they may be excluded only if similar services are already being provided within the project region at levels sufficient to meet the project's needs:

- a) social services such as health centers, schools, community centers, police posts and recreation areas. These services are normally provided by the sponsor of the project.
- b) sites for industrial and commercial activities such as markets and workshops for light industry. These sites are normally developed by private interests.
- c) primary, trunk or "off-site" infrastructure required to link the project site with the city-wide service networks, viz., roads, sewers, water, electricity.
- d) transportation services such as local buses.

Finally, the IBRD defines the following elements as optional, meaning their exclusion should not render the strategy ineffective:

- a) core units on the building plots, consisting of rudimentary sanitary and washing facilities or part of a habitable room.
- b) financial credit to the occupants of the project to facilitate dwelling construction or the expansion of employment opportunities.
- c) technical assistance both at the level of managing the project and at the level of building individual dwellings.

By taking a more "process-oriented" view of the sites and services

approach, one can appreciate the importance of a well-developed management system required to organize the efforts of the project sponsor to ensure that they mesh with those of the participants and vice versa. Figure 2.1 illustrates the conventional relationships between the major tasks which have to be carried out by the sponsor to provide the physical, social and economic environment conducive to self-help or self-managed community development. The diagram in Figure 2.1 can be examined in four interconnected parts, each one dealing with a different set of tasks:

- identifying potential project participants
- planning, designing, and constructing the project infrastructure
- matching participants to the infrastructure
- supporting the participants development of the community

Let us examine each set in turn. Identifying potential project participants has been described as an exercise in "market analysis".(19) Conventionally, socio-economic surveys are carried out to identify the population group which cannot afford housing in the private market but who nonetheless want to own a house in an urban setting. A "target population" is defined within this group by means of allocation criteria which describe the required characteristics of need, and ability and willingness to pay. The sponsor requests applications for plots from the target group and these are reviewed for eligibility on the basis of the allocation criteria. Ineligible applications are rejected and eligible ones are retained for inclusion in the process of plot allocation.

The planning, design and construction of the project infrastructure is contingent upon the identification of the target population since

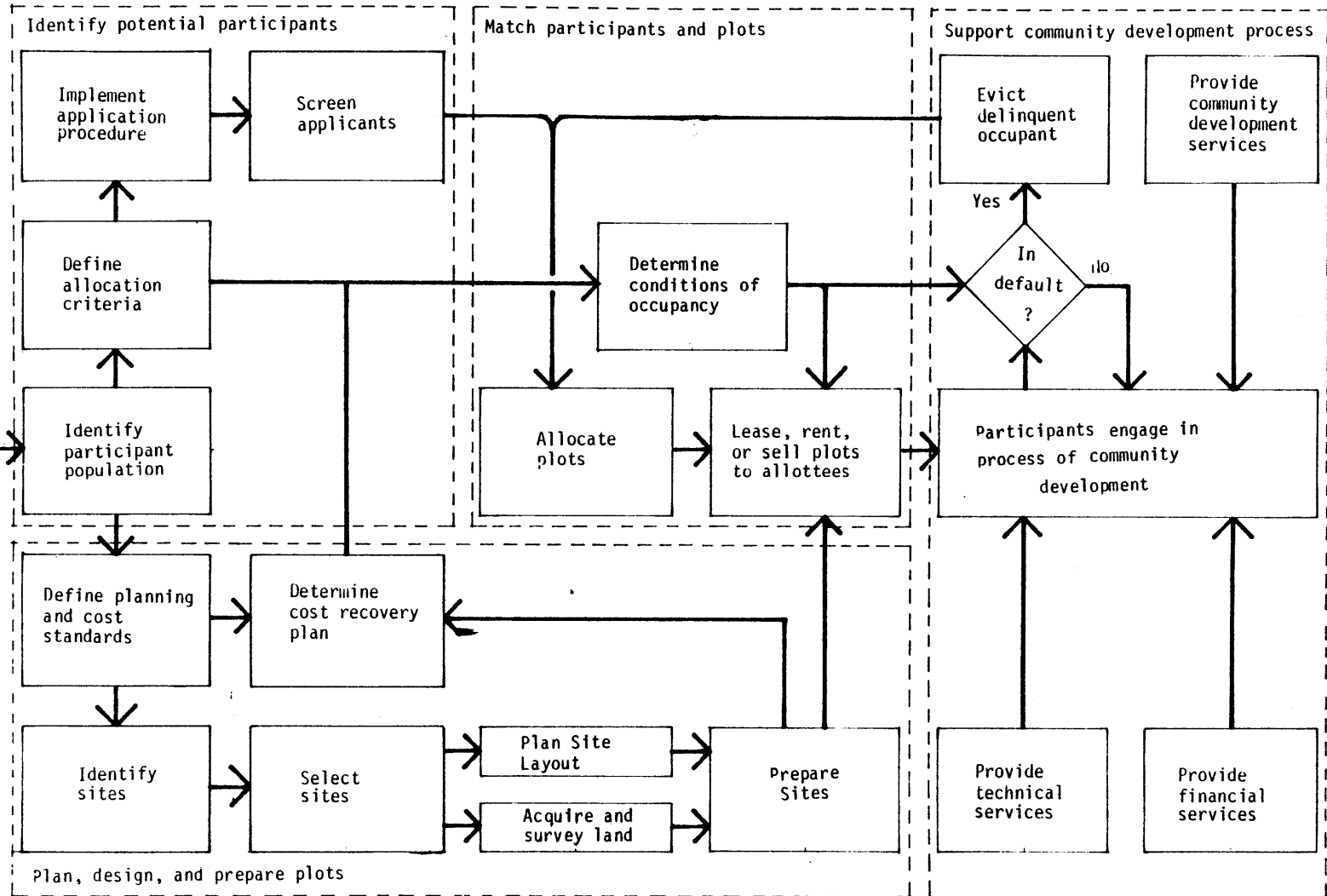


Figure 2.1 Major Tasks for Implementing a Sites and Services Scheme

project components and physical planning standards are determined primarily on the basis of the projects overall ability to pay for itself. Suitably located sites are identified and selected based on, inter alia, proximity to employment centers, topography and acquisition costs. Physical and financial plans are drawn up while the land is being acquired and surveyed. After the relevant procurement procedures have been completed (e.g., international tenders for internationally financed projects) the urban infrastructure is put into place. In addition, the social services provided by the sponsor are established and the sites are prepared for residential, commercial and industrial activities to be initiated by private resources.

The serviced sites are allocated to eligible applicants (either as individuals or as groups) in a process which matches needs with available infrastructure. Where demand for plots exceeds the supply, a method of impartial participant selection is required. Ballotting techniques which randomly assign applicants to the plot type of their choice are sometimes used. Formal legal agreements are concluded between sponsor and participants. The conditions of lease, rental or sale reiterate the principles of the allocation criteria. Grounds for eviction (where applicable) are spelled out.

The tasks so far described are discrete in that they are normally carried out only once for each project. The final group of tasks which provide support for the private development of the community are more continuous in nature. Essentially they provide technical, financial and community organizing services designed to facilitate the processes of physical, economic and social development. Technical services often include on-site assistance to plot holders building their dwellings. It

can involve the preparation of type-design plans for dwellings, shops and other small structures. Another common element in a technical assistance program is training of participants in basic construction skills. Financial services include the provision of credit for material or construction loans and the collection of monthly payments from plot holders. Often the administration of credit is linked to programs of technical assistance whereby standards of construction are monitored to ensure that buildings last at least as long as the repayment period. Community development services have a role to play in encouraging the formation of building groups and other forms of mutual help organizations. In addition, group organization has been seen to be an important factor in maintaining a regular pattern of loan repayments. Where financial default does occur, project sponsors are considered negligent if they do not evict the party concerned and, upon payment of compensation to the former owner, reallocate the plot to another eligible applicant.

A final continuous process which embeds the whole array of tasks illustrated in Figure 2.1 is the process of monitoring and evaluation, designed to provide sponsors and participants alike with opportunities for mid-course corrections. In the long run, results from monitoring and evaluation studies are used to improve the preparation and implementation of future projects.

The diagram in Figure 2.1 has been drawn to reflect the fact that in recent years sites and services have been seen as an effective way to promote multi-sectoral community development. The success of a sites and services project must be measured in terms of its ability to meet all the needs of the predefined participant population, not simply

the housing need.

Advantages of the Sites and Services Approach

A review of the literature suggests that preparing new tracts of urbanized land in convenient locations with basic supporting services can have numerous advantages over conventional housing strategies, especially with regard to the low-income groups (Van Huyck, 1971; Merrill and Grindley, 1973; World Bank, 1974; Grimes, 1976; Matheka, 1976; Burns and Grebler, 1977). A synthesized list of these advantages is given.

Sites and services provided dwelling environments at minimal financial cost. This economic efficiency is achieved in two ways. First, it is accomplished by granting increased scope for self-help construction of dwellings which stimulates non-monetary savings. That is, savings are mobilized directly in kind ("sweat equity") rather than through financial intermediaries. Savings and investment occur simultaneously in a process that utilizes resources that would otherwise remain untapped. Second, costs are minimized by achieving economies of scale by installing urban infrastructure over larger areas than can be covered by more expensive public housing projects.

As a consequence, sites and services are affordable by the low-income groups. Low unit costs mean that sites and services can bring about a more equitable expenditure of government funds. What little resources there are can be spread over many more people. This achieves more horizontal equity (among all low-income groups) and more vertical equity (between the rich and the poor). As a result of this equity, finances may be more readily available from external financing agencies for sites

and services than for other types of housing expenditures which favor middle and high income groups. By spreading a smaller investment per unit over many more households, sites and services can lower the investment risk. In other words, sites and services projects are bankable projects, from the point of view of the sponsors. Affordability and bankability contribute to making a strategy of sites and services a replicable strategy. If schemes are designed to be within the occupants' capacity to pay, there will be little or no element of net subsidy and hence projects will be self-liquidating. Replicability is a necessary criterion if the strategy is to have any long-term impact on the problem of providing the low-income with access to urban services. Replicability facilitates the massive application of the concept with beneficial effects on the stability of the low-income rental housing market.

Sites and services are applicable to all income groups, not only the poor. The approach can therefore be used to encourage the spatial integration of different income groups by creating community developments catering for a variety of economic interests. There need be no ghettos for the urban poor.

The sites and services strategy is an adaptable approach to public intervention in meeting the residential needs of the low-income groups. Schemes can be designed to provide different kinds and levels of services at different times in accordance with people's needs. It also can adapt to local market conditions, thus maximizing the use of local resources.

Catering for occupants' priorities gives them more control over the method and speed of construction of their dwelling. This form of consumer sovereignty helps foster a sense of self-reliance. This in

turn will encourage the generation of more non-monetary savings through self-help employment.

Transferring the decisions concerning investment in private dwellings to the occupant households makes sites and services projects administratively simpler than conventional housing projects.

A review of the same literature reveals that sites and services have many advantages over traditional squatter settlements. Sites and services projects provide a more habitable dwelling environment with at least minimal urban services. The provision of minimal services in an organized layout provides greater opportunities for subsequent upgrading. Sites and services schemes are thus improvable at lower costs than squatter settlements.

The implementation of sites and services schemes increases the likelihood of creating efficient new townships within more efficient urban development patterns. They impose a restraint on the growth of unplanned squatter settlements. They provide local authorities with a controlled development within their areas of jurisdiction.

The provision of security of tenure creates homeownership. This fosters a sense of dignity and belonging which can form the basis for community development. It creates the incentive for personal investment in the family dwelling.

Finally, sites and services projects stimulate the local economy by triggering a multiplier effect associated with the expenditure on goods and services required to construct dwellings. The provision of credit in the form of material or construction loans is a major contributor to this effect.

Disadvantages of Sites and Services

The criticisms of sites and services found in the literature emanate from a broad spectrum of ideological persuasions, ranging from the liberal reformist to the extreme radical (Turner, 1977; Peattie and Doebele, 1976; A.C. Lewin, 1976; Merrill and Grindley, 1973; Cooper and Lybrand, 1977; Hans Harms, 1976; Diego Robles Rivas, 1974; S.T. Roweis, 1972). The criticisms can be grouped under five different headings.

First, sites and services are alleged to have adverse impacts on the spatial distribution of the urban population. The mechanisms by which the participants are selected is criticized for inducing a "creaming effect" on the population. Where selection is based primarily on the ability of participants to pay for their housing, it is believed that society runs the risk of being stratified by income group. The poor are segregated from the rich in ways which rupture the economic linkages between social classes. More extreme critics have argued that by attracting the better-off and more organized residents from squatter settlements, the latter are left weakened and are therefore more prone to economic and social stagnation. In addition, sites and services are charged with relegating the poor to the periphery of cities where large parcels of land are cheaper and more easily available than in the city centers.

Second, sites and services projects are sometimes criticized for their undesirable effect on the spatial distribution of wealth both within and between regions. Intra-regional disparities are exacerbated when the benefits do not accrue to the low-income groups. In the past,

schemes have been penetrated by the middle class which gains control over land, capital and other construction inputs, including technical assistance. In some cases, projects have been too expensive for the low-income. In such cases, the aim for no subsidy has been termed unrealistic. Inter-regional disparities can be accentuated if projects attract migrants and capital from the rural areas.

A third category of criticism objects to the effects which sites and services projects have on urban form. Schemes have been condemned for being too large, too low density and too slow to consolidate into aesthetically pleasing pieces of urban real estate. As a result, they have been called "planned slums". Where they induce rural-urban migration, they are blamed for accelerating the growth of squatter settlements.

Fourth, a number of operational weaknesses are cited. Projects have been criticized for their lack of administrative finesse. Where professional salaries are up to ten times those of project participants, project administration is judged too expensive. The limited availability of technical assistance and community organizing skills restricts the feasibility to undertake large projects. If projects are large, they tend to create administrative, planning and co-ordination problems amongst inexperienced personnel. Projects are criticized for not having the training element needed to create the administrative and technical skills required to replicate the strategy. Where municipal revenues are low and community organization is weak, project maintenance is alleged to be poor. Inadequate collection mechanisms lead to massive defaulting on monthly payments. Even Turner himself has criticized sites and services for providing too limited a choice of services to the

consumer/participant. He fears that sites and services programs:

"may prove to be effective instruments in the hands of oppressive governments, unless.....the consequently increased focus on the social use of finance, land and infrastructure leads out of the categorical program syndrome - the assumption that the problem is to provide categories of people with classified bundles of housing goods and services."(20)

The desire for administrative simplicity and control tends to reduce the variety of available services and consequently projects do not meet the priorities of the low-income groups.

A final category of criticism, the most radical, objects to sites and services and the associated concept of self-help on the grounds that they perpetuate the existing social structure of society and hence are socially unjust and exploitive. The unequal application of policies governing plot sales and subletting, for example, create one law for the rich and one for the poor. Individual and mutual self-help efforts to construct dwellings are criticized for effectively subsidizing those income groups who do get full housing services from the government. Moreover, Rivas, speaking in the context of Peruvian squatter settlements, has objected to the use of self-help which is oriented only towards increased welfare and not "towards the (participants') basic interests such as increased income levels, opportunity for stable occupation and active participation in the urban productive structure."(21) The sites and services strategy, by accepting as given the existing pattern of control over the means of production, treat only the symptoms of rapid urbanization and not its causes. Roweis finds the proponents of the theory behind sites and services guilty of "advocating the goodness of the very system (capitalist market economy) which generates and reproduces the problems they set out to solve."(22)

Before going on to examine the case of the Dandora Community Development Project in Nairobi, let us first outline the basic features of Kenya's urban situation. This is the subject of the next chapter.

Chapter 2 - Notes

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Chapter 3

Urbanization in Kenya

Introduction

There is a large and growing body of historical and social science literature on low-income urban settlements in Kenya (Stren, 1976; Wachtel, Janmohamed, Memon, and Wachtel, 1974). This literature indicates that Kenya has much in common with other black African countries, especially those with a British colonial heritage. These common features include the relative absence of urbanization before the colonial era, the development of urban system dominated by a single city and geared to the efficient production and exportation of commodities to larger world markets, a high rate of population growth, a low rate of urbanization, and strong similarities between colonial and present day policies of capitalist economic development. It is beyond the scope of this chapter to review this literature in detail. Rather, the salient points of Kenya's political, social and economic systems will be described to provide the relevant background against which to view the unfolding of the Dandora Community Development Project. Some of the major socio-economic characteristics of Kenya's urban population are outlined to illustrate the nature of the demand for urban services, particularly housing. The country's urban development policies are briefly discussed to indicate the intended role of sites and services as a strategy for meeting these demands. Where possible, the description will focus on the situation in Nairobi, the location of the

Dandora Project.

Major Socio-Economic Characteristics of the Urban Poor

There has been no official attempt to define exactly what income groups constitute the low-income group in Kenya. Conventionally, the urban poor have been defined as the lowest 40% of the urban population when ranked according to household income.(1) Accurate income distribution data are notoriously difficult to acquire and any interpretations based on them must be made with caution. The plethora of income distribution studies carried out in Kenya over the last ten years has suffered from a number of methodological and sampling weaknesses (Household Budget Surveys, 1968, 1969; International Labour Organization, 1972; Nairobi Urban Study Group, 1973; Nelle Temple, 1972; F.T. Temple, 1973; Cooper & Lybrand, 1977; Hoek-Smit, 1977). These shortcomings have led to the underrepresentation of the extremes of the income distribution curve with consequent errors in the income limits which define each quintile.

With this caveat in mind, Table 3.1 is presented to illustrate the pattern of income distribution as estimated for Nairobi in 1970. A reformulation of this table by quintile reveals that the poorest 40% of Nairobi's households earns just over 10% of the city's household income, with no family in the lower middle quintile earning more than Ksh 450 (\$54) per month.(2)

One of the most important characteristics of the pre-Independence urban population was the propensity for African workers to engage in a pattern of circular migration, that is, temporary migration to an area for work, following which the worker returns home. This unstable form of labor supply was induced by the enforced separation of the workplace

Table 3.1 Nairobi Household Income Distribution (1970)

Reported Household Income Ksh per month	Households		
	Numbers	%	Cum %
0-160	11,841	9.4	9.4
161-340	20,417	16.1	25.5
341-500	23,799	18.8	44.3
501-1000	24,580	19.4	63.7
1001-1500	15,838	12.5	76.2
1501-2000	11,586	9.2	85.4
2001-4000	9,384	7.4	92.8
4001-6000	4,006	3.2	96.0
6001+	5,022	4.0	100.0

Source: Nairobi Metropolitan Growth Strategy, Vol. II, 1973, Table 4.5

Note: This information is given in graph form in Figure 5.1.

from the home by colonial laws associated with the native 'reserves', the lack of family accommodation in urban areas, and the need for Africans to participate in the wage economy if only to save sufficient money to pay the compulsory hut tax levied by the colonial regime. Two other factors cited are the relatively low opportunity cost of leaving urban employment and the high opportunity cost of abandoning what small yields could be obtained from whatever land the worker's family held, were his dependents to reside at his place of work.

Since 1963 at least one of these reasons no longer applies. People are free to migrate where they wish, constrained only by the financial costs of moving. There are thus no legal requirements calling for the separation of the home from the workplace. However, in general most other reasons do still apply, if not for the same causes then for their post-colonial equivalent: family accommodation for low-income Africans is still in very short supply in urban centers; there is still a need to

earn wage income (most easily done in the urban areas) to participate in the cash economy. Some authors have cited other reasons having to do with the initiation of young men into manhood by leaving the home for a period of work in the town (Elkan, 1967). Of course, the saving objective of the "target" migrant still obtains.(4) All of this could indicate that circular migration is still a dominant mode of rural-urban interaction in Kenya today.

However, the facts of the matter would indicate that this is not the case. Surveys in Nairobi among low-income squatters have shown that 74% of all adults had lived in the city for an average of 16.7 years.(5) Only 27% of the shanty dwellers owned land outside the city and where this occurred the land was already supporting members of the family to its full capacity. To those employed in the formal sector, the opportunity cost of quitting a job is now too high, given the increasing numbers of job-seekers. The 1969 Census reveals a decrease in the sex ratio among the Africans in Nairobi to 158 from 187 in 1962, indicating that wives are joining their husbands in the city. Increased opportunities for female employment also support this trend. This evidence of longer stays in Nairobi coupled with the lack of enough low-income housing imply two possible consequences for the poorer half of Kenya's urban population. First there must be a growing number of families who maintain two households, one in the city and one in the rural areas. Second, there must also be a growing number of families who maintain overcrowded households in the city and who pay the social costs attendant thereto. Recent studies have shown both cases to be true (Weisner, 1972; Etherton, 1971).

Weisner has shown that rural-urban kinship links have emerged which

tie members of extended families together with a continuous flow of people between the two residences. Further, his studies indicated that the Western model of progressive nucleation of the family did not obtain.(7) Another study showed that the annual remittances from urban to rural areas amounted to about 20% of urban wage income (Johnson, 1972).

Etherton's surveys of Mathare Valley in Nairobi revealed an average room occupancy rate of 4.4 people, with a room commonly not larger than 120 square feet.(8) In fact, it is possible that for those 27% who own land in the rural areas, both characteristics of family living apply: one end of the rural-urban network anchored in an overcrowded urban dwelling and the other end subsisting on a small rural land holding.

Several studies have been done to determine the nature of demand for urban housing in Kenya and the priority housing assumes in the list of family needs among the low-income. When asked in 1970, Nairobi squatters -- presumably drawn from the lowest income group -- listed their priorities in the following order:

- "Essential: 1. Food
2. Current standard of shelter on this location
3. School fees (for those with children of school age)
4. Clothes
Desirable: 5. Money to buy land
6. Money to contribute to extended family
7. Money to extend business
8. Money to build another room (possibly for rental)
9. Money to rent or buy a better house or room to live in
10. Improved transport to job"(9)

More recent studies of the low-income groups in Kenya's smaller urban centers by Hoek-Smit have supported the hypothesis that housing is not a top priority item. Her surveys revealed that the percentage of income spent on housing decreased rapidly with increases in income

(Hoek-Smit, 1977). Her results confirmed those of earlier studies.

Refer to Table 3.2.

Table 3.2 Percentage of Household Income
Spent on Rent in Nairobi (1970)

Income group Ksh per month	Percentage of income spent on rent
less than 100	47
101-200	33
201-300	15
301-400	10
401-500	10
501-750	7

Source: Jorgenson, N.O., 1975, quoted in Hoek-Smit, 1977.

Hoek-Smit's major conclusions regarding the willingness of the low-income to pay for housing and their desire for homeownership can be summarized as follows:

"1. The majority of the heads of household in the low income-groups is interested only in rented accommodation, especially those in the bottom part of the income scale, and those with a lower degree of job security. A large proportion of this group consists of one-person households. Although people with an income below Kshs 200/m are by necessity obliged to spend a large proportion of their income on rent, in the higher income groups other items on the family budget have a higher priority than the quality of the house and people confer a high value to the low rents they are paying presently. Thus, there is a high demand in the lower income groups for cheap rental accommodation, preferably as single room units.

2. Among the group with a monthly income of more than Kshs 300/m, there is a considerable interest in obtaining a house of their own, in particular among those with relatively stable employment and those who live in town with their complete family. Most importantly, these people are generally willing to spend a much higher proportion of their income on loan-repayments for their own house than they would spend on rented accommodation: up to 30% for the income group between Kshs 200/m and Kshs 300/m and decreasing to about 15% of their income for higher income groups, above Kshs 500/m 500/m."(10)

That is, people falling in the lower middle income quintile are

willing to pay Ksh 80 (\$9) to Ksh 100 (\$12) per month to own their own dwelling. People falling in the lowest income quintile are willing to pay Ksh 40 (\$4.80) to Ksh 60 (\$7.20) to rent a dwelling and eschew home ownership altogether.

Having considered the major features of the demand side of the low-income housing equation, let us now turn to the supply side. The following section reviews Kenya's response to the demand for shelter, a demand which has been estimated largely on the basis of affordability.

