

LAND USE PATTERNS OF KENYAN SMALL TOWNS :  
A CASE STUDY OF MERU AND EMBU TOWNS.

BY

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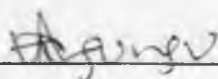
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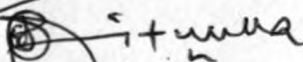
DECLARATION

This thesis is my original work  
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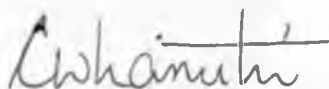


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This thesis has been submitted for  
examination with our approval as  
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D E D I C A T I O N

This thesis is dedicated to  
my parents,

Mr. and Mrs. Ngungu M. Ikenda.

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ABSTRACT

Urbanization in Kenya has been associated with numerous problems such as mass migrations from rural areas to urban areas, lack of proper housing for ever increasing urban population, unemployment, lack of social facilities and pollution. While all the above problems have been given much attention, little attention has been given to the pattern of ensuing land use in these urban areas. This study therefore set out to examine the land use patterns in two small but rapidly growing towns of Embu and Meru in the Eastern Province of Kenya.

Land use patterns in these two towns could not be legitimately defined according to systematic zones because they were characterized by too many cases of land use conflicts. Land uses looked haphazard, especially in the outskirts of the town centres. For instance, the Central Business Districts of the two towns were characterized by mixtures of different land uses, such as commercial versus residential, and commercial versus industrial. In Embu town there was an Asian residential estate at the centre of Central Business area. In Meru the same problem was inherent. In the Central Business area of Meru was a milk processing plant. Similarly, industries in Meru town were growing in the midst of residential areas. The above observations

contradicted the generalized neo-classical models of urban land use patterns, meaning that land use patterns in these towns could not be further explained by these celebrated neo-classical theories.

In conducting the study, first a personal observation survey was carried out in the two towns to examine the existing land uses and appreciate the settlement patterns. Furthermore, four sets of questionnaires were administered, three to plot/land owners of different kinds of land uses and the other to the planning authorities. These helped in coming up with the factors that caused the existing land use patterns in the towns.

From the study, it was found that a coherent and consistent land use pattern could not be defined in these towns. The land use patterns in these two towns could not be defined as resembling any land use patterns explained by the neo-classical theories, but light imprints of some of the theories were traceable.

Existing land use patterns in both towns were found to be a consequence of many factors which included economic, social values, government intervention and policy, political pressure, poor development control, scarcity of public land and private land ownership.





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Nevertheless, any errors or shortcomings of this study, and any misguided interpretations, are entirely my responsibility. None of those who assisted me may be considered party to them.

## CHAPTER ONE

### ECONOMIC FORCES AND LAND USE PATTERNS:

#### A CRITICAL APPROACH

This study is an investigation into the nature of land use patterns in Kenyan small towns and most important, to find out what causes unconventional land-use patterns to be the way they are in Meru and Embu towns.

Land use patterns in many Kenyan small towns cannot be explained by the neo-classical models of city structure. According to these models, economic forces are shown as the major determinants of urban land use patterns. It is believed that even if the interplay of economic factors results in some allocation of urban land between various uses, this allocation is unlikely to be as neat as the concentric zone theory assumes. This is because in real life innumerable variations are discernible in any given city. But even if economic factors have to allocate land as all these theories portray, it means that as soon as one use of land finds itself economically unable to exist in a certain area, for instance, it will straight away move to another area. This is unrealistic. Take the case of an industrial sector where fixed capital can last for as many years and no quick economic fortune can arise to make profitable to move the industry to another location. If such an industry is situated in the city centre it is likely to stay there indefinitely.



History illustrates that urban land use patterns are determined by administrative decisions, legal decisions, political policies and physical environment so that there is practically no city in which the full interplay of economic factors have been allowed. Administrators have also realized that there are certain services which people will frequent in large numbers and so such services are best centrally located in an urban area. This is another reason for contending that land economics and neo-classical theories are an a posteriori explanation of a situation that already exists; the cities are the way they are because first and foremost, someone has decided, even regardless of land economics, that they should be that way, and not because of economic factors. Economic factors have an influence but not always a primary one.

On the other hand, land use patterns in African cities should be equated to