The Emergence of Sites and Services as a National Strategy

The first Kenyan sites and services schemes originated in the early 1960s. During that decade the approach was used on an ad hoc basis under a policy whereby the Government:

"recommended to local authorities the development of sites and services housing schemes in which the local authority equips suitable areas with water, sewers and roads, and homeowners build their own houses under close supervision."(11)
(emphasis added)

By 1970 approximately 1200 serviced sites had been prepared, although the approach was not universally endorsed. The major objections to sites and services grew out of their slow pace of construction because of their reliance on self-help. At that time participants were selected on the basis of need, not ability to pay. In addition they were believed to be unsightly and plot ownership tended to concentrate in the hands of the middle income groups. In 1967 the Chief Architect of the Central Housing Board was quoted as saying:

"Most towns have back areas which can be used for sites and services schemes where they will at least be hidden from the sight of the majority of the population."(12)

Despite these official reservations, the concept was given further

recognition in the National Development Plan for 1970-1974:

"These schemes will be a significant part of the housing program in urban areas. If no alternatives are available, the lowest income families will build the temporary houses they need anyway, as witnessed by the large expanding illegal squatter areas near the urban centers. It will be the responsibility of the local authorities and the National Housing Corporation to ensure that this activity is channeled into proper self-help schemes on serviced sites, lest the task of removing them or providing them with services later on becomes a grave problem. The degree of servicing such sites will vary from the mere laying out of the sites for houses and spaces for communal facilities to a fully developed services system commensurate with the type of community envisaged."(13)

(emphasis added)

By 1971 it had become clear that the existing public institutions responsible for providing urban housing in Nairobi had begun to manifest a distinct bias in favor of serving the needs of the middle and upper income groups. Figure 3.1 illustrates the misfit between the supply and demand for public housing in Nairobi between 1968 and 1971 as determined by Temple:

"It is apparent that virtually nothing was built by the public sector between 1968 and 1971 which fell within the means of the poorest third of the African population, that the middle third of the African households was disproportionately favored by the public sector program, and that the top third was only very slightly underserved."(14)

The sample used for this analysis severely underrepresented the low-income groups and therefore Temple's "poorest third" can be assumed to be an optimistically small fraction of the total population. One measure of the continuing shortage of low-income housing is the overwhelming response to invitations to apply for forthcoming plots created under the national sites and services described below. A report in one of Nairobi's daily newspapers reported the following incident:

"The critical shortage of houses in Nairobi became evident yet again when thousands of people formed long queues outside the

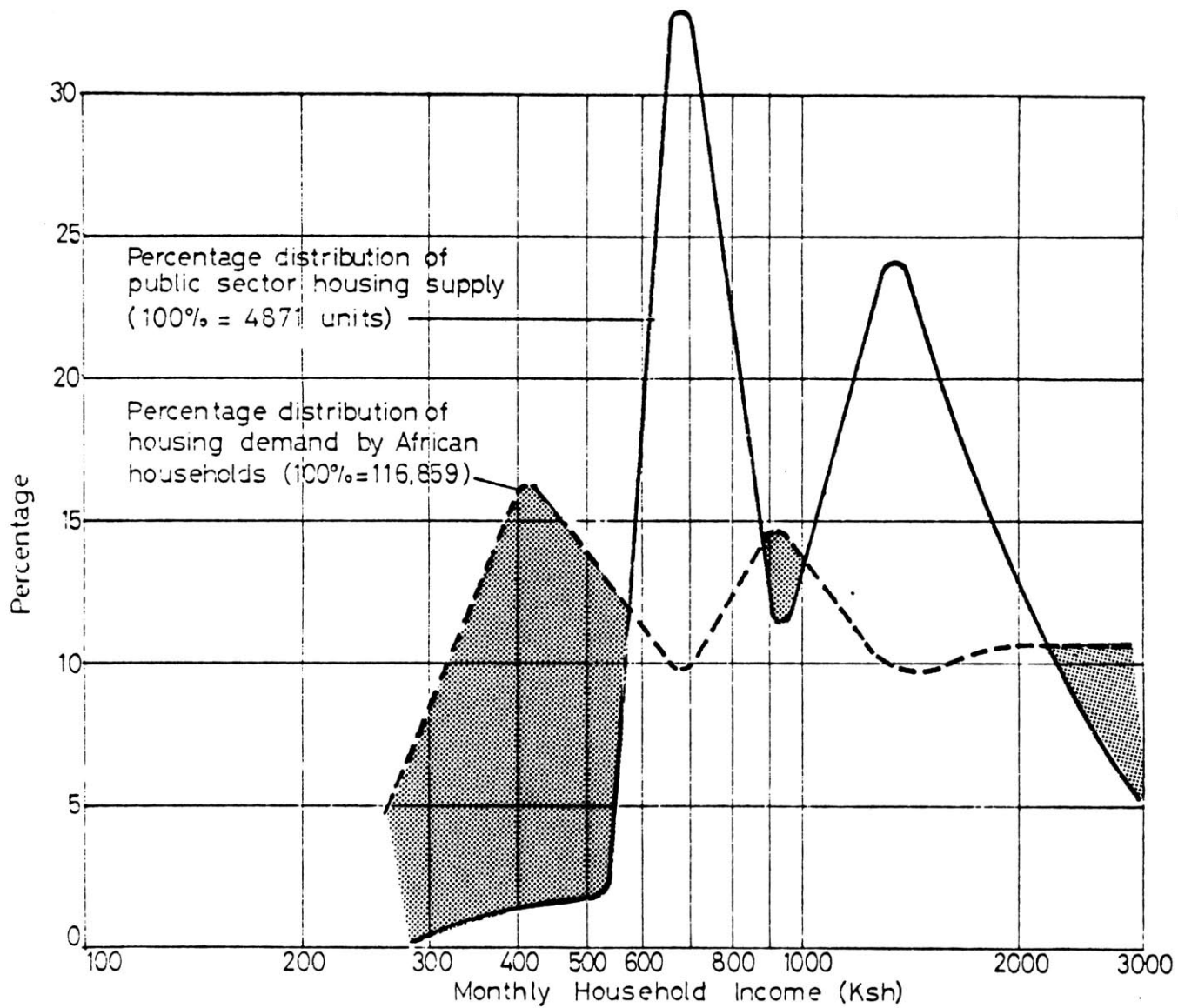


Figure 3-1 Distribution of Nairobi Public Housing Supply and Demand (1968 - 1971)

Source: Temple, 1973, table V-9.

offices of the National Housing Corporation on Friday and Saturday to buy application forms for 512 serviced plots being offered by the corporation at Kibera.

There was so much jostling for position in the queues that police had to be called to control the crowd. The glass partition between the applicants and the cashiers was shattered by the crush.

Only a relatively small number of the crowd was served and similar queues are expected for several days from today. Completed application forms, being obtained at payment of Shs. 10, are to be returned before September 17 at the Corporation's payment office."(15)

Temple's data supported two unambiguous conclusions:

"First, public sector housing output in Nairobi since Independence has been too small to meet the housing needs of a growing populace not satisfied by private formal sector construction; actual public sector output has also been much smaller than planned targets. Second, the public sector program has catered much more to the city's middle and upper income groups than to its poorer inhabitants. The inadequacy of public and private formal sector housing construction to meet the needs of its growing population, especially of the poorer residents, has forced many of them to rely on the informal sector to meet their shelter problems. It is therefore not surprising that the most comprehensive survey of informal housing development concluded that 'one third of Nairobi's population lives in uncontrolled and illegal housing' (Etherton, 1971)."(16)

Temple attributes the cause of the middle class bias in part to:

"the city's closed political style (which) favors middle and upper income residents over the poorer masses. Because elections are relatively unimportant and the dominant party is disorganized, the poor are unable to translate their numbers into political power. The poor lack the resources -- education, wealth, contacts, and jobs with discretionary control over potential favors -- which permit the city's emergent elite to take advantage of personal contacts to make demands on the Government."(17)

Other factors which help explain the bias include an attitude among the national elite that high housing standards are synonymous with 'modernity', that low housing standards schemes may become obsolete before they are fully amortized, and the disproportionate rise in construction costs compared with incomes.

The National Development Plan for 1974 to 1978 was even more

concrete than either of its two predecessors in prescribing a commitment to a program of sites and services. It earmarked Ksh 520 million (\$72 million) for the preparation of over 72,000 serviced plots in the 36 largest urban centers in the country.(18) This commitment stemmed from the Government's overall approach to urban development, which was characterized by the following objectives:

- " i. To achieve the maximum development of the rural areas so as to slow down the rate of migration from the rural to the urban areas.
- ii. To establish a more even geographical spread of urban physical infrastructure in order to promote more balanced economic growth throughout the nation and a more equitable standard of social services between different areas.
- iii. To encourage the expansion of several large towns in addition to Nairobi and Mombasa (the port city), thereby providing more alternatives for the absorption of the migrant population, and avoiding the problems arising from excessive concentration in these two towns.
- iv. To continue to develop a network of communications, so as to link centers of economic and social development.
- v. To adopt standards for urban infrastructure which closely relate to what can be afforded by the country as a whole."(19)

These objectives revealed an understanding of the inevitability of rural-urban migration, limited agricultural land, rural-urban wage differentials of 11:1, and the dissatisfaction of school leavers with rural occupations. They disclosed a recognition of the fact that rural development would not eliminate the influx of job-seekers to the cities and towns. The Government saw past policy failures not in the continued stream of immigrants, but in the lack of housing and social services made available to the new arrivals. Government viewed the solution to the problem as lying in the successful implementation of a national development strategy based on the concept of 'growth centers' to coun-

teract the primacy of Nairobi and Mombasa.(20) Kenya recognized the need for creating more urban jobs but reasoned that the inability to eliminate all unemployment in the short run will "influence the nature and targets for development of certain areas within the towns."(21) From this statement, coupled with objective v. above, one can infer that a relaxation of the standards of the built form was to be tolerated where it could be shown that conventional standards could not be afforded. This element of pragmatism in Kenya's philosophy of urban growth provided the rationale for including a sites and services program as one element of the strategy for growth center development.

The Sites and Services Adviser to the National Housing Corporation, the implementing agency for the program, stated that the program was expected to:

"offer through controlled and phased housing development a realistic way of housing low income families, thereby reducing the element of squatting;

provide the plottolders with an opportunity to earn extra income and at the same time create additional rental accommodation for those unsuccessful applicants and families with even lower income;

increase the speed of housing development via the availability of a materials loan combined with the fact that semi-permanent and temporary materials may initially be used for construction;

spread the benefits to a wide group through the buying of locally made materials by the plotholder from small shops and traders and the employment of traditionally skilled labor; and

encourage the plotholder to invest in his house and its gradual improvement."(22)

As currently conceived, the program calls for projects to be located in existing urban centers to meet the needs of existing urban residents. It is thus first and foremost a strategy of accommodation directed almost exclusively at the need to provide shelter.

This chapter has identified some of the major features of the supply and demand for low-income urban housing in Kenya. Reference was made to a number of studies which indicate that there is a large demand for cheap urban accommodation and that, to date, very little of this demand has been met by the public sector. The low-income have taken to sheltering themselves in ways which match their own priorities but which conflict with the values held by the country's housing planners. A national program of sites and services has been designed to better match public resources and values with the needs and demands of the country's low-income groups.

It is important to state at this point that the Dandora Project was technically not a part of the national sites and services program announced as part of the National Development Plan for 1974-1978. Dandora was conceived during the plan period of 1970-1974 as an experiment in the large scale application of sites and services in Nairobi. It was viewed as a pilot scheme which, if successful, would lead to future projects of similar size in other Kenyan urban centers. Dandora was envisioned not only as a source of new low-income housing, but it was also seen by its planners as a vehicle for comprehensive community development which could meet almost all the needs of the urban poor as expressed in their list of priorities. In this sense Dandora represented a conceptual advance over the national program which was enunciated almost exclusively in terms of providing shelter. Whether Dandora succeeded in playing this enhanced role will be left to a later chapter.

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Chapter 4

A Chronological History of the Dandora Project

Introduction

The evolution of the Dandora Project can be traced through five consecutive but sometimes overlapping stages of development. These stages -- designated Definition, Preparation, Appraisal, Implementation and Occupation -- span a total of eight years beginning in 1970. A summary of this chronology is given as an Appendix. Each stage reveals a gradual diminution in the emphasis placed on non-housing services and an increasingly restrictive interpretation of the 'autonomous housing principle'. The aim of this chapter is to analyze each of these changes in emphasis and interpretation with a view to understanding the process by which Dandora was implemented.

Project Definition: November 1970-December 1972

By 1970 the population of Nairobi had grown to 540,000, an increase of 220,000 since 1969. This rapid rate of expansion had generated a number of growth-related problems which included an inadequate water supply, traffic congestion, widespread unemployment, and a growing shortage of low-income housing. Attempts to identify and attend to each of these problems were made on a piecemeal basis by the Nairobi City Council. (1) The fragmentation of this approach, coupled with the growing fiscal crisis within the City Council, induced the Town Clerk to promote the idea of a comprehensive metropolitan development study. It was hoped that a coordinated effort to define Nairobi's future growth pattern

would help to identify the development projects required to accommodate this growth and attract the international capital needed to finance the identified projects. Thus, with the financial support of the central Government, the United Nations Development Progr , the National Christian Council of Kenya and the University of Nairobi, the City Council established the Nairobi Urban Study Group (NUSG) in November 1970. The Study, an acocunt of which is given elsewhere (2), was intended to produce "a preferred strategy for the long term physical growth of the greater urban area" and "prepare urban structure plans for the medium term (1979-1985)".(3) In addition, a short term plan was required which could be converted into a capital improvements program. The Study Group consisted of about fifteen professionals -- mostly expatriate --, a few Kenyan trainees and a small group of support staff. A budget of U.S. \$750,000 was allocated and the work was programmed for completion in early 1973.

During this same period, the International Bank for Reconstruction and Development (IBRD) was rethinking its policy on development assistance for housing and other 'non-productive' investments in urban infrastructure. In recognition of the fact that "development means more than just the expansion of output...the Bank decided to supplement its activities in individual sectors with a more direct focus on the problems of urbanization."(4) The Special Projects Department (later split into the Transportation and Urban Projects Departments) was created and its senior officers were actively seeking out opportunities to finance projects which would improve the patterns of urban transportation, land use and housing in the urban centers of developing countries. Reconnaissance missions to Nairobi in 1969 and 1971 had alerted the Department

to the possibilities of a suitable project.

The City Council's desire to attract foreign capital and the IBRD's desire to supply it under appropriate lending conditions led to an agreement between the two parties in March of 1971.

The IBRD agreed to review the Urban Study four times a year to ensure that it contained planning proposals which were congruent with the current lending policies of international aid agencies interested in supporting Kenyan development. These agencies were willing to finance projects which gave consideration to questions of economic equity as well as growth. Their lending policies, unlike those of the 1960s, required development programs and projects to have income redistribution in favor of the low income groups as a major objective. The IBRD review of the NUSG was designed to ensure that the redistributive objective was a cornerstone of Nairobi's urban growth strategy.

In return, the City Council agreed to prepare a pre-feasibility study for a comprehensive urbanization project. The project was to involve the provision of serviced sites for low-income residential and community facilities and squatter upgrading. The pre-feasibility work was to be undertaken in parallel with the Nairobi Urban Study. Nevertheless, it was to be carried out within the basic guidelines of scope, scale and beneficiaries determined by the larger Study. Temple has characterized the NUSG as lacking organization, leadership and appropriate methodology.(5) Whatever its inadequacies, by late 1971 agreement within the Group had yet to be reached on such basic issues as the boundaries of the study area.

In view of this inauspicious beginning, the Deputy City Engineer initiated the preparation of an interim urbanization project, pending

further guidelines to be received from the Urban Study. Working with staff from his department and students from the Department of Architecture at the University of Nairobi, he prepared a draft report calling for the development of a community for 60,000 people to be located on one of several possible sites in the City's eastern area. The report, entitled "Interim Urban Projects - A Preliminary Proposal" and referred to as the Interim Report, was completed in March 1972. Drawing on information collected in socio-economic surveys initiated by the Urban Study, it outlined a project what would:

"bring together the necessary components of employment, shelter and community action - linked by communication and utility service systems."(6)

The 'target population' was defined to be those families earning less than Ksh 500 per month (\$60). The goals of the project were described as follows:

- "(a) to provide access to land and security of tenure on a long-term basis (10,000 plots), primarily for residential use, with supporting community facilities including schools and clinics;
- (b) to control speculation and profitmaking at the expense of the low income sector;
- (c) to stimulate employment opportunities and industrial and commercial activities by assisting in the organization of local residents associations as for credit, purchasing, equipment, training of special skills, management, legal assistance, and marketing outlets (one of the obvious outlets being the new communities mentioned in this proposal);
- (d) to provide a framework within which residents can develop their own plots by promoting the organization of local resident associations to administer the development of housing units and utility networks -- these associations being under guidance of the quasi-private administrative institution proposed in this document; and
- (e) to provide communication and utilities channels which will stimulate transportation routes, and investment in, residential, industrial and commercial activities, both within and near new communities."(7)

The goals were to be achieved by the following means:

- "(1) acquisition and preparation of 10,000 plots to serve as sites for 20,000 rooms (10,000 housing units of two rooms each), to accommodate an estimated low income population of at least 60,000;
- (2) formation of a Financial Institution specializing in loans, for materials and equipment, to the builder-leasee of 'incremental investment' housing on these plots. This institution could also construct some of the dwelling units itself and rent them to qualified occupiers; and
- (3) provision of manufacturing facilities - both plant and equipment in the case of the larger facilities."(8)

The housing component of the project was to have the following characteristics:

- "(a) All services other than those pertaining to the preparation of the plots will be provided by the City Council as part of its regular responsibilities and will not be charged to the project. This means that the costs of health facilities, circumferential roads (other than those needed for the direct implementation of the project), educational and social facilities will be borne by the City Council budget and only partly covered by charges and taxes paid by the inhabitants of the 10,000 plots;
- (b) The built-form, while circumscribed by the nature of materials and equipment provided, will be left to the discretion of the builder-leasees, subject to regulations pertaining to safety and sanitation. Design and production assistance will be necessary to ensure sound investment by the individual;
- (c) The Financial Institution will be a quasi-private body with powers of eviction, transfer of title, loan moratoria and renewal. The Financial Institution will procure building materials and the equipment necessary to construct the housing unit. It will then make loans -- in-kind in the form of materials and possibly equipment (at an interest calculated to cover its administrative expenses) to the builder-leasee. These loans will be repaid over a period of up to 25 years. The Financial Institution will also act as agent for the Nairobi City Council for purposes of collecting the plot rent. This will facilitate payment by the builder-leasee and reduction of administrative expenses;
- (d) The tied loans will be granted in amounts sufficient to enable the construction of a two room dwelling on the plot. The builder-leasee will construct the housing unit, perhaps in cooperation with other such individuals as local resident associations. At least one of the rooms built will be occupied

by the builder-leasee, while one of the rooms could be rented by him to another qualified occupant. The responsibility for repayment of the loan and for payment for water, sewerage, refuse disposal and other chargeable services will rest with the builder-leasee; and

- (e) An attempt will be made (in a way yet to be determined) to relate the supply of building materials and equipment to the manufacturing facilities contemplated under (3) above."(9)

The intent was to formulate a project based on John Turner's thesis of incremental community development largely under the control of the builder-leasee or participant population. Turner had visited Nairobi in 1971 and had met with members of the working group.

The omission of a possible upgrading component, the total absence of the term 'sites and services' and the proposal to establish a Financial Institution "specializing in loans for materials and equipment...(and which) could also construct some of the dwelling units itself and rent them to qualified occupiers"(10) can be construed as an attempt to minimize the anticipated political opposition to the thinly disguised proposal for a community development based on the site and service principle. The report clearly articulated the choices open to policy makers as to the mode of development for the housing component: the INSTANT solution whereby dwellings are entirely contractor-built, and the INCREMENTAL solution whereby the homeowner improves his dwelling as and when family priorities permit. Without belittling the value of the instant solution, the report strongly recommended the incremental approach as being the only realistic one for housing Nairobi's urban poor. In an apparent attempt to leave room for negotiation, the report "outlines the project merely as a basis for discussion and in order to ascertain the interest of the IBRD in a project of this type."(11)

The IBRD was indeed interested. In February 1972, a mission had

reviewed the draft report and considered it sufficiently promising to declare a site and service scheme high priority for Nairobi.(12) At this time the IBRD was preparing the final appraisal report for its first sites and services project, consisting of 15,000 plots in Senegal, and was eager to support similar projects in other developing countries.

The Kenyan Government was much less interested. In February 1972, in contradiction of the 1970-1974 Development Plan, a high-level meeting of civil servants vetoed the idea of urban sites and service schemes in Kenya.(13) The decision was taken on the grounds that such projects were aesthetically unpleasing and that plots ended up being owned by middle- and high-income absentee landlords. This negative impression of sites and services was formed largely on the basis of the Kariobangi Project implemented in Nairobi in 1964. This project allocated plots on the basis of need and not ability to pay and therefore took several years to consolidate.

The following month the report was submitted to the Ministry of Local Government (MLG) for approval and onward transmission to the IBRD. Under the circumstances, the Ministry was loathe to endorse the proposal. Indeed, it had withheld approval of the whole exercise since the middle of 1971, when the pre-feasibility study was proposed. After three months of deliberations, however, the MLG finally approved the project. Temple has surmised that rather than jeopardize the funding of several other development projects then under consideration by the IBRD, including the new \$60 million airport, the new Kenyan Government reversed its decision on Nairobi's proposed urbanization project.(14) In September 1972, the study was sent to the IBRD for formal acceptance. In November 1972, a review mission from Washington recommended that a full-scale feasibility

study be carried out with a view to preparing a detailed project proposal for IBRD financing.

Project Preparation: January 1973-May 1974

In response to the IBRD recommendation, the Town Clerk of the Nairobi City Council formed a Housing Task Force (HTF) to undertake the preparation of the detailed project proposal. The Task Force was composed of an Action Group consisting of full-time administrative staff and three Working Groups made up of part-time technical specialists assigned from various departments with the City Council.

The long term objectives of the HTF were defined to be:

"the increase in the supply of serviced sites in the City to a level adequate to meet the demand. (This involves)

- (a) Establishing an organization and linkages between involved authorities which are capable of the project (sic) and capable of being expanded to meet the full demand.
- (b) Developing the (designated areas of the City) in such a way that plots for housing and infrastructure and community facilities are available to the low-income groups which are not otherwise catered for."(15)

The Action Group was chaired by a member of the City Engineer's Department. The British Overseas Development Administration provided a Technical Director to lead the study. A counterpart Director was assigned from the City Engineer's Architect Section. The remainder of the Action Group consisted of representatives from each of the three Working Groups, an administrative officer and a secretary. Working Group I was responsible for liaison with the Nairobi Urban Study Group to ensure that the project conformed with the development goals adopted for the City as a whole. Group II was responsible for the preparation of the physical design. Group III was responsible for the development

of the administrative procedures needed to implement the scheme.

The Technical Director of the Task Force took up his duties on January 27 1973. A program of activities was drawn up calling for the completion of the report for submission to the IBRD in June of 1973. From the start, the work was plagued by many of the same issues which hindered the preparation of the Interim Report and which continued to impede the progress of the Urban Study. The three most important factors contributing to this situation were lack of leadership, lack of manpower, and a major debate on physical standards.

The Technical Director, recruited on two months notice from abroad, was never accepted as the team leader by members of the Task Force. Many of the Senior Officers, both expatriate and local, had extensive knowledge and experience of the Nairobi situation and resented the intrusion of a newcomer in a position of authority. When his six-month contract expired in June, the Technical Director left, the majority of his tasks still unfinished. With his departure, the chairman of Working Group II emerged as the driving force behind the project and he eventually became the Deputy Project Manager.

The lack of qualified manpower was a problem shared by the whole of the City Council. Recruitment of technical personnel was difficult in the face of much higher salaries offered by the private sector and central Government. The creation of the HTF increased the burden on the existing staff who, for the most part, were limited to part-time duty on the project. Their other responsibilities included the daily running of departments and, in some cases, contributing to the ongoing Nairobi Urban Study.

Progress within the HTF varied from Group to Group. Group I

consisted largely of its Chairman, who was responsible for liaising with the Urban Study in an attempt to define the scope and scale of the project and its intended beneficiaries. Since progress within the Urban Study Group was minimal, meaningful liaison proved difficult. Group II's progress on the physical design was hindered by disagreement on the question of standards. This question is treated in more detail below. Group III tackled such questions as plot allocation procedures, the administration of materials and plot loans, and the control of legal plot occupation. They were also required to design the structure of the organization which would implement the project. These tasks involved sensitive questions of how to allocate the land, labor, and capital tied up in the project. Over the months a pattern emerged whereby progress was the most rapid in Group II, followed by Group III, and lastly by Group I. The pattern reflects the extent to which the tasks were defined, the degree to which the Groups were equipped to do the work, and the political sensitivity of the particular issues with which each Group had to deal.

By October 1973 a Draft Project Report was ready for discussion with the IBRD. The two-volume study contained a well-defined philosophy based on the sites and services principle:

"The Authority demarcates plots and provides basic services including water drainage, sanitation, paths, roads, electricity and telephones at a standard compatible with the ability of the plot occupants to pay.....Responsibility for the provision of housing rests with the occupants under the supervision of the Authority....Minimum dwellings consisting of w.c., store (closet), cooking space, and two habitable rooms are to be built to the requirements of the Authority within 18 to 24 months of allocation."(16)

A number of important decisions were made. A project site was selected from among those proposed in the Interim Report. A site

located at Dandora - approximately 11 kilometers north east of the city center - was chosen on the basis of conformity with the Nairobi Urban Study and easy accessibility to currently existing and planned employment centers (Refer to Figure 1.1). A land use planning concept was defined. The elongated shape of the site dictated a physical plan in which residential areas were appended to a commercial and residential spine which ran from west to east along the center of the site. The "central spine" concept became the organizing principle governing the physical planning of Dandora. The Draft Report also contained detailed descriptions of many of the administrative components of the project. Alternative proposals for allocating plots, managing material loans, and controlling the legal occupation of plots were developed. Designs for plot layouts were prepared showing alternative methods of service and house design. A preliminary financial plan was drawn up.

The Draft Report differed from the Interim Report in a number of significant and subtle ways. The selection of a specific site and the apparent need to limit the project to one site had imposed a reduction in the size of the development. The planned number of plots was reduced to 6,000 or 7,000 because the Dandora site was too small for 10,000 plots. Households participating in the program could not have an income greater than Ksh 650 per month (\$78). This represented a thirty percent increase over the maximum target income established in the Interim Report.

The Draft Report called for a comprehensive community development but with less emphasis on the creation of employment and more emphasis on the provision of housing. Rather than the concrete action called for in the Interim Report, the Draft Report -- in a kind of indicative

planning -- required that:

"trade commerce, and service industry is to be encouraged early (in the process) to serve the population and to provide employment."(17)(emphasis added)

The Financial Institution, described in the Interim Report as having direct involvement in employment creation, was transformed into an authority "whose primary function is to develop an extensive area of the City to be handed over to the City for running."(18) There was a perceptible increase in the amount of control which the City Council was to exert over the participants in the project.

The project had started the slow but perceptible process of conversion from comprehensive community development to peri-urban housing estate. This shift can be explained in part by the physical planning bias of the Housing Task Force which caused their terms of reference to be expressed in terms of the provision of shelter, not jobs. The ambiguity surrounding the goals of the Task Force is strikingly illustrated by the fact that it was sometimes called an Urbanization Task Force. Notwithstanding this confusion, it was evident that the housing objective was beginning to dominate the urbanization objective of the project.

In one respect the Draft Report represented an improvement over the Interim Report. Whereas the latter made no reference to improving existing squatter settlements, the Draft Report included provision for a study on the subject, all the while asserting that "the development of new residential areas takes priority over the upgrading of existing ones."(19) Adding to the housing stock was still the primary objective of the proposal. Government authorities were still disinclined to tackle the difficult issues surrounding the legalization of squatters.

The upgrading study, however, created the opportunity for future efforts in that direction. The IBRD was to insist that such studies be carried out as part of the community development scheme. This component of the project was given further consideration during the project appraisal stage.

In spite of the comprehensive appearance of the Report, it lacked commitment on many of the difficult and important issues. There was a lack of firm policy decisions on the questions of physical infrastructure standards. In addition, the Task Force had been unable to agree on an organizational structure for the proposed project department. The IBRD was clearly frustrated by this lack of decision on the part of the Housing Task Force. A pre-appraisal mission in March 1974 forced the issue and gave the Town Clerk a blunt ultimatum to finalize all the outstanding issues without delay or risk having the whole venture cancelled. As a result, the idea of a Final Report was dropped and priority given to filling in the gaps in the Draft Report. One of the most important missing pieces was a detailed layout of the site showing the 6,000 plots.

The conflict within the City Council over the issue of standards of physical infrastructure is one of the most crucial issues of Dandora. The debate took place within the context of the larger national debate on the value of sites and services as a housing strategy. At the time the Draft Project Report was being written there were at least two major issues involving standards. The first concerned the extent to which Dandora should cater for private automobile ownership. The second issue focused on the desire for a waterborne sewage system which provided individual connections to each plot at costs affordable to the

participant income group. Without reaching agreement on both these issues, it was clear that a detailed site plan for Dandora could not be drawn up. The two issues are of interest because of the different light each sheds on the question of standards.

The problem of waterborne sewage was of concern primarily to the technical specialists. The battle lines were drawn between the engineers in the Task Force who were designing the system and those in the City Council's Water and Sewage Department who would have to operate it. It is significant to note that at this point the opinion of the Municipal Medical Officer of Health was not sought. His evaluation of the proposal came only after the first 1,000 plots had been prepared and is discussed later. The question -- perceived purely in technical terms -- was how much could the design of the system deviate from standard Council practice in an effort to save money without creating additional maintenance problems. It was seen as a tradeoff between lower development costs and higher maintenance costs. The designers proposed locating main sewer lines in way-leaves on private property. They argued that this solution would result in significant cost savings of shs 1700 (U.S.\$204) per plot over the conventional approach which positioned mains under the streets and used long branch mains to connect the individual core units to the main. A similar proposal for on-plot water distribution was advanced, with concomitant cost savings of Ksh 320 per plot (\$39).(20) The disadvantage of the proposal was that the short branch mains connecting the core units furthest from the main had to pass under the core units adjacent to the main (see Figure 4.1). The Water and Sewage Department also argued that the proposed sewerage layout, resulting in manholes and inspection chambers deep inside

Standard City Council Practice

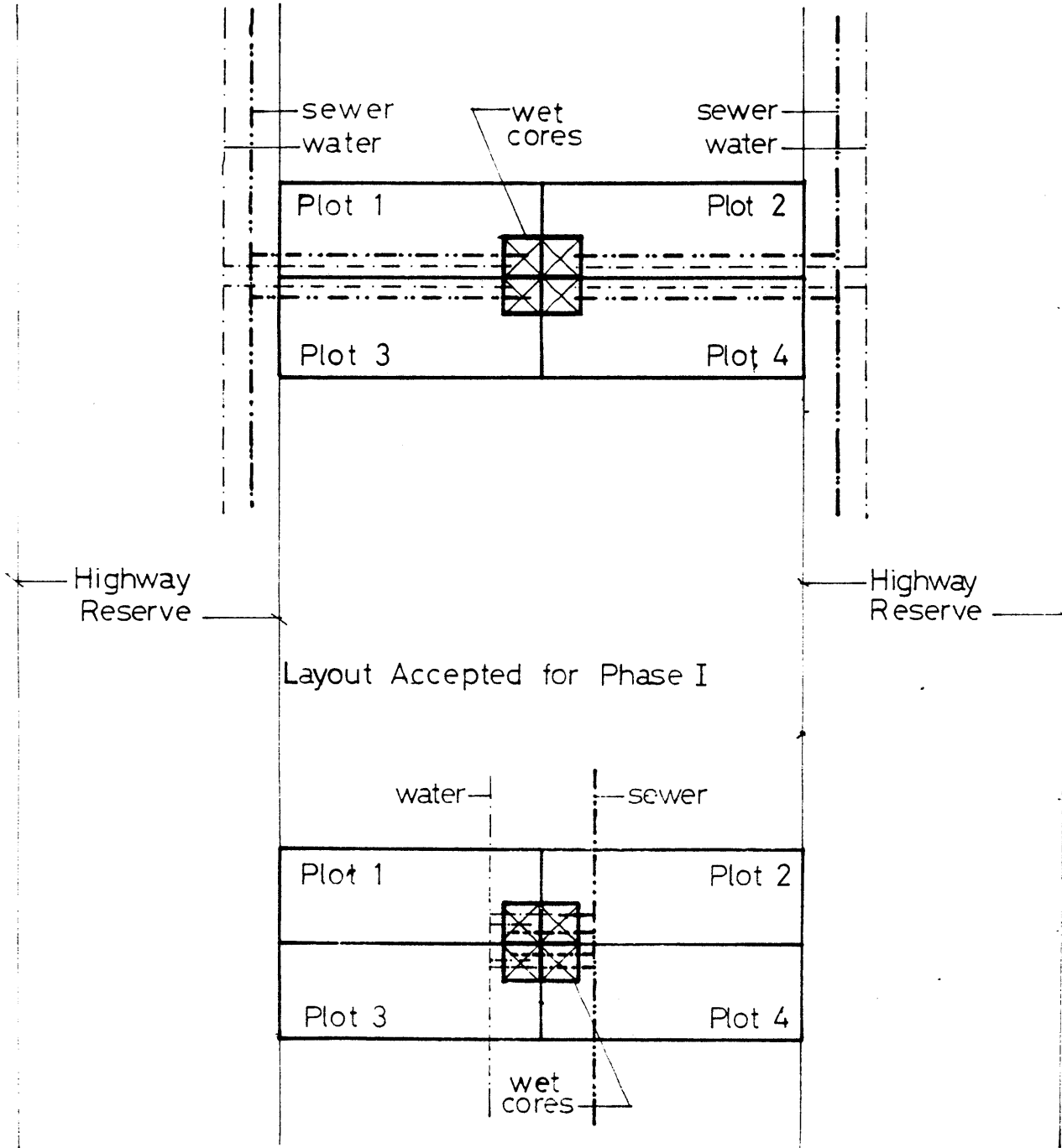


Figure 4.1 Alternative Wet Core Servicing Layouts (n.t.s.)

private property, did not allow easy maintenance of the system. In the rush to finalize the project design before June 1974, the designer's proposal was adopted with the support of the Town Clerk. Further debate was still to come, however, when the MOH reviewed the design some two years later.

The problem of accommodating automobiles in Dandora was of interest to a broader constituency. Conscious of the car as a glamorous status symbol in Kenya, City Councillors argued that every plot holder would aspire to ownership. Each plot should therefore be directly accessible by car and also large enough to allow on-plot parking. The technicians' argument against this rested on the findings of the NUSG that the probability of a household in the target income group owning a car was 3.6%.⁽²¹⁾ Assuming three families per plot, this amounted to a maximum of 110 cars per 1000 plots. The politicians were calling for a site plan which could accommodate 9 times this number. In the rush to finalize the project layout, the principle of one car per plot was accepted. The actual layout, in fact, provided 80% of the 6,000 plots with direct access from roads without intervening footpaths. Type designs for plot layouts showed spaces for car parking. Unlike the debate on standards of sanitation, the conflict could not be resolved on technical grounds alone. The issue, involving the notion of rising expectations amongst Nairobi's low income groups, had an explicit political component which gave municipal politicians the leverage to get their way. As with the sewer system, this issue would be taken up again within the year.

During this stage of the Dandora Project, relations between the City Council and central government took a turn for the worse. One of

the causes of this decline was the central government's abolition of the Graduated Personal Tax (GPT), the source of one half of Nairobi's municipal revenue. The tax collected by the City Council was levied on all employers and was assessed as a function of the wages they paid their employees. The GPT was replaced by a nationwide sales tax levied by the central Government on all manufactured goods. A temporary program of annual grants by the Central Treasury to the City Council was proposed to provide Nairobi with financial assistance until it could develop alternative sources of revenue through increased rates and rents and other municipal levies. Neither the grants nor the alternative sources of revenue have materialized. Since 1973 the Council has been incurring annual deficits on General Fund current account, with a consequent decrease in the quality and quantity of the urban services it provides. The financial crisis, coupled with the usual allegations of inefficiency and corruption, came to a head in 1976, just as Dandora was ready for occupation. The repercussions of this intergovernmental rancor are dealt with later.

Project Appraisal: June 1974-May 1975

The appraisal stage of the Dandora Project commenced in June of 1974 with the arrival of the IBRD mission in Nairobi. In the three months since the departure of the pre-appraisal mission the Housing Task Force gave the project a concerted push. It was able to finalize a physical plan for the Dandora site which satisfied the IBRD. The review of the proposed implementation organization and financial issues was undertaken in October. With the physical design of the scheme more or less agreed on, it became the primary concern of the IBRD to see that:

"the Nairobi City Council establish a working mechanism set up to run the overall housing program."(22)

Additional delays in the appraisal were caused by difficulties in defining the studies which the IBRD wanted written into the project. World Bank involvement in Kenyan economic development, going back to the late 1950s, had made the IBRD aware of many of Kenya's institutional shortcomings. Three of these deficiencies were singled out for study as part of the Dandora Project:

- (a) the structure of municipal finance in Kenya
- (b) the Nairobi City Council's organizational ability to mount an effective housing program; and
- (c) the Government of Kenya's antipathy towards the concept of squatter upgrading.

These studies were to become conditions of negotiation. There were intended to induce a process of re-education among Kenya's policy makers and open the way to long term solutions for the country's institutional problems associated with rapid urban growth.

In August 1974, the appraisal team began documenting their findings in a three-step process of report production. By October 1974 a draft report was circulating within the Special Projects Department. After revisions and departmental approval, the report was reviewed by other sections of the IBRD. These included the Financial Controller, Projects Policy, Economics, and Legal Departments. In January 1975 the final appraisal report was approved by the Loans Committee. At the same time in Nairobi the Works and Town Planning Committee, which was composed of all the Departments in the City Council, approved the content of the scheme and the structural plans for Phase I consisting of 1,000 plots. It also designated the project area as a zone governed by the Grade II

Building By-laws which permitted more relaxed standards of house construction than are required under the Grade I By-laws which govern most of the rest of the City.

After three months of detailed negotiations between the IBRD, the IDA, the Kenyan Government and the City Council, loan and credit agreements were signed on May 6 1975 by all parties.

In its final appraised form the Dandora Community Development Project consisted of the following components:

(a) New Residential Lots: The project was to provide about 6,000 lots with individual water and sewer connections and related basic services and infrastructure, including roads, security lighting, and refuse collection. The 6,000 lots included about 1,800 of 100 m², 2,100 of 120 m², 1,800 of 140 m², and 300 of 160 m² each (refer to Figure 4.2). The people to whom residential lots were to be allocated were to have leasehold tenure for a period of 50 years. Title deeds to each plot would be issued after allottees had constructed a dwelling approved by DPD. The gross density of the project was designed to be 32 plots per hectare (13 plots per acre). Plot occupancy rates were assumed to be 10 people per plot, giving gross residential population densities of 320 people per hectare. This compares with densities of 310, 291, and 271 for Maringo, Makadara and Mbotela respectively, three of Nairobi's most densely populated residential areas.(24) (Refer to Figure 1.1) The results of a land use profile analysis of Phase I of the project are summarized in Table 4.1. The proportions of land allocated to each use conform to normal standards of practice with roads perhaps a little high at 23%. This can be attributed to the high priority given to vehicular access to each plot.



Legend

- | | | |
|------------------------|--------|---------------------------------------|
| Religious Centre | r.c. | Boundary for Community Facilities |
| Health Centre | h.c. | Road Reserve / Building Boundary |
| Major Community Centre | m.c.c. | Community Facilities Built in Phase 2 |
| Community Centre | c.c. | Community Facilities grid 50x50M |
| Primary School | p.s. | Kemo Rock Road District Distributor |
| Post Primary | pp | Local Distributor |
| Secondary School | s.s. | Residential Distributor |
| Major Shopping Centre | m.s.c. | Access Road |
| Shopping Area | s.a. | Primary and Secondary Path |
| Major Market | m.m. | Turning Point |
| Sub-Market | s.m. | Car Parking |
| Light Industry | li. | Quarry |
| Workshop | w. | River and Stream |
| Administration | ad. | Future Extension |
| Post Office | p.o. | Plots |
| Police Station | p.st. | Open Spaces |
| Fire Station | f. | |
| N.C.C. Depot | ad.d. | |
| Park Area | p.a. | |
| Sports Centre | s.c. | |

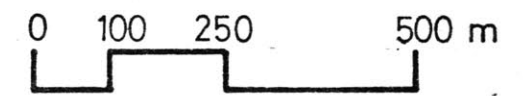
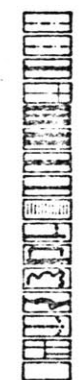


Figure 4-2 Dandora Community Development Project

Table 4.1

Phase I Land Use Profile

Use	Percentage of land allocated
Residential	62
Roads	23
Footpaths	6
Incidental Open Space	9
Total	100

Source: Mutiso Menezes International, Dandora Phase II Preliminary Design Report, June 1976, p.162.

(b) Core Units: Each lot was to be provided with basic lot services consisting of water connections to w.c., shower and gulley basin, sewerage and waste water drains in a contractor-built superstructure ("wet core") [refer to Figure 4.3]. In order to accommodate different income levels within the low-income sector, three options of wet core and shelter units were to be provided:

Option A (65%) 3,900 lots, including 30 reserved for demonstration units in three different sizes -- 100, 120, and 140 m². Each was to have the basic lot services in the wet cores and participants would be offered a construction materials loan (Ksh 4,800) for developing their shelter. Owners were expected to develop the shelter through self-help or hired labor. Total lot development costs inclusive of the materials loan and physical contingencies were estimated at between Ksh 11,000 and Ksh 12,000 per lot depending on the lot size chosen. About 30 of the 3,900 lots were to be developed with different materials and room layouts by the Project Department for demonstration purposes at a per unit cost of about Ksh 14,700.

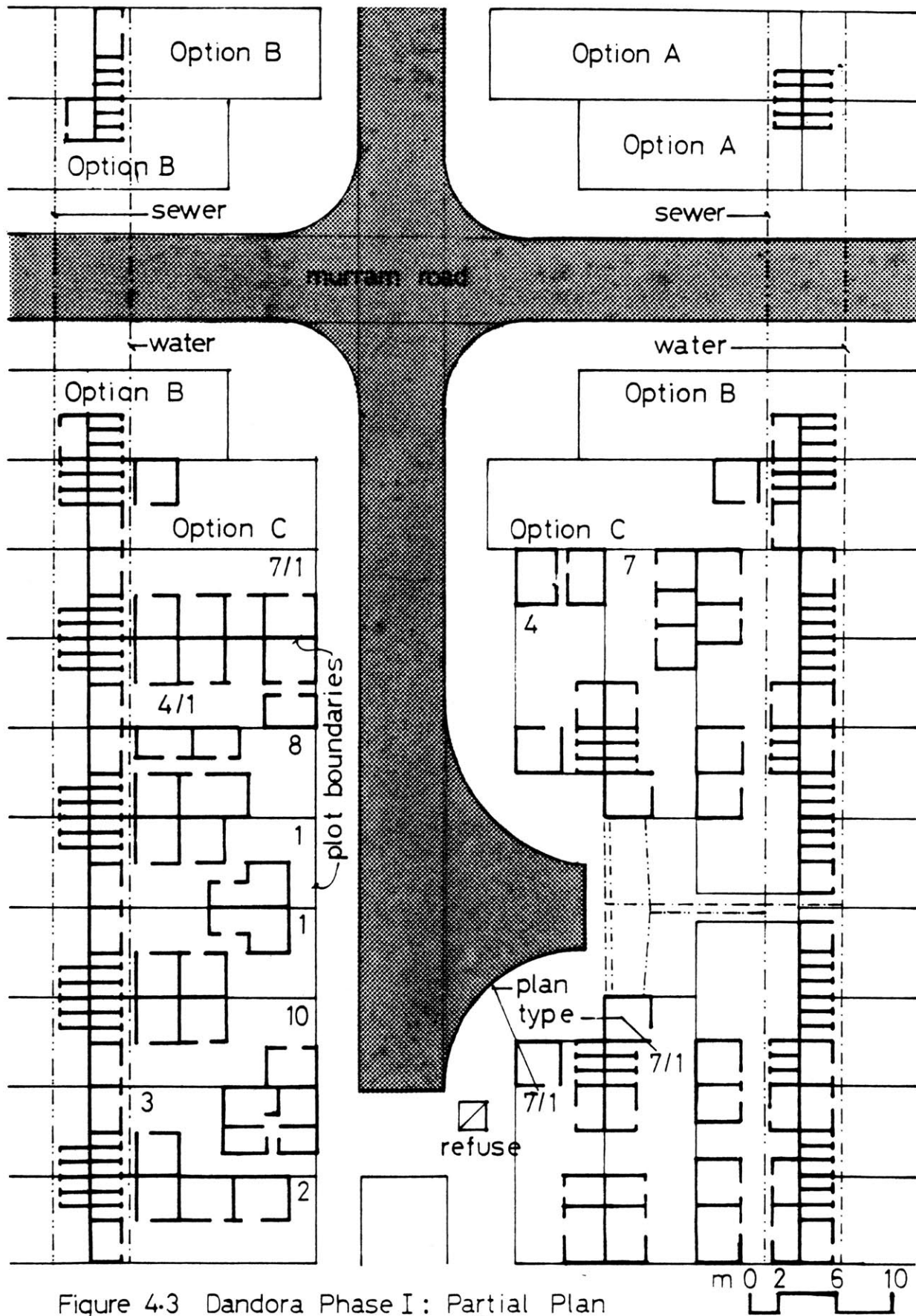


Figure 4.3 Dandora Phase I: Partial Plan

Option B (30%) 1,800 lots in three different sizes -- 100, 120, and 140 m². In addition to the wet cores outlined in Option A above, each will have one contractor-built room. Lot owners were to be offered a construction materials loan (Ksh 2,400) for further development of the shelter to suit personal requirements using either self-help or subcontracting. Total development costs including materials loans ranged between Ksh 12,000 and Ksh 13,000.

Option C (5%) 330 lots, all 160 m² in area, will have a contractor-built dwelling consisting of two built rooms. No materials cost would be offered to lot owners. The development cost of Option C lots was estimated to be approximately Ksh 16,500.

(c) Materials Loan Fund: Materials loans would be made available to project participants for self-help extensions to supplement other sources of funds, including personal savings and borrowings. Participants would construct or extend their own dwelling on the basis of approved designs.

The Project Department, through its Financial Division, was to operate the materials loans scheme. Materials loans would be made in cash but each loan tranche would not exceed the security provided by the allottee's deposit against the mortgage (Ksh 400) plus the value of the materials in that portion of the house already constructed. The funds were to be lent at 8.5% interest and repayable over 30 and 20 years for Options A and B respectively. Option A allottees would also have a five year grace period on this principle.

The maximum materials loan for Option A allottees was to be Ksh 4,800, sufficient to build two rooms, and Ksh 2,400 for Option B allottees. Because of the flexibility of the computerized accounting system, allottees were to be allowed to borrow any amount of money up

to the maximum.

(d) Community Facilities: The project was to construct primary schools, health centers, multi-purpose community centers incorporating day-care facilities, sports facilities and markets. Primary schools, accounting for about 60% of the investment in community facilities, would provide up to 5,600 student places -- allowing the project area the same level of provision as the rest of Nairobi. The community centers were to accommodate activities such as community meetings, adult education, and other recreation.

(e) Trunk Infrastructure: The trunk sewerage would comprise two branch sewers from the project area to the proposed main city trunk sewer, 14.5 km of main trunk sewer running alongside the Nairobi River to a sewerage treatment works, a temporary stabilization pond to serve the first 1,000 housing lots by mid-1976, and a sewage treatment works to serve the equivalent of 230,000 people.

(f) Technical Assistance: The project was to finance costs of the Project Department and of detailed engineering and construction supervision. Also included were the financing of studies and project monitoring and evaluation.

(g) Studies: The studies to be undertaken as part of the project included: (i) municipal finance and functions throughout Kenya to be conducted jointly by the Government and the International Monetary Fund; (ii) NCC Housing Operations; and (iii) preparation of future site and services and upgrading schemes in Nairobi and other urban areas. The joint GOK/IMF Finance Study would provide technical details on how the Government should deal with the financial crisis facing the country's local governments. The NCC Study would result in proposals for the

reorganization of Council's housing operations including budgeting and managerial techniques. Preparation of follow-up projects mentioned under (c) above would be done under the direction of the Ministry of Housing and Social Services in accordance with terms with terms of reference acceptable to the IBRD.

(h) Monitoring: Monitoring and evaluation of the project was to be done by a team from the University of Nairobi under the supervision of the Planning Section of the Ministry of Finance and Planning.

(i) Nutrition: Over the project implementation period, UNICEF will assist the Nairobi City Council to carry out a survey of nutrition needs in sample low-income areas in the city.(23)

The following infrastructure standards were adopted:

(a) Roads and Surface Water Drainage: The site would have a circulation network providing a primary ordering framework around which the lot layout plan is developed. The site is linked to the city network from Komo Rock Road. Within the site, there is a main through street running along the ridge which also forms the spine containing the community facilities. This main street is linked to a network of secondary roads and footpaths running transversely within the residential zones on either side of the spine. Standards and specifications adopted for the various of circulation were as follows:

(i) Main Roads, serving as collector roads carrying bus traffic were to be constructed to bus route standards with an overall reservation of about 20 meters. The carriageway was to be paved and would have footpaths on both sides with a surface water drainage ditch on each side of the footpaths. The footpath construction comprises 150 mm murrum (gravel) paving on compacted formation. The surface water

drainage ditch construction comprises concrete invert block channel with 50 mm concrete slabs.

(ii) Secondary Roads would provide vehicular and pedestrian accesses to the residential lots. These roads were to have an overall reservation of about 12 meters with a murram (gravel) carriageway and footpaths on both sides with a surface water drainage ditch on each side of the footpaths. The footpath construction comprises 100 mm murram paving and the surface water drainage ditch was to be the same as described for main roads.

(iii) Parking Areas were to be provided along the secondary roads at convenient locations and would consist of 150 mm murram paving on graded and compacted formation. Connecting footpaths and surface water drainage was to be provided.

(b) Water Supply: Individual water supply connections would be provided to each lot to serve a water closet, a shower, an outside tap and with provision for installing a water tap and sink in the kitchen at a later date. Water service on each lot would be metered.

(c) Sewerage: All lots would have individual wet core units with waterborne sewerage facilities. The sewerage system is designed to conform to NCC's water and sewerage department specifications.

(d) Electricity: A system of street lighting and security lighting at communal areas would be installed. Individual metered electric connections would be available from the East Africa Power and Lighting Company, on application by a stated number of households.

(e) Refuse Collection: Approximately 120 concrete hardstandings would be provided for the whole area. NCC would provide the necessary bins and collection services and charge plot holders accordingly.

(f) Site Preparation: Site preparation involves topographic survey including lot demarcation and earthworks. Lot demarcation involves beaconing out each corner of lot and stamping of title by the Commissioner of Lands. Earthworks involves clearing and grading.(24)

Cost estimates for site preparation, on-site servicing, and core units were based on detailed engineering for about 700 lots and preliminary engineering for the remainder. Estimates for trunk infrastructure were based on preliminary engineering. Total project costs were estimated at Ksh 211 (\$25.3) million at January 1975 base prices. Physical contingencies of 15% on lot preparation and infrastructure, and 5% on community facilities and core units were included. Price escalation was calculated at 15% in 1975 and 12% annually for the period 1976 through 1979. Foreign exchange costs were estimated at about 26%. The main costs categories are summarized together with their allocation amongst project beneficiaries in Table 4.2.

Of the total cost of the project the Kenyan Government was to provide Ksh 97 (\$11.6) million and the International Development Agency (IDA) and the IBRD were to split the balance of Ksh 114 (\$13.7) million evenly. The Kenyan Government was to on-lend the IDA/IBRD funds to the Nairobi City Council at 8 1/2% interest for 25 years, including a grace period of four years. The Kenya contribution was to be lent to the City Council at 6 1/2% over 25 years. The construction schedule for the project calls for the first 1,000 plots to be ready for occupation by July 1976. The remaining 5,000 plots in Phases II and III were to be ready by July 1978, by which time the necessary trunk infrastructure was also to be completed. The construction of community facilities and the administration of the material loans were scheduled to be completed by

Table 4.2

Project Cost Estimates and Allocation to Beneficiaries

Cost Estimates								Cost Allocations (%)		
Category	Ksh '000			US \$'000			% of Total Project Costs	Nairobi City Council		
	Local	Foreign	Total	Local	Foreign	Total		User fees, rates	Community facilities	Recovered from lots
1. Site Preparation	109	9	118	305	27	332	1.6	1	8	91
2. On-Site Infrastructure	803	268	1,071	2,250	750	3,000	14.4	44	6	50
3. Community Facilities	295	98	393	824	275	1,099	5.3	100	0	0
4. Core Units	1,146	382	1,528	3,209	1,070	4,279	20.6	0	0	100
5. Materials Loan Fund	1,145		1,145	3,205	-----	3,205	15.4	0	0	100
6. Trunk Infrastructure	1,461	702	2,163	4,092	1,965	6,057	29.2	100	0	0
7. Technical Assistance	466	477	943	1,304	1,336	2,640	13.5	87	6	7
8. Subtotals	5,425	1,936	7,361	15,189	5,423	20,612	100.0	---	---	---
9. Contingencies:										
Physical (7.9% of base cost)	364	223	587	1,019	624	1,643		65	5	30
Price (32% of row 8 & 9)	1,972	623	2,595	5,522	1,744	7,266		---	---	---
TOTAL	7,761	2,782	10,543	21,731	7,790	29,521		---	---	---

Source: IBRD Appraisal Report 607a-KE, p.11 and Annex 9, Table 1.

December 1979.

By May 1975 it was quite clear that the intent of the project had moved away from the objective of creating employment except as a temporary by-product of construction activity. The objective of job creation was relegated to future projects, the preparation of which would be done as part of the studies outlined in the project agreement. It was anticipated that no more than 1,000 jobs would be created by the construction of 400 market stalls as part of the community facilities.(25)

The major thrust of the project was concerned with testing the viability of the large scale application of the sites and services approach as a "low-cost solution to the shelter and service needs of Kenya's urban poor."(26) At 1974 estimated income levels, it was anticipated that two thirds of the 6,000 plots would be affordable by households as low as the 20th percentile in the income distribution curve, that is, families earning Ksh 280 (\$34) per month.

Two additional points deserve mention. First, the scale of the project implied that what was really being proposed was a new town of sixty to one hundred thousand people for the city of Nairobi. Yet the detailed planning of the development focused almost exclusively on the housing component of the community. Secondly, Dandora was an experiment. It was seen as a pilot project which, if successful, would lead to more and larger efforts to accommodate Nairobi's growth.

Project Implementation: May 1975-November 1976

The signing of the loan and credit agreements marked the beginning of the Implementation stage of Dandora. The Dandora Project Department (DPD) was especially created within the Nairobi City Council to implement

the project. The Head of the Department, the Project Manager, reported solely to the Dandora Community Development Project Committee (DCDPC), established by the NCC to oversee the implementation of the project. The NCC Town Clerk was appointed as Secretary of the Committee, which included representatives of the Ministry of Finance and Planning, Ministry of Local Government, Ministry of Housing and Social Services, the National Housing Corporation and the Provincial Commissioner of Nairobi.

Within one month, tender documents for Phase I were completed by the Technical Section of DPD. In July the Commissioner of Lands of the Ministry of Lands and Settlement handed over the Phase I site to DPD. Tenders were invited for the first 1,000 units shortly thereafter.

The contract for Phase I, valued at Ksh 12.7 (\$4.53) million, was awarded to S.S. Mehta and Sons. Mehta, acting both as general contractor and sub-contractor for the on-site civil engineering work, started construction on October 11, 1975. The contract period was set at 52 weeks. The firm of Patrickson and Coxon was appointed building sub-contractor for the core units. Patrickson and Coxon put in a bid for the building works based on a system of precast concrete panels, in addition to a bid based on the traditional concrete block wall construction called for in the tender documents. Tara Chana, an architect-planner in DPD, has reported the following:

"The original tender documents called for 100 mm concrete block walls in the w.c. and shower units without plaster. This was done to keep the cost low and at the same time the individual plot allottees were expected to plaster the walls of the wet core soon after taking over the plots. The proposed prefab panel system had the advantage of smooth surfaces, amongst other advantages. The smooth surfaces could be easily washed, thus providing a more hygienic toilet and shower at almost competitive costs. The prefab panel system also offered other advantages in terms of weathering,

structural strength, impermeability, thermal insulation, acoustic properties, fire resistance, vermin resistance and ease of nailing, among other advantages.....These advantages and related aspects of the system were not easily seen by non-technicians. Three mock-up wet core units were built on the site to demonstrate the differences in the two alternatives. After actually demonstrating the advantages the non-technicians seemed to have more faith in the system and it was finally accepted as a viable alternative to the conventional construction method as specified in the original tender documents."(27)(emphasis added)

The last minute change to the prefabricated system meant increasing the physical standards of the project at the expense of affordability by the low-income groups. Chana reports that a square meter of prefabricated wall panel cost Ksh 45 (\$5.40) compared with Ksh 32 (\$3.84) for concrete block, inclusive of labor, materials and overheads. This represents a 40% increase in the cost of walling the core units, all of which is payable by the allottee (refer to Table 4.2, item 4).

With construction proceeding on site, attention shifted to the design of the detailed administrative procedures required to operate and implement the project. The design of plot application forms prepared by DPD's Community Development Section was approved in March, at which time they went on sale to the public. At first sales were slow. Poor public relations work on the part of the Project Department had created confusion in the mind of the public between Dandora and another more expensive City Council housing project also under construction. A mass media advertising campaign was therefore launched to promote Dandora. By the time applications closed on June 30, 1976 a total of 20,948 forms had been sold at Ksh 20 each. Of this number, 16,018 were completed and returned to DPD. During July and August, the applications were processed and prospective allottees were interviewed in attempts to verify information contained in the applications. A total of 6,710

were discarded as being ineligible. That is, the applicants did not meet the following criteria:

- (a) The total income at the time of application of the tenant and such members of his family as will live with him on his plot was between Ksh 280/- and Ksh 500/- per month for Option A plots and Ksh 450/- and Ksh 650/- per month for Option B plots.
- (b) The prospective tenant had lived in Nairobi for at least two years immediately prior to his application for a plot and did not own any residential property in Nairobi.
- (c) The tenant's family (spouse, if any, or children) did at the time of application, and would, upon allocation of a plot, reside with the tenant.
- (d) Prospective tenants would pay NCC the appropriate fees for sewerage and water connection and a deposit of Ksh 400 within sixty days of notification that they have been allocated a plot.

In addition, applications were disqualified if they were incomplete, illegible, duplicates of earlier submissions, not accompanied by supporting documents showing proof of income, or not submitted on the official forms.

Thus there remained 9,308 applications bidding for 6,000 plots according to the breakdown in Table 4.3:

Table 4.3
Number of Applications by Plot Option

	No. of Applications	No. of Plots	Ratio of Applications to Plots
Option A	5,634	3,870	1.5:1
Option B	3,674	1,800	2:1
TOTAL	9,308	5,670	1.6:1

On September 24 1976 the list of successful applicants was produced by a computerized balloting system. The computer allocated 5,670 plots

to applicants randomly within plot Options A and B. The names of the 3,638 unsuccessful candidates were placed in random order on waiting lists. Formal letters of offer were sent to the 5,670 allottees on October 7 1976. They were given six weeks to accept the offer and pay the down payment of Ksh 400 (\$48) and the water connection fee of Ksh 150 (\$18). During this period, the Community Development Section held orientation meetings to familiarize allottees with the nature and requirements of the project. All but 55 allottees accepted the offer. Those plots not accepted were re-offered to applicants on the waiting list. The allocation process was carried out quickly because 20 social work students were hired on a temporary basis from the University of Nairobi to supplement the efforts of 10 permanent Community Development assistants. Three issues created controversy about the allocation procedure. First, it took some time before the idea of computer balloting was accepted by the City Council. The more common manual systems of balloting were easier to tamper with. Second, Councillors began submitting bulk applications on behalf of their constituents in efforts to maximize the chances of being allocated plots. This created the third issue: a debate on the pros and cons of interviewing each applicant. In the absence of a detailed analysis of the plot allocation process, it can only be surmised that the vast majority of allottees met the selection criteria. Whether the allottees retained control over the use and development of their plots will be taken up in the next chapter.

While Phase I was under construction, the issue of physical standards was raised once again. This time City Council Chief Officers voiced the criticism. In May 1976 the Medical Officer of Health

reviewed in detail the plot layouts and core unit designs for Phase I. In a memo to the Town Clerk dated May 26 1976 he listed 15 items of planning and design, which he claimed failed to comply with normally accepted standards of practice, the requirements of the Public Health Act, or the Grade II Building By-Laws. Noting that it was too late to do anything about Phase I, he included the following points in his list:

"2. The layout of the whole scheme lacks essential amenities and is bad in principle. For example, no open spaces or recreation gardens are provided for and the whole area will be a mass of buildings reminiscent of overcrowded camps. The only open spaces provided for are mainly secondary murrum roads, which are themselves a danger to health because of dust from speeding motor vehicles.....

3. Dwellings, latrines, baths and kitchens are planned on a back to back fashion, making it impossible for efficient through or cross ventilation (contrary to By-law 14 of Grade II by-laws of the Building Code). If the purpose of this scheme is to substitute for slums and shanties, thus improving peoples' health, the scheme as constructed or envisaged will defeat that purpose. Such a compact mass of buildings with hardly any space for circulation of air and back to back dwellings will be the source of air borne, infectious diseases. Vermin infestations will easily spread to whole blocks from a focus and will be very difficult to deal with [his emphasis].....

6. The general principle of providing means of inspection at all points of change of direction, junctions and change of levels of drainage is not complied with Rule 35 of the Public Health (Drainage and Latrine Rules) [sic].....

13. There is no indication of water storage facilities for other purposes. The water supply will be totally inadequate for showers, kitchens, washing of clothes, etc. Should water pressure go faulty, the whole village will be denied of water supply. This will lead to indiscriminate defecation in the yards, and dysenteries, typhoid and fly nuisance will be the order of the day."(28)

He concluded by making the following general comment:

"This scheme as envisaged will provide unsuitable and unfit dwellings which will be dangerous to the health of the residents and to the city generally; such dwellings will encourage air-borne, insect-borne diarrhea and other enteric diseases, social and stress diseases.

It will not be a surprise to public health and social workers if the dwellings become hovels of crime and other public vices. It is the duty of the Council as a public health authority to

prevent or remedy danger to health from unsuitable dwellings re. Section 117 of the Public Health Act which states

'it shall be the duty of every health authority to take all lawful, necessary and reasonable practicable measures for preventing or causing to be prevented or remedied all conditions liable to be injurious or dangerous to health arising from the erection or occupation of unhealthy dwellings or premises, or the erection of dwellings or premises on unhealthy sites or on sites of insufficient extent, or from overcrowding, or from the construction, condition or manner of use of any factory or trade premises, and to take proceedings against any person causing or responsible for the continuance of any such conditions.'"(29)

He reiterated nearly all these comments on December 4 1976 in a memo to the Town Clerk, dealing with the design of Phases II and III of the project. At this time, the consultant was instructed by the Town Clerk to stop work until further notice. Draft tender documents for Phase II had by this time been sent to the IBRD and the National Housing Corporation for approval. The final resolution of the standards conflict occurred after Phase I had been occupied and is discussed in the next section. Preliminary design work on Phase III had been completed the previous June.

With the completion of Phase I on November 20 1976 the contractor handed over the keys for the core units to DPD. Table 4.4 summarizes the numbers and types of plots actually prepared in Phase I.

The conclusion of this stage of the Dandora project was accompanied by the dramatic resignation of the Town Clerk:

"When he finally left his job as Nairobi's town clerk, Mr. John Mbogua submitted a confidential report to the city council which has since become a talking point both inside and outside city hall. Mbogua minced no words in his criticism of councillors and officers of the council, accusing councillors of running up huge debts with the council which they refused to pay and of using their positions to acquire properties and businesses in the city. He castigated some officers for colluding with the councillors in their corruption and warned that unless the whole situation was rectified the city was heading for bankruptcy and worse."(30)

His departure robbed Dandora of one of its staunchest supporters. It was the Town Clerk who moved the project forward despite the opposition of his peers, the other Chief Officers of the Council. His resignation came only a few weeks after the resignation of the Mayor herself, the daughter of President Kenyatta. In a project as politically sensitive as Dandora, it was important to have the ear of the President, who had been known to halt construction of previous low income housing schemes if he thought there were of too low a standard. X And so it was that as Phase I of Dandora was about to be occupied, the project was without two vital sources of political and administrative support. The commitment of the new Mayor and the new Town Clerk to the project had yet to be tested.

Project Occupation: November 1976-Present

Immediately after the completion of Phase I, allottees were given possession of their plots. However, without official City Council approval of Phase I, DPD could not issue the standard house plans which the allottees were required to use in building their dwellings. Neither could DPD build the demonstration houses which were scheduled to be built on seventeen plots. The debate on standards during the project implementation stage had delayed the formal approval of Phase I by the City Council. On January 20 1977 a joint meeting of the Dandora Project Committee and the Works and Town Planning Committee "accepted" the plans for the first Phase on the grounds that it was too late to make any amendments. This "acceptance" gave DPD the authority to issue standard house designs to allottees who had only been able to construct temporary dwellings since November 1976. By March nearly two hundred Option A

plots with the minimum wet core were occupied. Allottees on these plots had resorted to constructing make-shift shelters, allowing them to at least occupy the plots until such a time as they had finished their approved dwelling. The presence of hastily and cheaply built shelters reminiscent of those found in Nairobi's squatter areas disturbed members of the Council who feared that Dandora was turning into a planned slum. The new Town Clerk wrote letters to all the plot holders involved instructing them to demolish them by the end of March 1977. This created a new controversy which was resolved by compromise: permission to maintain the "site offices" until the expiration of the house consolidation period, 18 months after signing the plot agreement.

The focus of the standards debate shifted from Phase I to Phases II and III. The design consultants rebutted the comments of the Medical Officer of Health point by point.(31) In cases where the criticism warranted the proposal of alternative designs, these were suggested together with the implications in terms of time and money. The total cost of rectifying all the problems diagnosed by the Medical Officer and his colleagues was estimated to be Ksh 27.6 (\$2.3) million or Ksh 5520 (\$662) per plot.

After four months of discussion involving Council officers, Council members, government officials and representatives from the IBRD, a compromise solution was reached in April 1977. Only the standards affecting the sewer system were changed. The location of the sewer mains in relation to the core units was changed to provide a larger way-leave, thereby affording easier access for maintenance purposes. The core units, originally grouped in fours with two shared walls, were split into pairs with one shared wall. (Refer to Figure 4.4).

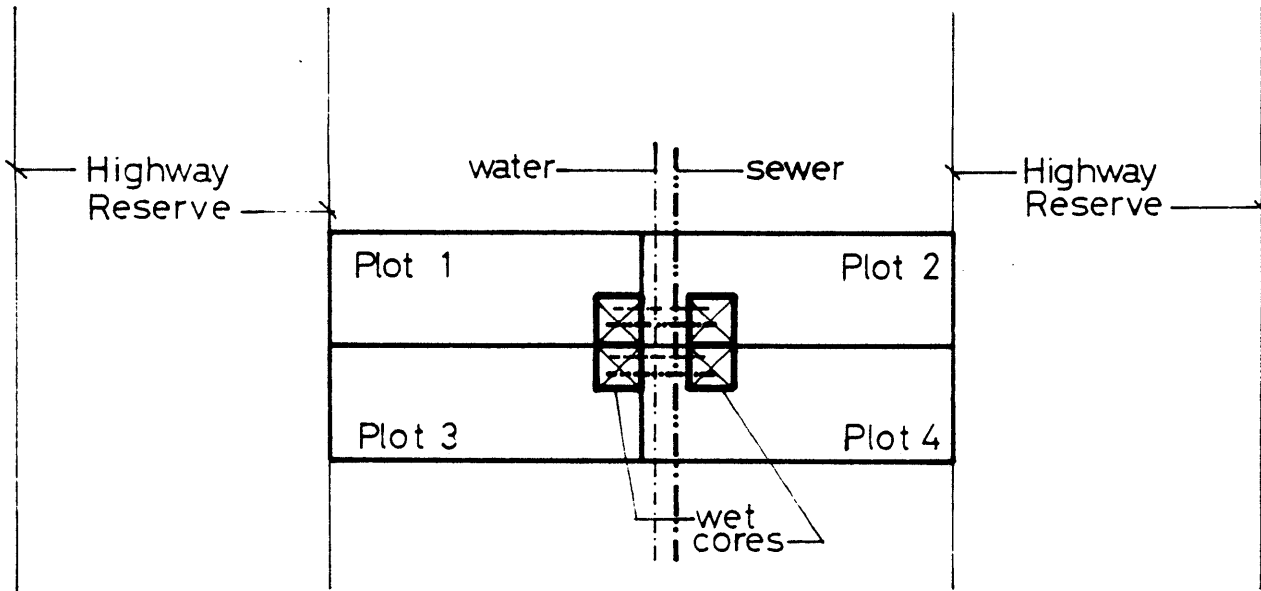


Figure 4.4 Proposed Wet Core Servicing Layout: Phase II (n.t.s.)

The estimated extra cost of these changes for Phases II and III was Ksh 3,800,000 (\$456,000) or Ksh 760 (\$92) per plot. It was agreed that

the Kenyan Government would pay for the cost of the extra works and the IBRD would pay for the extra fees to the design consultants out of the physical contingency fund. The consultants had to redo the engineering layout for the 2,800 plots in Phase II. It was also agreed that the extra costs would not be passed on to the allottee but would be absorbed by the Government. With the standards issue resolved, the consultants were instructed by the Town Clerk to resume work in accordance with the original brief, now modified with respect to the sewer system.(32) The remaining 5,000 plots were one year behind schedule.

Further aggravation between the City Council and the Central Government was created when the Ministry of Local Government announced at the end of June 1977 that it had appointed a team of four inspectors:

"'to conduct extraordinary inspections and examinations of the accounts and records' of the council. It would also conduct investigations, research and inquiries into the general administration and financial management of the council."(33)

Not the least of the MLG's stated concerns was the situation of the City's housing supply system. One observer in Nairobi was moved to say:

"As far as city housing is concerned, Nairobi residents have long ago given up hoping that enough city housing schemes will go up to cope sufficiently with the fast rising population of Nairobi. When the schemes are implemented, the machinery for allocating the available houses has been riddled with corruption. Influential personalities, some owning or renting city council houses and flats already, somehow always manage to add to their comforts when allocations of city council housing is done. The low-income residents for whom the housing schemes are meant, often find themselves with no more than frustration to show for their efforts to better living conditions."(34)

To what extent the probe was motivated by factors other than a desire on the part of the MLG for "good government" will be debated for some time to come. In actual fact, the probe never did occur but

Table 4.4

Actual Plot Types Developed in Phase I

A. <u>Residential Plots</u>	100m ²	120m ²	140m ²	160m ²	Total
<u>Allocated</u>					
Option A	237	241	193	20	691
Option B	95	72	75	21	263
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	332	313	268	41	954
<u>Sold</u>					
Option C(1)	--	4	4	46	54
Demonstration plots(2)	12	2	3	--	17
Demonstration houses(3)	--		-	1	4
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	12	9	7	47	95
B. <u>Non-residential Plots</u>					
<u>Temporary</u> (unnumbered)					
kiosks(4)	15				
building materials lots(5)	15				
<u>Permanent</u>					
day care(6)	3				
kiosks(6)	6				
primary school(7)	1				
market(8)	2				

- (1) Sold @ Ksh 28,000 each
- (2) Not built, finally allocated to participants
- (3) Built but not sold or allocated
- (4) Located on public land within residential area
- (5) Located adjacent to residential area
- (6) Numbered plots zoned for non-residential use within residential area, to be allocated by Commissioner of Lands, not Nairobi City Council
- (7) Construction of school started but temporarily abandoned by contractor
- (8) Construction not yet started

it did induce sufficient paranoia amongst officers of DPD to prevent this researcher from getting a close look at the records and operations of the Department during field work carried out in July and August of 1977. All council officers were under orders not to

"divulge any information requested whether officially or unofficially to the inspectors who have been appointed by the Ministry of Local Governments."(35)

Meanwhile, allottees were pressing on with the construction of their dwellings. By December 1977 one half of the plots were occupied and the high standards and pace of house construction surprised even the most optimistic observer of the project. A detailed description of Dandora Phase I is the subject of the next chapter.

Chapter 4 Notes

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3. Quoted in Temple, ibid, p.156.
4. IBRD. Urbanization Sector Working Paper, Washington, D.C., 1972, p.3.
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17. HTF. Ibid, p.iii.
18. HTF. Ibid, p.iii.
19. HTF. Ibid, p.iv.
20. Mutiso Menezes International. Dandora Data Review, December 1975, Appendix 6.1.
21. Nairobi City Council. Metropolitan Growth Strategy, 1973, Vol.II, Table 4.2.
22. IBRD. File copy of Decision memo dated August 6 1974.

23. IBRD. Appraisal of a Site and Service Project, Kenya, Washington, D.C., April 1975 (Report No. 607a-KE).
24. Kenya. Population Census 1969, Vol.III, Nairobi, Government Printer, 1970, Table 1.
25. IBRD. Ibid, p.21.
26. IBRD. Ibid, p.ii.
27. Chana, T. Problems Related to the Use of Prefabricated Building Components in Kenya, unpublished paper, Nairobi, September 1977, p.8.
28. Nairobi City Council file, letter reference CHI/2452/H.3 of December 4 1976 from the Medical Officer of Health to the Town Clerk.
29. Ibid.
30. "City Council Housing: As Messy as Ever", Weekly Review, Nairobi, November 29, 1976.
31. Mutiso Menezes International, unreferenced letter dated November 30 1976.
32. Letter reference TC/1/9/628 of April 20 1977 from the NCC Town Clerk to Mutiso Menezes International.
33. "Tell Probe Men Nothing-Order: 'Silence' memo sent to Officers", Daily Nation, Nairobi, July 27 1977.
34. "Nairobi: City Under a Probe", Weekly Review, Nairobi, July 25 1977.
35. See note 33 above.

Chapter 5

Dandora Phase I: One Year After Occupation

Introduction

The purpose of this chapter is to describe the state of Dandora Phase I twelve months after its occupation by project participants. A number of performance indicators are given which measure the success of the project as a comprehensive community development for low-income urban residents. Among the different variables measured are: actual costs versus estimated costs; actual "target income" group served versus the estimated one; rate of defaults on payments; rate and quality of ho consolidating; number of jobs created; rate of plot turnover; and the morale of members of DPD.

It would be unwise to make definitive judgments about a community development that is only one year old. However, several clear trends have emerged and it is these that we wish to point out.

Plot Development Costs

When the preparation of Phase I plots was completed, DPD established what the actual plot development costs (exclusive of material loans) were for each size and type of plot allocated to the low-income groups. Table 5.1 compares these actual costs reported in April 1977 with the estimates made at the time of appraisal in April of 1975. It is evident that it was the smaller Option A plots which incurred the largest increases. These plots of 100 and 120 square meters made up 48% of the total Phase I development.

Table 5.1

Cost of Plot Preparation Charged to Allottee (Ksh)
(exclusive of material loan)

	area(m ²)	Cost		Monthly Charge ³		
		estimated ¹	actual ²	estimated ¹	actual ²	% increase
Option A	100	4,800	8,838	37	68	83
	120	5,200	9,701	40	75	87
	140	6,750	10,544	52	82	58
Option B	100	9,550	15,542	83	135	63
	120	10,000	16,625	87	145	66
	140	10,350	17,259	90	150	66

1. IBRD, Appraisal of a Site and Service Project, Kenya (607a-KE), Washington, D.C., April 1975, p.19.
2. NCC, Strategies for Housing the Lower Income Groups in the Dandora Community Development Project, Nairobi, May 1977, p.17.
3. Based on 8.5% interest over 30 years for Options A and B respectively.

It is possible that inflation of building costs has contributed to these cost overruns. However, Table 5.2 shows that at the time of construction between October 1975 and November 1976 the Nairobi Building Cost indices for both residential and non-residential construction rose only 10 per cent. Moreover, the original estimates included a contingency sum of 12% for cost increases. It is more likely that the final rush to prepare a project submission in the early months of 1974 resulted in poor cost estimates.

Another factor contributing to increased plot development costs was the last minute switch to the prefabricated concrete panel system used to construct the core units. The attendant cost increases were created for a number of reasons. First, the building technology -- a patented system marketed by the local franchise of a multi-national construction company -- was more expensive per square meter than conventional con-

Table 5.2

Building Cost Index

Date	Residential	Non-Residential
January 1973	100	100
January 1974	115	115
January 1975	148	165
October 1975	163	178
January 1976	174	186
November 1976	182	200

Source: Central Bureau of Statistics, Nairobi

crete block wall construction. Second, the project was one third the size required to cover the cost of setting up the site factory used to produce the precast concrete components. A spokesman for the contractor said in an interview that a minimum of 25,000 square meters of plinth area (gross floor area) was the minimum size project that would justify setting up the precasting plant. Dandora's plinth area was about 8,000 square meters. Third, ten to fifteen per cent of the panels had to be discarded because of damage caused by mishandling. The mishandling occurred because the sub-contractor, in a desire to demonstrate the labor intensive potential of the system, used manual labor to maneuver components around the site. The panels, measuring up to 100mm by 900mm by 3050mm, and weighing an average of 260 kgs (one quarter ton) were simply too awkward to handle manually. Fourth, the manual process of pouring the aerated concrete into the panel forms caused uneven distribution of the air bubbles throughout the concrete. When the panels were cured, surface cracks appeared. As a result the sub-contractor was required to plaster the panels both inside and out with cement finish.

This effectively defeated the purpose of using the system in the first place. Fifth, the panels were not designed with the necessary holes and edge conditions to accommodate door and window frames or the passage of water pipes. The alterations of the panels, once erected, to receive these details required the same amount of labor, if not more, than the concrete block system originally proposed. Lastly, the production of panels had to be slowed down because the erection of the core units outpaced the installation of infrastructure. As a result, the factory was operating at below capacity most of the time, with consequent additional diseconomies. Because of the nature of the building contract for the core units, the sub-contractor was forced to absorb many of the extra costs. However, it is certain that some of these extras were passed on to the DPD and then to the plot allottees through the use of funds reserved for physical contingencies which would otherwise have remained unused.

A more important source of cost increases for the smaller Option A plots was the failure of attempts to provide a cross-subsidy from the more expensive plots. Two approaches to cross-subsidy were tried in Dandora Phase I. The first approach involved the construction of 17 demonstration houses which were to be sold on the open market. The profits realized were to be used to subsidize Option A units on the 100 and 120m² plots. The delay in approving the standard house designs prevented their construction before allottees started their own dwellings. Therefore the program was cancelled.

The resultant loss of cross-subsidy can be estimated as follows: Seventeen houses with an average of four rooms each were to be constructed at a total cost of approximately Ksh 250,000. Rent levels of

Ksh 150 per month per room imply a market value of Ksh 72,000 per plot assuming a discount rate of 10%. The resultant profits of Ksh 57,300 per sale could have reduced the chargeable costs of 478 Option A plots by Ksh 2,000. This would have reduced the monthly payments on the subsidized plots by Ksh 16 per allottee. The second approach involved selling the 54 Option C plots on the open market. This was done and profits on the order of Ksh 7,000 per sale were realized. In principle the income of Ksh 378,000 was to be used to offset the plot development costs of 478 Option A plots by the amount of Ksh 790 each. This was not done because the net effect of lowering monthly payments on these plots by Ksh 7 each was considered "insignificant." (1) Thus an attempt to provide cross-subsidy by programming a minimal level of economic mix proved to be abortive. Increased plot development costs translated into increased monthly plot charges for plot allottees.

Monthly Plot Charges

Table 5.3 combines the monthly repayment for lot preparation with the other housing services, such as utilities and the materials loan. A comparison of charges for each plot size by plot option shows actual prices running 48-58% greater than estimated prices. Note that the materials loan is optional and where an allottee decides against using it, his monthly bill for housing services would be 48-72% greater than estimated. With a full materials loan, the increase ranges from 61-88%. There are two reasons for this increase, in addition to underestimation of lot preparation costs. First, the maximum size of the optional materials loan was increased by 20% to cover the effects of inflation. This had the effect of increasing monthly charges by Ksh 5 to Ksh 10 per

Table 5.3

Dandora Phase I Pricing of Housing Services (Ksh per month)

	Option A (65% of all plots)						Option B (30% of all plots)					
	100m ²		120m ²		140m ²		100m ²		120m ²		140m ²	
	est.	act.	est.	act.	est.	act.	est.	act.	est.	act.	est.	act.
% of total lots	20.5	23.5	24	23.9	20.5	19.7	9.5	9.4	11	7.1	9.5	7.4
lot preparation	37	68	40	75	52	82	83	135	87	145	90	150
risk reserve (5%)	2	4	2	4	3	4	4	7	4	7	5	8
land rent ¹	4	8	4	9	5	11	4	8	4	9	5	11
lot mortgage	43	80	46	88	60	97	91	150	95	161	100	169
rates ²	6	4	7	5	8	6	6	4	7	5	8	6
utilities	24	40	24	52	24	52	24	40	24	52	24	52
lot mortgage and utilities	73	124	77	145	92	155	121	194	126	218	132	227
Building materials	minimum		0		0		0		0		0	
loan ³	maximum		54		65		21		25		21	
Total Monthly Price	minimum ⁴		73		124		77		145		92	
	maximum		127		189		131		210		146	
Required income ⁵	minimum		292		496		308		580		368	
	maximum		508		756		524		840		584	
% increase of actual over estimate	minimum		48		60		51		54		72	
	maximum		69		88		68		61		83	

86

1. Ksh 90 per 100m² per year
2. Ksh 48 per 100m² per year
3. Loan size up 20% over appraisal, same terms - 8 1/2% over 20, 30 yrs.
4. Also maximum for Option A until year 5.
5. Assuming housing costs 25% of monthly income.

plot. Second, the monthly charge of Ksh 24 for utilities exclusive of electricity was heavily underestimated. A second approximation is given for a 100m² plot, under the following assumptions:

- 1) water consumption of 100 liters per person per day
- 2) a maximum of four rooms per plot with a maximum of three people per room
- 3) a standing charge of Ksh 8 per month
- 4) meter rent of Ksh 2 per month
- 5) cost of metered water is Ksh 2.64 per 1,000 liters

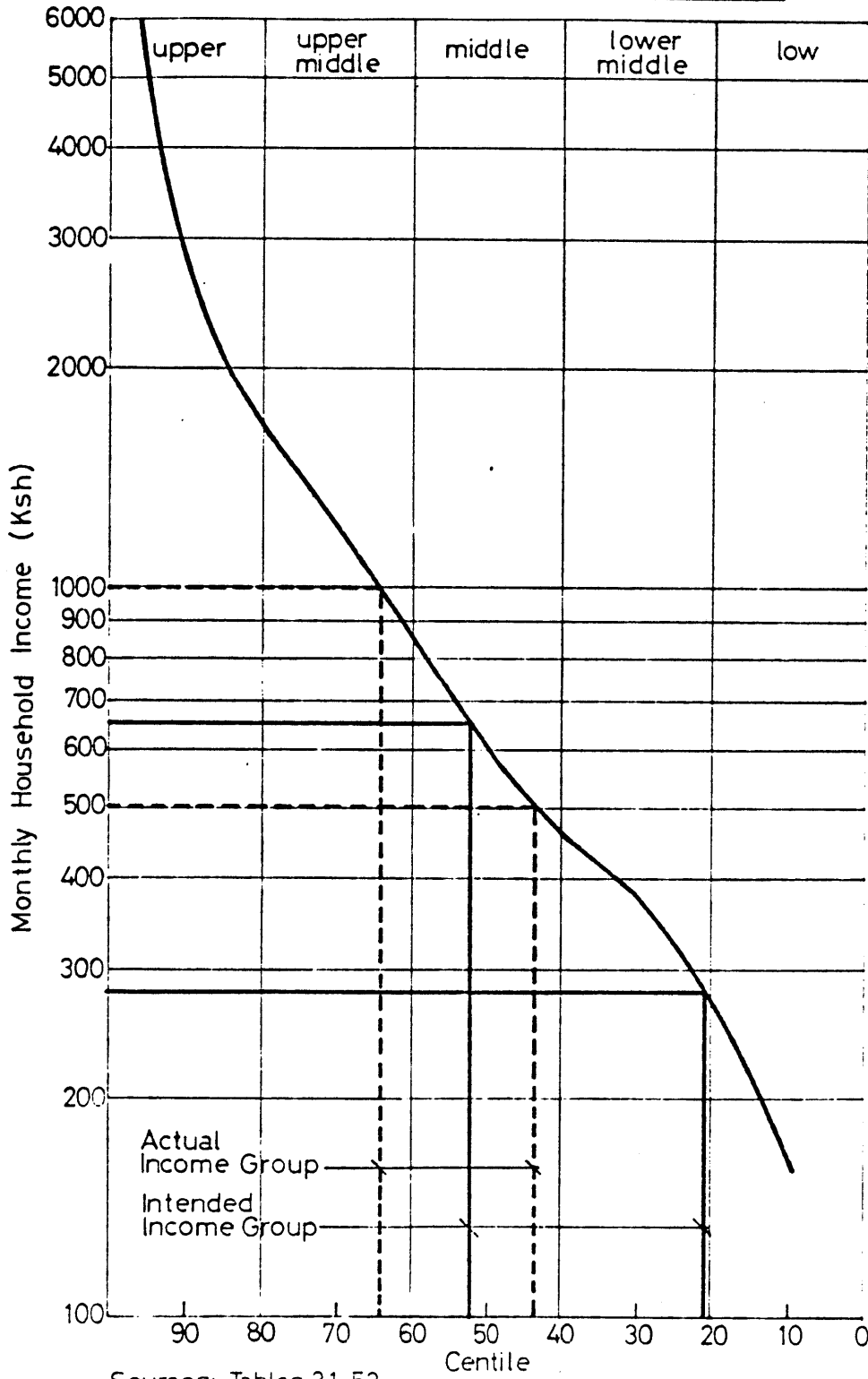
Then the monthly water charge per plot is

$$8 + 2 + [(100 \times 4 \times 3 \times 30) - 3,000] \times \frac{2.64}{1000} = 97$$

When added to standing charges for sewerage disposal and trash collection of Ksh 8 and Ksh 4.50 respectively, the total utility bill comes to Ksh 110. In Table 5.3 we assume that the occupants will exercise extreme restraint and that total utilities will not exceed Ksh 40 (Ksh52) for the 100m² (120,140m²) plots.

The significance of these cost increases becomes apparent when one considers that plots were allocated on the basis of allottees having incomes defined as a function of the estimated monthly plot costs. Figure 5.1 shows the income distribution curve for Nairobi. The intended "target" income group fell between Ksh 280 and Ksh 650 per month and is identified as reaching down to the lowest 20% percentile. The actual monthly costs suggest that minimum and maximum income levels should be from Ksh 750 to Ksh 1000 if full advantage of the materials loan scheme is to be taken. This redefined income range extends from the 64th percentile "down" to the 44th percentile. If allottees do in fact come from the intended "target" income group, they must be experiencing

Figure 5.1 Nairobi Household Income Distribution



Sources: Tables 3.1, 5.3

intense financial hardship. An allottee who had applied for the largest Option B plot with full materials loan (Ksh 153 p.m.) will find he can only afford an Option A plot without a materials loan (Ksh 155 p.m.).

Under such conditions, we should expect massive defaulting and/or clandestine plot transfers to wealthier people. Similarly there ought to be rather desperate attempts to obtain financing to permit the rapid construction of homes for subletting. The evidence to date indicates that defaulting is minimal. As of June 1977 only 16 allottees were evicted for non-payment of monthly charges. Moreover, fewer than 6 percent were 3 or more months behind in their payments. While political considerations have made DPD reluctant to evict plot occupants who entered the scheme by misrepresenting their actual wealth and income there is no reason to believe it would not evict occupants who default.

The evidence for this lies in the fact that the excess demand for plots, including the demand by the rich, give no incentive to DPD to permit non-paying allottees to remain in the scheme. One can therefore infer that the low rate of default is an accurate reflection of the relative solvency of the project participants. The question of clandestine transfers, sources of capital, and subletting will be taken up below in the section entitled "Plot Ownership".

House Consolidation

Table 5.4 illustrates the extent to which low income plots had been occupied and houses built as of December 1977. Option A plots have only a wet core consisting of a toilet and a shower. Option B plots have a wet core, a closet and a kitchen with running water and a chimney flue. This fact helps explain why 84% of B plots were occupied whereas only

39% of A plots were occupied: allottees on B plots were able to move into the kitchen pending construction of another habitable room. This fact also explains why only 2% of B plots had temporary shelters whereas 12% of A plots had them. Construction of a house had started on just over three quarters of both A and B plots. Construction of at least two rooms -- the minimum which had been required for Option A -- was completed on 38% of A plots. Construction of at least a single room -- the minimum required for Option B -- had been completed on 45% of B plots. A survey of the occupied plots taken in December 1977 revealed that the population of Dandora Phase I was about 3,250 people.

Table 5.4

House Consolidation by Plot Option
(December 1977)

	Option A Plots		Option B Plots		Total Plots	
	no.	%	no.	%	no.	%
Plots occupied	271	39	221	84	492	52
Construction of a temporary shelter	87	13	4	2	91	10
Construction commenced	525	76	211	80	736	77
Construction completed to minimum approved level	225	33	120	45	345	36

Source: MEDIS, 3, Tables 11/2, 11/3, 11/5 (100% samples)

Note: Percentages cannot be added

With 492 plots occupied, this translates into a plot occupancy rate of 6.6 people per plot. In the absence of an accurate count of completed rooms, a room occupancy rate cannot be estimated.

Of the 10 types of house plans prepared by DPD Technical Section,

those with the maximum number of rooms were preferred by the allottees. Technical assistance was favorably reviewed by allottees. Visits to plots by the staff of the Technical Section were frequent and increased in frequency if construction problems arose.

All respondents in a sample questionnaire administered to 9% of the project's allottees by the Monitoring and Evaluation Study (MES) built their houses out of dressed stone or concrete block.(2) All interior wall finishes consisted of either plaster or plaster and paint. Over 96 percent of all rooms had steel casement windows, while less than 3 percent used wooden window frames. All allottees in the sample used stone foundation and a cement floor finish. No statistics are available on the frequency of use of roofing materials, but visual observation by the MES suggested it was similarly constrained to either galvanized covered iron sheeting or corrugated asbestos sheeting. A small number of houses had the more expensive mangalore tile roof. In almost all cases the use of materials conformed to the specifications of the approved type designs which allottees were required to follow.

Both the speed of consolidation and the quality of building construction surprised the project managers. These two factors, more than any others, have caused public opinion to change dramatically. Apparently Dandora has renewed public faith in sites and services which do not have to look like slums. This sudden reversal in public sentiment has occurred in direct response to the visual image presented by Dandora.

Three methods of house construction were observed. Three fifths of the questionnaire sample population used the owner/builder method. Under this method the owners "supervised and participated as skilled or unskilled laborers, employed other laborers and purchased materials

themselves."(3) The questionnaire revealed that an average of 9 laborers were employed per plot, of whom 2 were masons and 1 was a carpenter. Four-fifths of the unpaid work force in the sample were members of the owner-builders family. More than half of these only worked 2 or 3 times a week. Ninety percent of the allottees in the sample worked 2 to 3 times a week, or less frequently, in any capacity.

Twenty one percent of the sample employed a contractor to carry out the work. However, none handed over all the responsibility. All but one owner purchased materials. The contractors supplied the labor and supervision. At the time of the survey, rooms had been built by building groups organized to provide a form of mutual aid. This method used less labor per plot than either of the other two methods, but more of the labor was unpaid (refer to Table 5.5). It is important to note that only 22% of the labor contributing to the building of Phase I was self-help (unpaid) labor. This relatively low figure explains in part why the contractor method of construction is not more expensive than the other two methods. That is, the small element of unpaid labor implies a low level of financial cost savings among those construction methods which use self help labor when compared with the contractor method.

A comparison of labor and materials costs for the three methods is given in Table 5.6. The mean construction period per room was about three weeks for all methods. No data is available on the mean construction period per house.

Allottees, all of whom were automatically eligible for a materials loan, were taking full advantage of the credit program. With two-thirds of the stipulated housing consolidation period over in December 1977,

Table 5.5

Laborers Per Plot by Building Method

Method	Unpaid	Paid	Total
Building Group	2.4	3.6	6.0
Contractor	0.4	7.1	7.5
Owner-builder	2.1	6.7	8.8

Source: MEDIS 3, p.45.

58 percent of the full loan amount had been disbursed.

The size of the loan amount, Ksh 2,880 per room, corresponded almost exactly with the mean materials cost per room as reported in the sample survey (refer to Table 5.6). Since the loans only covered the purchase of materials and since 78% of the labor force was paid, allottees did require additional sources of cash to build their homes. The MES reports that:

"It is apparent that the amount of capital mobilized for house construction exceeds that available through the loan program by more than double."⁽⁴⁾

Table 5.6

Construction Costs Per Room

Method	Labor (Ksh)	Materials (Ksh)	Total (Ksh)
Building Group	866	3,091	3,957
Contractor	987	2,551	3,539
Owner-builder	1,171	2,740	3,911

Source: MEDIS 3, Tables 11/56, 11/57, and 11/58

When surveyed, the sample population claimed to have used savings averaging Ksh 5352 (\$642) per plot. Thirty-two percent claimed to have received financial assistance from relatives averaging Ksh 1350 (\$162) per plot. Other sources accounted for another Ksh 675 (\$81). Reports in the international press allege that:

"an underground capital market has sprung up to finance the building with a flood of money from the rural areas to support (and eventually share the gain of) the lucky relative whose two-roomed council house envisaged by the planners has quickly become a six-room lodging house."(5)

The implications of this trend are discussed in Chapter 6.

Plot Utilization

Data from the MES questionnaire survey indicated that 36% of the sample population sublet one or more rooms on their plots. Since the sample excluded plots which were not owner-occupied and which had not completed the minimum number of room construction, this figure is probably low for the project as a whole. The survey revealed a mean monthly rent of Ksh 153 (\$18.36) per room. With "rent propensities" in the order of 35% of the monthly income in Nairobi, as discussed in Chapter 3, it is likely that the rental market is affordable only by those households earning at least Ksh 440 (\$53) per month -- that is, those in the 39th percentile and higher. The supply of rental accommodation in Dandora does not appear to be serving the needs of the lowest 20 percent of Nairobi's income distribution, the intended beneficiaries of the permissive subletting policy. The problem of high rents is exacerbated by the location of the project, eleven kilometers from the City center. The round trip bus fare is Ksh 2.80 (\$0.28), double that estimated in 1975. This implies a monthly transportation bill of Ksh 67 (\$8.04) to enable

one wage earner per household to travel to and from work six days a week.

Plot Ownership

There is evidence that plots have begun to change hands without the required authority of DPD. It appears that many of the new owners, an estimated 8 to 10 percent of Phase I, purchased the plots in good faith. In at least one instance, the sale was discovered when the new owner visited DPD to learn what government assistance he might receive to develop his plot. When it was discovered he was not one of the original allottees, the Project Manager resolved to set an example by widely publicizing his eviction. When he brought the case before the Project Committee, the latter successfully avoided taking any action. Excuses were made about not having sufficient information. Nevertheless, the story did appear in the newspapers. Within a few days, the Project Manager had received upward of 80 calls from other new owners who were worried about possible eviction. They were concerned that the Project Department would take legal action to repossess the plots. However, for political reasons, no action was taken. It has been alleged by informed sources in Nairobi that the new owners of plots are friends of the members of the Project Committee.

Further unconfirmed reports in the news suggest that to get around the problem of detection by DPD, there was created:

"a kind of underground legal system whereby some plots have been sold to speculators, while the original owner (not allowed to sell for five years by NCC) remains the 'legal' owner only nominally."(6)

Two other trends have also been observed with respect to plot ownership. It appears that plots from which original allottees have

been evicted have not been allocated to people on the approved waiting list. In addition, the Project Manager has alleged that people on the waiting list for plots in Phases II and III are being bought out by middle class interests.(7) The demand for plots in Dandora appears to be sufficiently high to warrant selling plots which have not even been created. An examination of the investment potential of a plot developed with four habitable rooms, the maximum permitted with single story construction, is sufficient to illustrate why the demand is so high. Table 5.7 illustrates the calculation of the "internal rate of return" of an investment in a typical Option B plot 140 square meters in area, developed with four rooms, at a total cost of Ksh 14,400. The plot owner is eligible for a materials loan of Ksh 2880 and it is assumed he borrows the difference of Ksh 11,520 from a commercial bank at 10% interest repayable over three years. It is also assumed that the rooms are built within three months of allocation and rented out at an initial rent of Ksh 150 per month. Rents are assumed to increase at a rate of 10% per year for 12 years. Monthly payments are assumed to remain constant at Ksh 252 per month and maintenance costs are assumed to be zero. The internal rate of return of the investment is 100.8% over the first 12 years. By the fourth year the owner collects over Ksh 6650 (\$786) per year. If this was his only income, he would automatically be better off than 45 percent of Nairobi's population. The calculation has assumed that the owner occupies the contractor-built kitchen, or that it is shared by the occupants of the four rooms. In fact, it is more probable that the owner will be an absentee landlord and sublet the kitchen as well. In this case he will receive an additional Ksh 200

per month in the first year because the kitchen has its own water supply and chimney flue. If this extra revenue is taken into account in the example given, the internal rate of return jumps to 687.4 per cent! The example is not as farfetched as it sounds. An evaluation of Nairobi's Kariobangi sites and services schemes undertaken in 1971 showed that 94 percent of all 723 plots were owned by absentee landlords.(8) Moreover, the methodological assumption of the IRR calculation that all interim profits accruing to the owner are reinvested at a rate equal to the internal rate of return is capable of being satisfied by virtue of the opportunities for further investment in the 5,000 plots in Phases II and III.

Table 5.7

Cash Flow for Sample Plot Development (Ksh)

Year	Rental Income	Payment to DPD	Commercial Construction Loan	Net Cash Flow
1	5,400	3,024	4,632	-2,256
2	7,920	3,024	4,632	264
3	8,712	3,024	4,632	1,056
4	9,576	3,024	---	6,552
5	10,536	3,024	---	7,512
6	11,592	3,024	---	8,568
7	12,744	3,024	---	9,720
8	14,028	3,024	---	11,004
9	15,432	3,024	---	12,408
10	16,968	3,024	---	13,944
11	18,672	3,024	---	15,648
12	20,532	3,024	---	17,508

Employment

To date no survey has been done on the amount of wage employment which exists in and around the project. The lack of completed community and commercial facilities in the central spine indicate that it is virtually

non-existent.

Project Administration

The Project Manager's inability to persuade the Project Committee to enforce the regulations governing plot ownership was another event in a long list of episodes which culminated in his resignation in April 1978. The weak position in which he found himself had been exacerbated by the political infighting which had occurred between the different factions of the Kikuyu clan who dominated the City Council. Not being a member of the most powerful faction closely allied with the President, he was at a distinct disadvantage when disagreeing with actions of the City Council which ran counter to the IBRD agreement. His resignation was not the only one. Since December 1977 the Deputy Project Manager, the Project Architect/Planner, the Project Architect and the Head of the Community Development Section have also resigned, partly out of the frustration with the political intervention in the operation of Dandora. Thus as Phase II approaches, the project administration will be lacking most of its experienced leadership.

There is also another important development which has contributed to the decline in morale of the project team: the City Council has resumed its "clean-up operations" of squatter areas in central Nairobi in a manner which is contrary to the IBRD agreement. On at least six different occasions between October 13 1977 and March 7 1978 the City Council has used bulldozers to clear shanties, food crops and open-air workshops from four different areas close to the city center. The demolition was undertaken with little or no notice and none but a small fraction of households has been offered alternative accommodation.(9)

IBRD reaction to the first of these incidents has been restrained and has amounted to no more than a letter to the Nairobi Town Clerk advising him of the violation.

Conclusion

By some measures Dandora Phase I is a resounding success. The centrally organized preparation of 1,000 serviced plots was accomplished within five months of the scheduled completion date. Six thousand allottees were selected from double the number of applicants in less than three months. Within one year of occupation, nearly forty percent of the plots had been developed to the minimum required level. Moreover, the work was of such a high standard it surprised even the project management. The proportion of allottees who had defaulted on their plot and material loans within the first six months was less than 2%. In fact, as of June 1977 fewer than 6% of the allottees were more than 3 months behind in their monthly payments. The materials loan and technical assistance programs are working according to plan. Dandora had the outward appearance of a booming low-income settlement on the periphery of Nairobi.

By other measures, Dandora Phase I has fallen short of its goal as a comprehensive community development for Nairobi's low-income groups. Actual monthly plot charges are 50-90% higher than had been estimated at the time of project appraisal. The monthly rental for a single room in Dandora, estimated to be Ksh 153 in December 1977, is too high to be affordable by households below the 39th percentile in the income distribution curve. The amount of self help used in constructing dwellings has fallen short of project planners' expectations. Overall unpaid or

self help labor constituted less than 22% of the total labor force used. There is evidence to show that 10% of Phase I plots have already been sold on the open market by the original allottees. The penetration of the project by the middle and high income groups is expected to continue since applicants on the waiting list for plots in the future phases of the project have been known to sell their rights to such plots. The construction of community facilities is 18 months behind schedule. As of December 1977 there were but 15 temporary kiosks to cater for the shopping needs of 4,000 residents. No permanent jobs had been created. A decline in the morale of the Project Department, in part caused by political intervention in the operation of the scheme, has contributed to the resignation of no fewer than six top level managers.

Chapter 5 Notes

1. Interview with personnel of the Urban Projects Department of the World Bank, February 3 1978.
2. Senga, Ndeti and Associates. Dandora Monitoring and Evaluation Data Interpretation Statement (MEDIS) 2, Nairobi, July 1977, Table 9/8.
3. Senga, Ndeti and Associates. MEDIS 3, Nairobi, March 1978, p.51-52. The sample consisted of that portion of a stratified random sample of allottees who met the following conditions: (1) have occupied plot; and (2) have completed construction of minimum number of required rooms.
4. Senga, Ndeti and Associates. Ibid, p.32.
5. "Self Help the Key to Urban Survival", The Guardian, January 15 1978.
6. Ibid.
7. These allegations were relayed to the author in personal correspondence from an officer within the Nairobi City Council in April 1978.
8. Houlberg, et al. Sites and Services Analysis and Report, Nairobi Housing Research and Development Unit, Nairobi, 1971, p.81.
9. Senga, Ndeti and Associates. MEDIS 3, p.107. See also "Shanties Flattened in Bulldozer Swoop", The Daily Nation, October 14 1977, and "Out Go the Squatters: Axe Squads Flatten Huruma Shanties in Dawn Swoop", The Daily Nation, November 3 1977. Also "Kenya's Poor are Bulldozed out of Town", The Guardian, January 15 1978.

Chapter 6

Theory versus Practice

Introduction

It is clear that in practice many of the observed outcomes at Dandora differed markedly from those predicted by the theory of sites and services. The purpose of this chapter is to examine the interrelationships between these outcomes. The analysis is done from the perspective of a policy maker concerned with implementing a sites and services scheme in the context of severe low-income housing shortage in a free-market economy.

The shortcomings apparent in the Dandora project are of two different kinds. First, there are those which stem from erroneous assumptions about Nairobi's housing policy environment. These assumptions deal with such factors as the priority of housing in the lives of Nairobi's low-income population and the power of the market to re-allocate housing once it had been allocated by the City Council. Second, there are weaknesses which stem from contradictions which are inherent in the sites and services approach itself. These contradictions arise because the strategy attempts to achieve multiple and often mutually exclusive goals. In some cases these conflicts were exacerbated by groups of actors in the Project. From a policy perspective, these structural weaknesses are considered more troublesome than the failure to understand or

acknowledge the nuances of Nairobi's housing problem. Whereas the latter can be corrected with experience or renewed political will, the former are endemic to the sites and services concept and will not disappear with the marginal adjustments to the approach.

For this reason the analysis of Dandora presented here is organized around the following five predominant contradictions: price versus standards; subsidies versus replicability; self-help labor versus wage employment; middle-income beneficiaries versus low-income beneficiaries; and sponsor control versus participant freedom. For purposes of discussion, each contradiction subsumes a number of related issues which are dealt with in the analysis. There are, of course, linkages between the contradictions. These linkages generate the complete "issue web" confronting the policy maker.

Each of the five sectors of the issue web is described in the form of a diagram which depicts the cause and effect relationships between the variables contributing to the contradiction. Each diagram serves as a preliminary sketch about causal hypotheses. For example, in Figure 6.1 an increase in the variable labeled "Required level of physical standards" is hypothesized to cause an increase in the variable entitled "cost of labor and materials per plot." This causal relationship is indicated by the arrow leading from the causal variable to the effected variable. The "+" sign indicates that as the first variable increases ceteris paribus, so does the second. A "-" would indicate that as one variable increases ceteris paribus, the second one decreases. See, for example, the relationship between the variable called "net subsidy for low-income plot development" and "monthly price of housing services to low-income allottees" in Figure 6.1. The "+" and "-" signs do not imply

value judgments, but rather the direction of change in one variable as a result of a change in a causal variable.

Housing Prices versus Housing Standards

One of the most prominent conflicts in the Dandora Project occurred between the proponents of low housing prices at the expense of high housing standards and those who argued for high standards at the expense of low prices. Standards can be defined as:

"measures of the acceptability of housing at a given time and place and in a given cultural, technological and economic setting."(1)

The standards at issue at Dandora were those that dictated the quality of the physical content of the project, that is the built form, open space, movement systems and public services. Prices were measured in terms of the monthly charges an allottee had to pay in return for the housing services he received. The linkages between standards and prices are illustrated diagrammatically in Figure 6.1. In simple terms, higher physical standards dictated higher development costs. With a fixed policy on financial subsidy, terms of repayment and user charges for utilities, higher development costs per plot dictate higher monthly prices. The link is a determinate one and forms the basis for calculating the monthly charges payable by the allottee.

The arguments in favor of higher standards included a humanitarian concern for the health and welfare for the project participants, an aversion to sanctioning a double standard for housing in Kenya's urban areas (viz., one for the rich and one for the poor), fear of reprisals from central Government if local Government did not strictly observe established legal standards, a fear that Dandora would become another

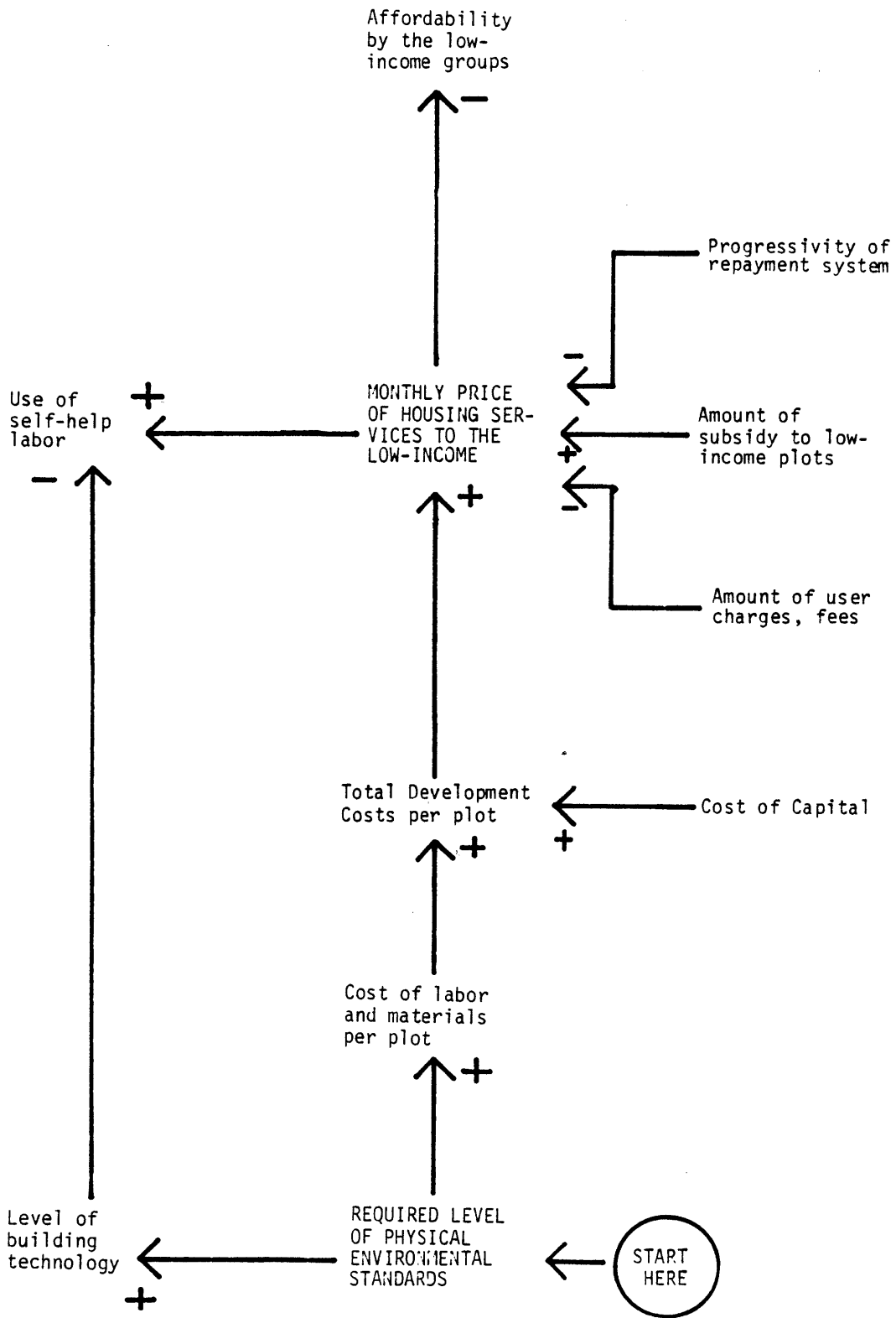


Figure 6.1 Housing Prices and Housing Standards

slum, lower maintenance costs on the project, and long-run economic efficiency. The Medical Officer of Health was the leading proponent of higher housing standards.

The major argument in favor of standards lower than established legal norms was put forward by the IBRD and the technical officers of the City Council. The argument was affordability. Given that the low-income groups should pay for their housing but that the portion of their monthly income devoted to it should not exceed twenty-five per cent, every shilling increase in monthly payment necessitated a four shilling increase in income. The increase in standards advocated by the Medical Officer of Health would have added Ksh 5520 (\$660) to the development costs of every plot in Phases II and III. This would have increased the monthly amortization payment of Type A allottees by Ksh 42 (\$5.10) per month. Affordability criteria would require minimum monthly incomes to be Ksh 170 (\$20.40) higher than was actually required. Given the income distribution in Nairobi, this would have put the benefits of the scheme beyond the range of anyone earning less than the median income (refer to Figure 5.1). The Medical Officer of Health counterargued that government subsidies should make up the difference in development costs attributed to the increased standards. As it was, the Government agreed to provide the subsidy needed to meet the additional cost of the higher standard sewer system for Phases II and III.

The issue of standards was also raised when the building sub-contractor proposed to construct the core units with the prefabricated concrete panel system. This time it was the technical officers in the City Council and not the politicians who were responsible for the increase in standards. Because of the conditions of the contract for the

building works and the promotional nature of the sub-contractor's bid, many of the extra costs were paid for by the sub-contractor. Thus, as with the revised sewer designs, a form of net subsidy was used to pay for the increased standards.

Before discussing the question of subsidies, an indirect consequence of higher standards and prices should be noted. Where improved standards are achieved through higher levels of technology, such standards may reduce the opportunities for self-help construction. In Dandora an early decision to provide water-borne sanitation instead of pit latrines undoubtedly had this effect. Ironically, where higher standards lead to higher prices, there may occur an increased need for self-help labor to keep the financial cost of the whole venture within the range of the low-income participants.

Finally, the problem of standards in Dandora had another impact on costs and prices: the time required to settle the issue introduced a delay of six months in the implementation of Phase I. It created the twelve month delay currently experienced in Phases II and III. Inflation, estimated at 12% per annum for civil works in 1976, accounts for some of the increase in costs observed in Phase I (refer to Table 5.2). The net result of all the direct and indirect impacts of the standards issue will very likely put the price of the remaining 5,000 plots altogether out of the range of the original participant population.

Subsidy versus Replicability

We observed in Chapter 5 that net subsidies, whether public or private, provided one way to control the level of monthly housing prices in Dandora. Such subsidies, however, only work at the expense of project

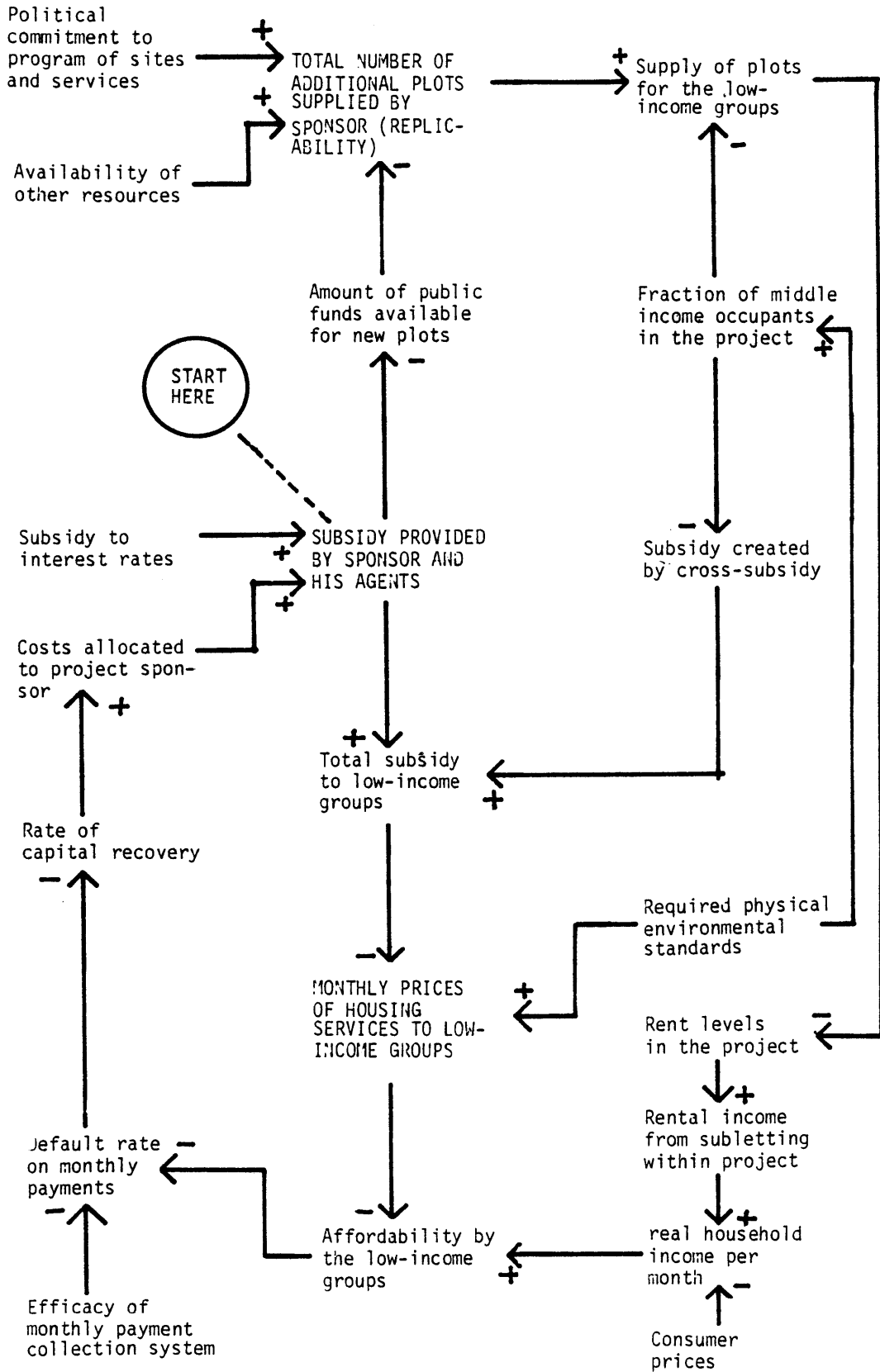


Figure 6.2 Subsidies, Replicability, and Affordability

replicability. That is, the greater the net subsidy provided to Dandora, the greater the probability that the project could not be replicated at other locations as part of a large scale sites and services program. Public funds amounting to Ksh 2,800,000, required to pay for the higher standards of sanitation in Phases II and III, could have paid for another 318 Option A plots at the original standard of sewerage disposal, given the availability of other resource inputs (refer to Figure 6.2). the private subsidy provided by the building sub-contractor would clearly not have been forthcoming if Dandora had not been an experimental project in which attempts were made to demonstrate the virtues of innovative, if somewhat inappropriate, technology.

While net subsidies do reduce the potential replicability of a project by absorbing funds which would otherwise be spent on extra plots, they also result in lower monthly prices for those allottees who receive subsidies. Since one objective of Dandora is to cater for the housing needs of the low-income groups, the relative absence of net subsidy in Dandora has compromised the achievement of this goal.

Cross-subsidy represented another way of reducing monthly prices of at least some of the plots in Dandora. Two attempts to achieve a cross-subsidy from the more expensive plots to the cheaper plots failed for reasons cited in Chapter 5. It is instructive to examine what ratio of expensive plots to cheap plots would have been required to generate the cross-subsidy needed to bring the development costs of 478 Option A plots down to the estimated level.

Table 5.1 indicates that actual plot development costs charged to Option A allottees exceeded estimated costs by Ksh 4400 per plot. This means that a total cost overrun of Ksh 2,103,000 was incurred on the 478

subsidized plots. With a profit of Ksh 7000 made on the sale of one Option C plot, it would have taken 300 such sales to reduce the actual development costs charged to the A allottees down to the level of the estimates quoted in Table 5.1.

This implies that an economic mix of 3 middle-income plots to every 5 low-income plots was required rather than the ratio of 1 to 9 provided in the project. The combination of requirements for no net subsidy, affordability by the low-income and standards such as used in Dandora Phase I suggest that an economic mix in the order of 3 out of 8 or 37% is required to generate the necessary cross-subsidy. Clearly a policy of providing such a high proportion of middle-income plots runs counter to the need to give priority to the housing needs of the low-income. If replicability is to be achieved, standards need to be lowered and economic mix has to be increased. However, this will only work to the extent that lowering of standards and achieving higher economic mix among project occupants are not in themselves mutually exclusive.

Figure 5.1 gives a dramatic illustration of how unaffordable the project is, at least by the criteria established in the project preparation stage. One wonders how it is that the rate of defaults is as low as 2 per cent. There are a number of possible answers. First, it is likely that many of the plots are not in the effective control of the low-income groups. We have seen, in a number of cases, that plots have been sold by the original allottees. It has also been surmised that allottees are acting as "fronts" for wealthier plot developers. In both cases, low-income allottees have either withdrawn from the scheme altogether or are now tenants on their own plots. In both cases an important stated objective of Dandora homeownership has been subverted.

Second, it is possible that the permissive policy of subletting has provided the low-income allottee who has already built his dwelling with a source of rental income with which to offset the higher monthly charges. Partial subletting was intended as a means of improving the lot of the low-income groups in Dandora. However, the rent levels recorded in December 1977 suggest that it is not the very low-income who are occupying these rental units, as intended by the project planners.

A policy to permit subletting cannot therefore be justified on the grounds that it provides housing to the poorest fifth of Nairobi's population. That is, subletting is not contributing to the goal of vertical equity so long as the rental and ownership market cater for the same income group, i.e. those earning Ksh 600 per month or more.

Self-Help Labor versus Wage Employment.

This section deals with a complex web of issues that concern the generation of wage employment and the stimulation of self-help efforts at community development (refer to Figure 6.3). Dandora, like many sites and services schemes in Kenya, is notable for the lack of self-help labor in dwelling construction. The project's allocation criteria demanded that allottees have a stable income. This meant that most allottees had regular employment and could not devote time during the working day to build their houses. Lack of electricity for on-plot lighting precluded construction at night. The opportunity costs for self-help labor were too high, particularly for those better-off allottees on Option B plots, to permit much accumulation of "sweat equity". The Monitoring and Evaluation Study's sample revealed that 22% of the labor force in Dandora Phase I was of the self-help variety. Table 5.6

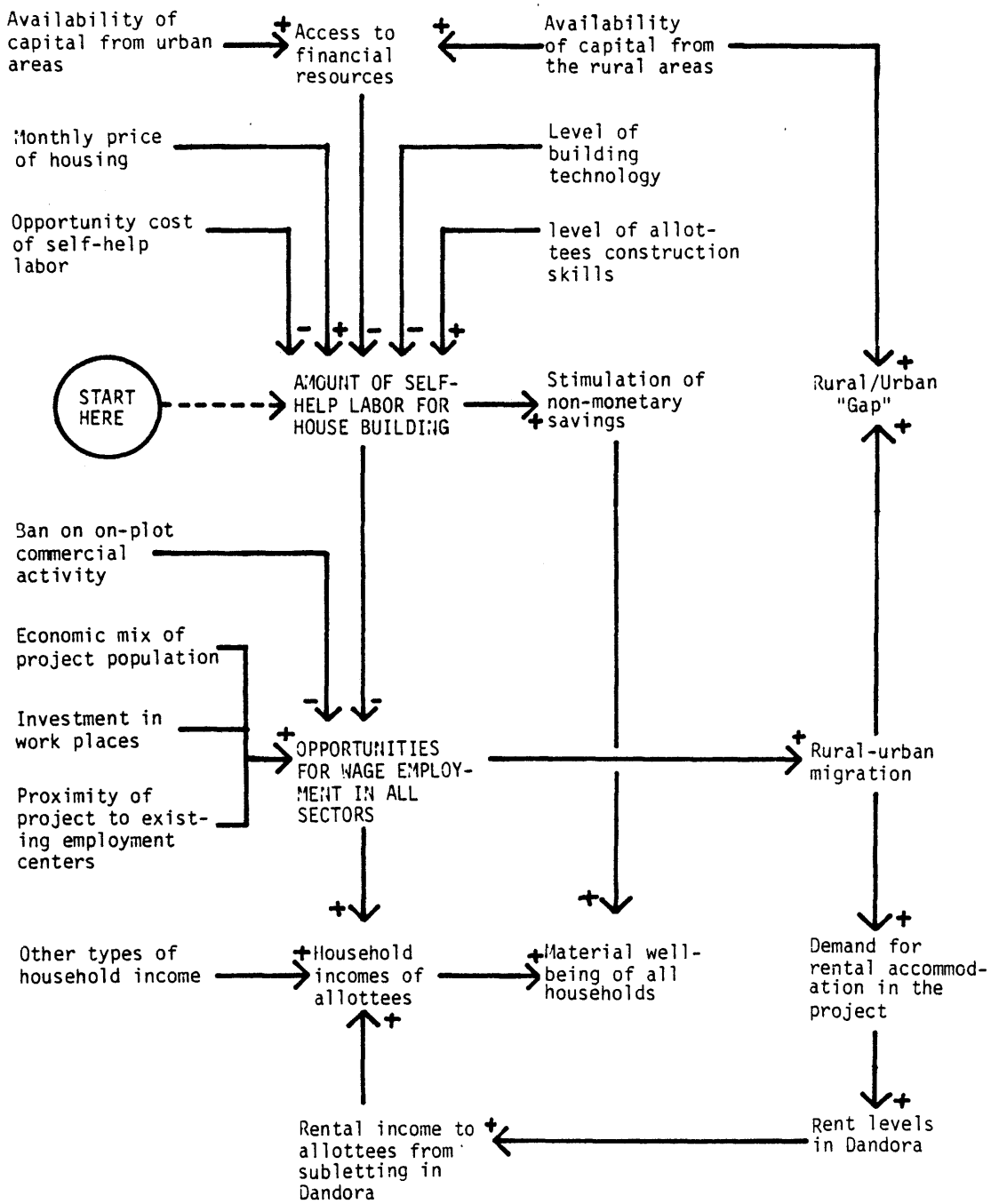


Figure 6.3 Self-Help Labor and Wage Employment

indicates that the cost of labor required for one room is about Ksh 1000. If this labor cost represents 78% of the total value of labor contributed to building one room, then the value of the self-help (unpaid) labor must be Ksh 280. This amount represents less than 8% of the total value of the room, including materials. The reluctance to use self-help labor has permitted many artisans (fundis) and small contractors to take full advantage of the demand for construction skills. The institutional barriers, such as credit and bonding procedures which impose constraints on African participation in large construction jobs associated with the formal sector did not create similar obstacles for small scale "informal" operators. The latter, requiring little capital and having almost non-existent overheads, were engaged by plot allottees who provided the materials purchased with the materials loan.

No figures are available to indicate how much labor was provided by people who migrated to Nairobi in direct response to the flurry of demand for both skilled and unskilled construction labor. The reports indicating substantial flows of money into the project from the rural areas suggest that the income earning potential of Dandora was well known to the rural kin of plot allottees. It is not unreasonable to assume that a number of rural folk arrived on the project site in search of employment and perhaps carrying Ksh 100 or more from an uncle or cousin to be invested in a relative's plot. The flow of people and capital from the countryside into Dandora is part of the rules of the game in Kenya's mixed economy but it augers badly for the long-run interregional economic equity of the country. In addition, the increased population flow to the project region will increase demand for rental accommodation in the project, forcing rents up even higher than they are

now. Moreover, this induced influx of people in search of jobs, not housing, may exacerbate the creation of spontaneous squatter settlements in the city. It is unlikely that these people will return to the countryside once housing construction is complete. Employment in the construction sector at Dandora is at best a short-term phenomenon, given that nearly forty percent of all plots had completed the minimum required dwelling within twelve months of occupation.

Employment opportunities associated with the planned community facilities and other forms of investment have not materialized. As of December 1977, there were no significant sources of formal employment for plot allottees and their families. Of fifteen temporary plots reserved for the use of materials suppliers, only two had been occupied, with consequent loss of employment opportunities. The construction of the primary school, though begun, had not been completed. The construction of the health clinic had not been started because of disagreement within the City Council on the issue of standards. The Medical Officer was unhappy about using a type design which had been especially prepared for Dandora but which had not been tested in practice. The new design called for lower standards of accommodation and lower costs. There is no evidence that any commercial or industrial investment has occurred to date.

Allottees' attempts to create their own informal employment has been hampered by the City Council's control of unlicensed trading. Efforts to establish food kiosks on residential plots have been met with stiff resistance from DPD. Recently, however, fifteen unnumbered plots have been allocated to residents for purposes of setting up small food stands, cum corner stores.

Self-help is a straw man in Dandora. It cannot be said to have detracted significantly from the supply of wage paid jobs associated with house construction. In spite of this there is still a lack of new and permanent job opportunities in the project area. This situation is exacerbated by the project's location. As yet, casual labor does not have the accessibility to employment centers needed to keep up the continuous search for work. The lack of employment with opportunities for upward mobility will not contribute to the stability of the community. Dandora is already beginning to look like the dormitory suburb some of the project planners feared it would become:

" In light of the distance of this scheme from the city center, and the number of persons expected to occupy the site, it must be remembered that in effect another town is being built. All the services and amenities of a town must be provided, if Dandora is to become anything more than a 'bedroom community', from which people flee in the mornings to their jobs and return in the evenings."(2)

Middle Class Penetration of Dandora

One of the most persistent tendencies observed in sites and services schemes is the propensity for the middle- and high-income groups to gain control of the project despite Government controls to avoid this phenomenon. Figure 6.4 illustrates the ways in which this can occur. These mechanisms include the means by which the better-off in society acquire control over land through the acquisition of plots. They can also benefit from projects by controlling sources of capital and other construction resources, including technical assistance. Dandora has not escaped this tendency. In particular, the ownership of land has already emerged as the leading issue despite efforts by the planners to ensure that plots would be allocated to and retained by the low-income

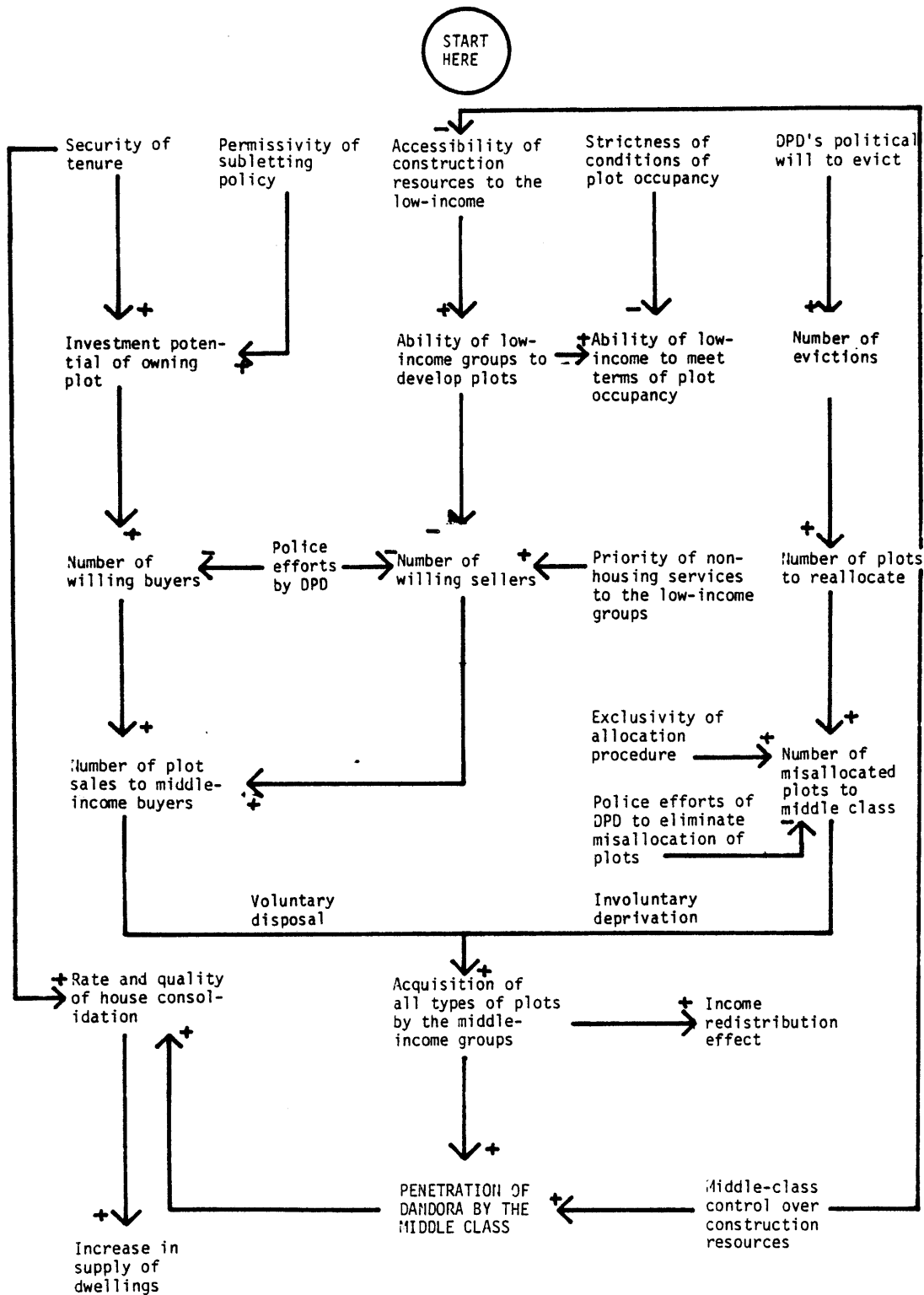


Figure 6.4 Middle Income Beneficiaries and Low Income Beneficiaries

groups.

There is an important distinction among the ways in which plots fall into the hands of the middle class. In the first instance, they purchase plots on the open market under the conditions of willing seller, willing buyer. In Dandora this is illegal until the fifth anniversary of signing the lease agreement. The conditions of occupancy are designed to eliminate sell-outs before the community has had a chance to consolidate. If an allottee wants to leave the project, he must sell the plot back to DPD in return for compensation for improvements based on the cost of materials and an imputed cost of labor. Secondly, the middle class can gain control over plots through fraudulent allocation either at the beginning of the project or when a plot comes up for reallocation after an allottee has been evicted by DPD. This is also illegal. However, whereas fraudulent allocation involuntarily deprives the low-income groups of plots, sale on the open market is a voluntary transaction. The sale of 8-10% of plots in Phase I which had occurred by January 1978 suggests that the original allottees saw greater net benefits in selling their plots than they did in occupying them. That is, they had a greater need for the one-time cash payment than for Dandora's housing services. The reasons for this may include project location too far from the allottee's place of work, inability to raise sufficient funds to complete an acceptable dwelling within the stipulated time and family needs which take priority over investing in a permanent urban house. In this regard reference should be made to the description in Chapter 3 of the patterns of circular migration and the one family/two household arrangement which militate against urban homeownership as a first priority amongst the low-income. In other words, for at least 10% of Dandora's Phase I

population there is a mismatch between user priorities and the kind of housing services supplied by the project.

There are several other factors which conceivably accelerate the market turnover of plots. A plot in Dandora is an extremely attractive investment, as illustrated in Table 5.5. The clarity and security of tenure granted the owner upon completion of an approved dwelling makes the property still more attractive as an investment by reducing the risk of losing possession of the plot. Finally, an allottee who has an unstable income may have a high "discount" rate and hence he is willing to sell his plot, even at a relatively low price. That is, he may value the immediate but modest returns from the sale of his plot more highly than the larger returns earned in the long run by subletting.

An examination of Figure 6.4 reveals that the efficacy of the procedure for evicting delinquent allottees may in fact exacerbate the turnover of plots on the open market. If an allottee is unwilling or unable to develop his plot within 18 months of occupation or to the standard approved by DPD he may sell it quickly before DPD evicts him. The market sale will give him a higher return than the compensation offered by the Government for reasons outlined above.

A full explanation for the high rate of house consolidation on some plots must await a more complete investigation by the Monitoring and Evaluation Study. Undoubtedly, the high returns to subletting has created one important incentive for rapid development. It is also likely that the partial displacement of the low-income groups by the middle-income groups accounts for this phenomenon. The middle-income, by definition, command more resources with which to build houses and can therefore be expected to build faster than their poorer brethren.

From an operational point of view it becomes important to determine why 23% of all plots show no signs of development (refer to Table 5.4). An analysis of the financial and social situation of the owners of the 166 Option A plots and the 52 Option B plots on which no development has occurred would help explain this phenomenon. One would not be surprised to find that these plots are still in the hands of the original allottees who were drawn from the intended "target" income group. Given the actual costs of owning a plot in Dandora, they may now find themselves unable to afford to develop it (refer to Table 5.3). Alternatively, the undeveloped plots may be being held for purely speculative reasons. The owners, whatever their income bracket, may hope to achieve capital gains on the sale of their plots at a later date. In order to avoid eviction by DPD the sales would have to take place within 18 months of signing the lease agreement. This period of time would be long enough to realize greater profits than those that could be earned by depositing the monthly payments in a Post Office savings account earning 5% per annum, a popular savings instrument among Kenya's low-income. A third reason which may account for the absence of development on one quarter of the plots may be the control exerted by the sponsors over the manner in which the low-income can develop their plots. This factor is described in the next section, which deals with the more general issue of sponsor control versus participant freedom.

Sponsor Control versus Participant Freedom

The evolution of the design of Dandora as described in Chapter 4 clearly shows the trend towards increasing sponsor control at the expense of the initial desire for the participants' freedom of choice. Government

authorities in Kenya and officials of the IBRD were anxious to avoid the possibility of having the project slip out of their control and becoming another ramshackle appendage to Nairobi, "the City in the Sun". They did not want Dandora to repeat the failures of past sites and services schemes which they saw as languishing in a state of semi-consolidation. The desire to ensure rapid and high quality development led to the adoption of policies which sought to reduce the number of ways in which the project could get off the track. The "systems analytic" view of this strategy would suggest that DPD was aware of Murphy's Law ("If anything can go wrong it will.") and they used Ashby's Law of Requisite Variety ("The variety of a controlling system must be at least as great as the variety of the system being controlled.") to minimize its applicability.

This strategy of risk aversion was conceived not so much in terms of increasing the complexity of the management system, but rather in terms of reducing the variety of project components offered to the allottees. It is likely that the net effect of these policies was to make it more difficult for the low-income to build their houses. Indeed, the policies may have made it more difficult for the low-income to survive at all inside the project. Figure 6.5 illustrates the nature of the contradiction between administrative control and participant freedom to select the means by which to build a house, earn a living, use his land and choose his neighbors.

In the project formulation stage it was decided that the proposed urbanization project must be large enough to have a demonstrable impact on Nairobi's housing supply. Later, during the project preparation stage, practical considerations of implementation dictated that the

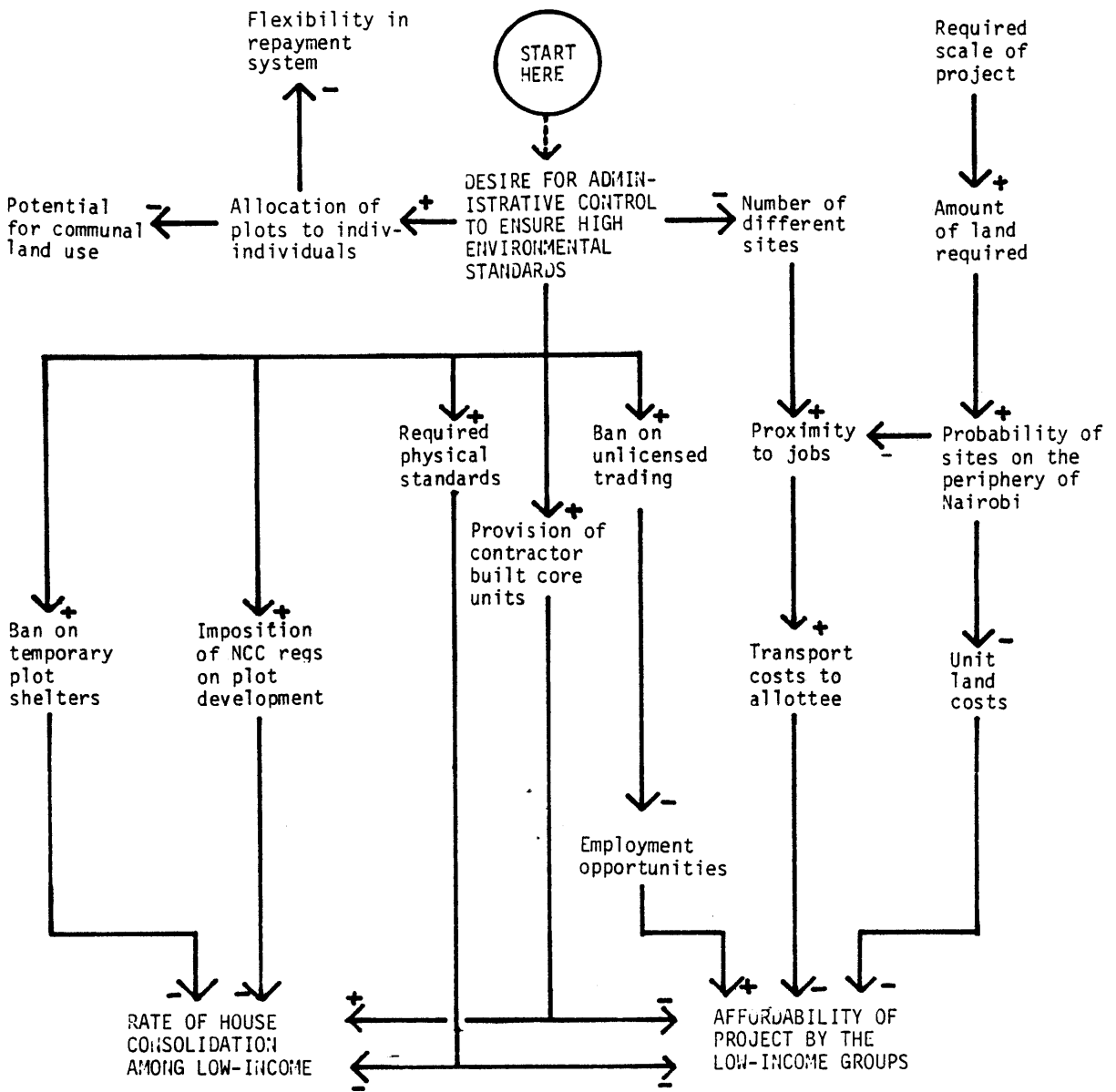


Figure 6.5 Sponsor Control and Participant Freedom

whole project should be located on one continuous site. Meeting both constraints at once required selecting a site relatively far from the city center and related employment opportunities. The peripheral site did offer cost savings because land was cheaper than in more central locations. However, transportation costs incurred in traveling between work places in town and the project site had a countervailing effect on affordability, as discussed earlier.

In an effort to control plot occupancy, development and capital recovery, all plots were allocated to individuals as opposed to groups of individuals. This limited the ability of the allottees to develop patterns of communal land use. Moreover, allocating plots randomly without regard to participants' preferences for neighbors further individualized the nature of plot use and control. Assigning legal responsibility for plot repayments to individuals eliminated the flexibility often required to meet regular mortgage installments out of an irregular flow of income. Insisting on payments at monthly intervals further reduced the scope for coping with family emergencies of a kind that can leave the head of a household temporarily "out of pocket".

To ensure control over land use in Dandora, the Council invoked a number of municipal by-laws which banned unlicensed trading from the site and prohibited commercial and industrial activity from residential plots. This curtailment of "informal" employment undoubtedly had an effect on household incomes in the project area. It is unlikely, however, that the enforcement of these by-laws will continue for very long. In the first place, the City Council does not have the police force necessary to keep up the scrutiny required. In the second place, "informal employment" provides one outlet for political unrest, a kind of steam

valve to relieve pressure on the Government for additional services.

Dandora's planners prepared standard house designs for use by the allottees. The plans specified the layout of the dwelling, the construction system and materials to be used. They were ostensibly prepared to speed up the process of plot development. It was argued that since the plans were already approved by the City Council they could be used without the time consuming necessity of obtaining this approval for each and every individual plan. Legally, plot holders did not have to use such plans, but this fact was not widely known. The net result was the specification of a quasi-compulsory style of house construction which was not amenable to using large quantities of self-help labor. Since financial credit from DPD was available only for materials, the low-income groups may not have been able to afford the KSH 1000 for labor required to build each room. Recall that Dandora was designated a Grade II Building zone in January 1975. Under this by-law, a relaxed standard of house construction is permitted. For example, under the section dealing with the construction of exterior walls it says:

"No walls shall be constructed to a lower standard than wattle or timber adequately framed together and filled and covered with mud. Such walls shall be capable of supporting the roof....: Provided that the Council may specify the materials to be used in constructing and finishing the walls."(3)(emphasis added)

It appears that the City Council granted the right to build to relaxed standards amenable to self-help labor and then took it away by preparing the type plans calling for, inter alia, walls made of concrete block or dressed stone. Such action reveals the City's preference for aesthetically pleasing "modern" development over more traditional and affordable forms of housing for the low-income groups. The criterion

of minimal but improvable standards clearly does not apply to that part of the development process most suitable for user participation: the dwelling. This factor undoubtedly accounts in part for the low rate of consolidation on the unoccupied plots, particularly the Option A plots allocated to the poorer half of the "target" group.

Initially the Council took a similarly narrow view of the issue concerning the construction of temporary shelters on plots. The Monitoring and Evaluation Study has shown how the rate of plot consolidation increases with plot occupation.(4) Plot occupation eliminates the need for alternative rental accommodation, freeing money that can be used in building the "approved" dwelling. It also reduces the time and expense involved in traveling to and from the plot while construction is underway. Temporary shelters also become storage areas for construction materials and tools. On Option A plots, with core units consisting of a toilet and shower, a temporary shelter is a necessity if the allottee wants to occupy the site prior to finishing his dwelling. The outcome of the debate, described briefly in Chapter 4, resulted in a compromise permitting allottees to use temporary shelters until the expiration of the 18 month construction period. Nevertheless, the number of such "site offices" has declined since the Council first ordered the buildings demolished in March 1977. The low rate of house consolidation observed on unoccupied Option A plots may, in part, be explained by this decline.

The Nairobi City Council's paramount desire to control the quality of the physical environment in Dandora resulted in the adoption of uniformly high standards of infrastructure. Whereas the Grade II by-law

permits pit latrines, DPD adopted water-borne sewerage. In the one case where DPD adopted a standard of secondary road construction below the "full adoptive standards" normally required by the Council, the Highways Section refused to take them over for maintenance.(5) The attitude of the City Council in this matter hardly conveys an impression of commitment to minimal but improvable standards in the interests of providing affordable housing to the low-income groups.

The subjugation of Dandora to all the formal development regulations of the Nairobi City Council effectively removed decisions concerning dwelling construction from the hands of the project participants. From a bureaucratic perspective Dandora Phase I resembles a conventional public housing project for which the City engaged one contractor for each plot. Each contractor was required to build a "permanent" dwelling according to a pre-selected and approved plan within 18 months. In return the contractor received leasehold title to the land on which the dwelling was built.

Conclusions

The analysis of the observed outcomes at Dandora has exposed some of the major inherent contradictions which caused the project to fall short of its goals. It has also revealed some of the flaws in Nairobi's housing policy environment which militate against a successful low-income housing policy. The net effect of both sets of impediments was the transformation of a multi-sectoral community development project characterized by self-help and home ownership into a rental housing scheme coming increasingly under the control of the middle class. In this sense, the real impact of the strategy of sites and services as

depicted by Dandora has much in common with Kenya's conventional public housing program. Aside from the initial income redistribution effect of allocating plots to the low-income group, the policy must be seen as one having greater continuity with past housing policies and less as one of a radical new attempt to help Kenya's urban poor.

Chapter 6 Notes

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Chapter 7

Recommendations and Conclusions

Introduction

This final chapter describes the extent to which Dandora possesses the advantages and disadvantages of sites and services projects outlined in Chapter 2. Some implications of the Dandora experience for the future of the national program of sites and services are discussed. The low priority accorded to homeownership by the urban poor as indicated by fragmentary evidence of illegal plot turnovers suggests that Dandora is having an unanticipated side effect on the redistribution of income within the city's population. Some of the consequences of this phenomenon are discussed. Proposals for making serviced sites more affordable by the low-income groups are put forward and the consequences of these recommendations for income distribution are outlined. Finally, an alternative strategy of settlement upgrading is advocated as a way of extending the benefits of serviced dwelling environments to the poorest income groups in a manner more in keeping with their priorities.

How Well Has Dandora Done?

To date Dandora has provided 1,000 dwelling environments, but not at minimal financial costs. Attempts to achieve savings by encouraging

self-help construction of dwellings around mass-produced core units has failed to produce housing which is more affordable than the vast majority of conventional units built by the Nairobi City Council prior to 1971 (refer to Figure 3.1). The equitable expenditure of government funds has been compromised to the extent that the low-income groups have been excluded from the project, regardless of whether their exclusion has been voluntary or involuntary.

Dandora's record of cost recovery to date suggests that the project is replicable. However, replicability alone will not ensure that future projects will benefit the urban poor. It must be accompanied by affordability if the effective demand for low-income plots is to be met.

The limited range of plot sizes and services as well as restrictive allocation criteria precluded the testing of the applicability of sites and services to all income groups, hence its efficacy as an integrator of social classes is still questionable. However, the relative abundance of middle- and upper-income housing available in Nairobi suggests that it will be several years before the better-off residents of Nairobi will need to seek accommodation in those parts of the city traditionally occupied by the urban poor, that is, those areas east of the city center (refer to Figure 1.1). This has not prevented the middle classes from taking a financial interest in the project: not as shelter for themselves but as income-earning assets. The demand for plot ownership by the well-to-do has been met with a willingness to supply these plots by low-income allottees. The net result of these illegal market sales has been the one-time redistribution of income in favor of the original plot owners. The emergent pattern of plot ownership and utilization does not reflect increasing social integration. It is too early

to judge whether Dandora has had the opposite effect: creaming off the richer strata of the "target" population, thus severing their economic and social links with their poorer compatriots.

It remains for future projects to test the adaptability of the strategy to meet different kinds and levels of services demanded by the participant population. Similarly, the strategy's adaptability to changing resource markets has yet to be examined.

The project sponsor's control over the quality of the dwellings built has had a two-edged effect. On the one hand, it has improved the image of sites and services as an approach to housing in the eyes of some of Kenya's policy makers by contributing to the project's rapid rate of consolidation. On the other hand, sponsor control has undoubtedly frustrated the efforts of some of the members of the intended "target income" group by denying them the consumer sovereignty which was to permit them to house themselves as they saw fit, in a spirit of self-reliance. If self-reliance can be measured by the quantity of self-help labor in the project, it is small indeed, though admittedly for reasons not entirely due to the project design.

The experimental nature of Dandora makes it hard to say whether sites and services are administratively simpler than conventional public housing projects. Undoubtedly the enforcement of all the plot development regulations promulgated by the Nairobi City Council did little to achieve administrative simplicity. Standard house designs contributed the most to minimizing the number of bureaucratic approvals required to build a house but not below the level required for the City's highly standardized public housing projects.

Even the most casual observation of the physical condition of Dandora

would lead to the conclusion that the quality of the environment is higher than that of any of Nairobi's squatter settlements. With the single, temporary exception of refuse collection, all public service systems were of substantially higher quality than those found in autonomous urban settlements. The single piece of infrastructure which was not up to full adoptive standards was the secondary road system and for this reason the City Council refused to take it over for maintenance. To date Dandora has failed to deliver on its promise of community facilities.

Dandora provides the municipal authorities with a controlled development. However, the project's gestation period of seven years precluded the possibility that it could act as a restraint on the growth of unplanned squatter settlements elsewhere in the city. For all its enormity, Dandora's 6,000 plots cater for hardly more than one year's growth in Nairobi's population. Moreover, because of its location on one peripheral site it cannot be assumed to satisfy the employment needs of its residents. This is particularly true since few permanent income earning opportunities, other than subletting, were built into the scheme. Dandora will not be selected as a place to live by those families who favor proximity to jobs over high quality dwelling environments. In the long run, of course, Dandora will be within the built up area of Nairobi and only time will tell what jobs might be created by then. It must be remembered, however, that by the year 2000 Dandora's 100,000 residents will be competing against three million other Nairobi residents for those jobs.

Implications for the National Sites and Services Program

What does the Dandora experience suggest about the probable regional impacts of Kenya's national sites and services program? Recall that the program allocates projects to existing urban centers to meet the needs of existing urban residents.

Allocation criteria schemes suggest no desire on the part of Government to induce additional rural-urban migration. Rather they serve notice that the cost of an individual's migration to an urban center must include a waiting period of at least six months before becoming eligible for the net benefits offered by a site and service scheme. The extension of this period to two years in the case of a Dandora indicates a weak attempt to divert any possible induced migration to other, smaller towns, all things being equal. However, there is little evidence that rural-urban migration is caused by a desire on the part of a family to improve the quality of its shelter. Moreover, since the current policy does not include the creation of permanent employment opportunities, the strategy must be seen as being relatively neutral with respect to direct population redistribution effects.

However, there is a possibility that short-term employment opportunities associated with the construction of such schemes may induce townward migration of those seeking jobs in the construction sector. Some models of rural-urban migration would predict such an influx to be proportional to the size of the scheme in question.(1) Since most projects contain fewer than 400 plots, the policy could be faulted for inducing a small peak of job seekers entering the local economy. It is unlikely that these new arrivals would return to the countryside after the house building has been completed.

The economic benefits accruing to a region as a result of the strategy will largely be in proportion to the capital investment already in place in the region since project sizes are roughly a function of the sizes of their host urban center. It is not anticipated, therefore, that the program will significantly alter the inter-regional disparities in wealth or income at either the aggregate or individual level. This is likely to be all the more true since, as already mentioned, there is no explicit permanent employment component to the policy. It is quite possible, however, that the observed trend of plot ownership passing into the hands of the middle class could accentuate existing intra-regional inequities in personal wealth and income. The concentration of plot ownership in the hands of the well-to-do occurs either by fraudulent allocation in the first place or by unauthorized sale after the initial allocation by the government.

Where the transfer of ownership occurs by voluntary sale this suggests an important lesson to learn from Dandora: the difficulty in identifying a "target" income group willing and able to engage in the incremental development of urban homes. The notion of "target" implies an ability to isolate the group from the rest of society. It ignores the real and important social and economic linkages which tie the low-income population with their better-off compatriots. Identifying a participant population is more than drawing a line on an income distribution curve.

Finally, given the bureaucratic inertia engendered by attempts to relax building standards in the interests of lower costs, it is to be expected that the progress in implementing the planned program will not be rapid. Delays, coupled with escalating construction costs, explain

why the national target of 72,000 plots for the plan period has been consistently reduced every financial year since 1974. In a system of budgetary incrementalism such as exists in Kenya the financial allocation for one year is heavily dependent on the actual expenditure incurred on the same item during the preceding year. Where delays reduce expenditure in one year, the following year's allocation is reduced proportionately, thereby lowering the number of units to be built that year. The lowered total number of plots further reduces potential expenditure and so, on it goes. As of May 1977, one year before the end of the current plan period, it was estimated that fewer than 7,900 plots would be prepared by June 30, 1978.(2) As a consequence the full impact of the program as currently designed will only reveal itself over a period of decades, not years. The reduced scale of the program coupled with the renewed trend for demolition of squatter dwellings by the Nairobi City Council suggests that the national program will not add significantly to the stock of low-income housing in the country.

Income Redistribution Effects

The scattered evidence of plot sales in Dandora suggests that the scheme is having an unanticipated effect on the distribution of income and income earning assets within the city (refer to Figure 6.4). From a policy perspective this effect is of considerable importance for two reasons. Firstly, it is reflective of the revealed preference among the original allottees for additional income over homeownership under the conditions offered at Dandora. Secondly, it is very largely unavoidable since there exist no administrative or incentive systems

that, at sensible costs, can eliminate the clandestine transfer of plots. Sensible costs would be those lower than the sale price of plots. While there are not a lot of data on the phenomenon, it seems reasonable to draw the following conclusions. In a situation characterized by severe shortage of approved low-income housing, the short run benefits to the vendor who values the cash more than the shelter can be significant. It thus becomes important to ensure that original allottees do not have incomes or wealth which exceed the maximum limits specified by the allocation criteria. Correspondingly, the need for minimum income limits becomes less important. However, in a situation such as Nairobi's, characterized by a growing shortage of approved low-income housing, the long run benefits would appear to be in favor of the buyer who sublets rooms on the plots. His investment income will rise as rents increase as a function of the growing housing shortage. The City's renewed commitment to the indiscriminate demolition of squatter shanties reduces the possibilities for the vendor to find the kind of shelter he prefers. At the same time, it increases the potential income which can be earned from a serviced plot, thus favoring the buyer. Moreover, inasmuch as buyers are likely to be from the landed middle-class, such land transfers will lead to increased concentration of urban land ownership.

We inevitably encounter a grey area wherein we find low-income allottees who continue to own and perhaps even occupy their plots but who also develop them for subletting. They, the intended beneficiaries of Dandora, reap the rewards of both home ownership and additional income, albeit the stream of income is made up of small payments

extended over time. As yet it is impossible to say how large this group is in Dandora.

It seems reasonable to assume that the propensity to sell a plot would increase with decreasing priority placed on homeownership. Since desire for homeownership appears to vary inversely with income at least at the lower income range, it would appear that housing projects which provide affordable homeownership to those earning less than Ksh 300 per month would be particularly susceptible to clandestine plot sales. This has implications for recommendations which have as their objective the lowering of prices in sites and service schemes. It is to these recommendations we now turn.

Implications for Future Project Design

In a study of sites and services schemes carried out in Tanzania in 1975, Robert Merrill made the following cogent remark about the sub-market best served by the strategy:

"Sites and services are not intended to serve the very lowest income groups but rather the stably employed poor whose highest priority is no longer a job but a decent place to build a house."(3)

It is not at all clear that Dandora has served even the stably employed poor. Certainly this group of people, making up the lower middle income quintile, cannot afford to own a plot in Dandora without substantial outside financial assistance. Even renting a room in the project is beyond their means (refer to Figure 5.1). An important question to ask is Can the sites and services strategy be modified to bring future schemes within the range of that fraction of the lower middle-income group of Kenya's urban population who desire homeownership?

Successful modifications to the sites and services strategy as

exemplified by Dandora would require reductions of 50 to 90% in the prices observed at Dandora. How might such price reductions be achieved? As outlined in Chapter 6, changes in emphasis in project design require trading off one desirable objective for another. It is thus difficult to provide a definitive answer to the question. However, the following suggestions must form the basis for achieving lower prices.

First, it is necessary to extend the range of available services to include those at the low end of the scale. In particular it is necessary to offer means of water supply and sewage disposal which do not require connections to individual plots. This implies a greater proportion of plots without relatively expensive core units. If water-borne sanitation is required, such services could be provided at locations central to clusters of plots but where each allottee retains control over his facility. A broader range of standards also requires permitting and encouraging the construction of dwellings out of mud-and-wattle, timber, stabilized soil block and other materials which have lower capital costs than dressed stone or concrete block. City Council approval of house plans should be waived where dwellings are built out of traditional materials and where no construction loans are used. It is possible to build roads and footpaths to less than "fully-adoptive" standards but with provision for later upgrading.

Second, it is necessary to introduce more progressive repayment systems. This can be done by permitting smaller down payments, longer repayment periods, longer intervals between payments, and graduated increments in monthly payments which match the increases or decreases in an allottee's income over time. The added measure of progressivity must be more than large enough to offset the effect of increasing long-

term loans for building materials and labor. The small element of self-help labor observed in Dandora requires that in future, construction loans be increased to include a sum for hired labor. The allocation of plots to groups would also facilitate repayment by permitting families with temporary cash shortages to be covered by families with temporary cash surpluses. Group allocations might also reduce the propensity for low-income plots to be sold on the open market on the assumption that it would take a unanimous decision by the group to sell.

Thirdly, attempts should be made to generate greater cross-subsidies within projects as well as between projects. This can be done through the market sale of residential and commercial plots, and demonstration houses, and also through marking up monthly plot costs to middle-income allottees. Creation of cross-subsidies in this manner does not require that a mix of income groups actually occupy a site. Rather it induces an economic mix of plot ownership. Thus market sales can create cross-subsidies but they do not necessarily contribute to socio-economic integration of the urban population. Cross-subsidies generated by profit margins incorporated in monthly amortization payments for some plots would seem to have greater potential for creating economic mix within a project. However, this is true only to the extent that the project meets other requirements deemed necessary by the better-off residents: high environmental standards, availability of community facilities, etc. Similarly, higher monthly payments by the better-off plot owner could induce him to seek more tenants with resultant overcrowding.

To the extent that the urban poor define their priority need to be

increased income and to the extent that they will be allocated serviced plots, sites and services will continue, willy nilly, to provide one source for this income, through the market sale of plots. If reduced prices mean that plots can be allocated to poorer people, this may lead to increased plot transfers with commensurate income redistribution effects. It also implies an increase in the concentration of urban land ownership amongst the rich.

The question of what to do to increase the low-income groups' willingness to pay for serviced sites is filled with serious normative implications. The answer lies in addressing the needs of the urban poor which take priority over housing, and not in attempts to re-order these priorities by legislation or indoctrination. For example, attempts to regulate the re-sale of plots by restrictive covenants in the lease agreements are tantamount to legislating higher priority for housing in the family's list of felt needs. Such attempts are doomed to failure.

As mentioned in Chapter 3, the desire for improved housing occurred ninth in a list of felt needs elicited from Nairobi's squatters. Items which took precedence over improved housing included food, school fees, clothes, money to buy land in rural areas, money to send to relatives, and money to expand a business. The multi-sectoral approach to community development attempted in Dandora was designed to cater for many of these non-housing needs through the creation of employment in a setting which also provided the necessary social services and appropriate dwelling environments. The project has demonstrated, however, that methods for providing employment and non-housing services are not as well developed as those for supplying dwellings. Furthermore, Dandora has shown once again that the country's housing delivery system has a

bias in favor of producing new units for the middle-income, even when it has a clear mandate to cater for the needs of the low-income.

Significantly, Nairobi's squatters attached greater priority to obtaining money to expand their existing shelter than they did to obtaining a better house or room to live in. More significantly still, they placed the need to maintain the current standard of shelter at the existing location as a priority second only to the need for food. This suggests that strategies which consolidate or marginally improve existing dwelling environments would meet with better acceptance by the very low-income than providing new accommodations at higher standards. The indicated strategy is therefore one of settlement upgrading.

The improvement of existing low-income residential areas is undertaken through the provision of infrastructure services and financial, technical, and community development assistance of the kind supplied by sites and services schemes. Where upgrading is done to serve the existing residents it offers a number of benefits over the servicing of new sites, besides making a better match with user priorities.

Superimposing a network of public services on an existing unserved settlement can confer benefits to all residents, even those who do not improve their dwellings. Upgrading effectively captures the investments already made in the dwelling environment, including the efforts of self-help labor. This implies that the sponsor's investment in the project can be lower than is required for the servicing of new sites where self-help labor represents no more than 8-10% of the total equity. The most important advantage that upgrading has over new plots is the possibility of adopting lower and hence more affordable standards of services. The configuration of many existing settlements may

limit the provision of water and sanitation to central locations. Upgrading requires the tacit approval of existing dwellings which are of a standard which would be politically unacceptable under other more conventional programs. For all these reasons programs to improve existing settlements come closer to serving the needs of the very low-income. However, upgrading does have its disadvantages. As with sites and services, there can be a tendency for the middle-income groups to displace the original population, as land values rise as a result of the improvements. Upgrading does not, of its own, relieve the problem of unemployment. It does not create net additions to the housing stock, nor does it have much potential for cost recovery much less for generating cross-subsidies. Problems with regulating land tenure and public acquisition of land can create delays in implementation no less serious than those incurred in the servicing of new sites.

Clearly what is suggested is that strategies for upgrading and providing new sites must be combined in ways which compensate for their respective weaknesses. In particular, the surplus funds generated by the market sale and leasing of new plots should be used to finance the improvement of existing sites. That is, future programs should require lower-middle-income plots to cross-subsidize the upgrading of low-income plots. Where upgrading requires the demolition of housing to make way for public roads and services, the displaced families should be offered accommodation on a newly serviced site, preferably within the existing settlement. From a programming point of view, it is recommended that wherever there exists a shortage of government finance for housing, upgrading should take priority over newly serviced sites and the latter should only be included to the extent that they provide cross-subsidies

and accommodation for those displaced from upgraded areas. This recommendation is made in the interest of providing the most benefits to the poorest of the urban poor.

Preliminary indications are that future urbanization projects in Kenya are broadening the range of options to include upgrading on an experimental basis. The "second generation" IBRD project scheduled for implementation in 1978 is intended to upgrade one low-income dwelling for every six serviced sites. Some 3,000 plots are to be developed for market sale and the proceeds are to be used to finance the preparation of additional plots or to provide a cross-subsidy to low-income plots. Moreover, greater attention is to be paid to the provision of non-housing services such as education, health care, recreation, nutrition, family planning and employment generation than was the case in Dandora. These project components reflect the well-placed and continuing concern for meeting the felt needs of Kenya's low-income. However, the failure of similar and less ambitious attempts at Dandora underscores the importance of developing both the political will and the institutional framework required to respond to the needs of the urban poor on their own terms.

Chapter 7 Notes

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Appendix 1: Summary Chronology of Dandora Community
Development Project, 1970-1977

Project Definition

- Nov 1970 NCC establishes the Nairobi Urban Study Group to prepare a metropolitan growth strategy within three years
- Mar 1971 IBRD agrees to review NUS and NCC agrees to prepare a pre-feasibility study for urbanization project for possible IBRD financing
- Feb 1972 GOK resolves to ban sites and services projects from Kenya's urban centers. NCC finishes draft interim urbanization project proposal which is approved by IBRD
- Mar 1972 NCC submits interim project proposal to GOK for approval and onward transmission to IBRD
- Sep 1972 GOK approves interim project proposal and makes official submission to the IBRD
- Nov 1972 IBRD recommends preparation of full feasibility study for urbanization project

Project Preparation

- Nov 1972 Town Clerk forms the Housing Task Force (HTF) to prepare project proposal for submission to IBRD by June 1973
- Jan 1973 Technical Director takes up six month post to lead project preparation effort
- Mar 1973 HTF selects site at Dandora
- Jun 1973 Technical Director leaves post with work incomplete
- Jul 1973 GOK abolishes Graduated Personal Tax, eliminating important source of finance for NCC
- Oct 1973 HTF discusses Draft Project Report with IBRD who want to see more details on standards and procedures
- Mar 1974 IBRD threatens to cancel project if NCC does not resolve all the outstanding issues by June 1974
- May 1974 NCC finishes all-out effort to document missing pieces of project proposal

Project Appraisal

- Jun 1974 IBRD appraisal mission arrives in Nairobi to review physical aspects of the project
- Oct 1974 IBRD mission returns to review the financial and procedural aspects of the project
- Jan 1975 IBRD Loans Committee approves final appraisal report in Washington, D.C. NCC approves content of project, structural plans for Phase I, and designates site as a Grade II By-law zone
- Feb 1975 IBRD, GOK, and NCC commence negotiations
- Apr 1975 Final Appraisal report No.607a-KE published by IBRD
- May 1975 Loan and Credit agreements signed by all parties

Project Implementation

- May 1975 NCC establishes new department to implement project: Dandora Project Department (DPD)
- Jun 1975 DPD finalizes tender documents for Phase I consisting of 1,000 plots
- Jul 1975 Commissioner of Lands hands over Phase I site to DPD
- Oct 1975 Contractor begins preparation of Phase I plots and associated infrastructure. DPD begins design of Phases II and III with assistance of design consultants
- Jan 1976 Construction of Phase I core units begun by sub-contractor using prefabricated concrete panel system
- Mar 1976 DPD approves design of plot application forms and begins soliciting plot applicants
- May 1976 Medical Officer of Health criticizes design standards of Phase I already under construction
- Jun 1976 Applications closed at end of month; nearly 21,000 applications sold, 16,000 returned. Preliminary design of Phase III completed by consultants
- Aug 1976 Verification of applications completed with 9,308 retained as eligible entries. Mayor of Nairobi resigns after elections cancelled by MLG
- Sep 1976 Computerized balloting system selects 6,000 allottees from amongst the eligible applicants

- Oct 1976 DPD sends letters of offer to all allottees; all but 55 accept. Draft tender documents for Phase II sent to IBRD for approval
- Nov 1976 Preparation of Phase I completed, ready for occupancy by allottees. Town Clerk resigns amid growing public displeasure at low level of services rendered by NCC

Project Occupation (Phase I)

- Nov 1976 Allottees take possession of plots but cannot start building approved dwellings because no house designs have been approved by DPD; allottees commence building temporary shelters
- Dec 1976 Medical Officer of Health criticizes design standards of Phases II and III which are similar to those in Phase I
- Jan 1977 NCC "accepts" details plans of Phase I because already built, approves standard house designs, refuse to approve Phase II, III plans, particularly the sewer system. Town Clerk orders demolition of all temporary shelters by March 31, 1977
- Apr 1977 Compromise reached on standards for Phases II and III within NCC. Consultants permitted to resume work
- Jun 1977 MLG orders central government probe of NCC to inspect administrative and financial management
- Oct 1977 NCC begins series of demolitions of squatter settlements in Nairobi contrary to Dandora Project agreement
- Dec 1977 Allottees occupy one half of plots, construction started on three quarters, finished on one third. Tenders for Phase II advertised by DPD. Image of Dandora exceeds expectations
- Mar 1978 Rash of senior officers resign from DPD, including Project Manager and his Deputy

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Appendix 3: Glossary of Abbreviations

DCDPC	Dandora Community Development Project Committee
DPD	Dandora Project Department
GOK	Government of Kenya
GPT	Graduated Personal Tax
HTF	Housing Task Force
IBRD	International Bank for Reconstruction and Development
IDA	International Development Agency
IMF	International Monetary Fund
IRR	Internal Rate of Return
MES	Monitoring and Evaluation Study
MLG	Ministry of Local Government
NCC	Nairobi City Council
NHC	National Housing Corporation
NUSG	Nairobi Urban Study Group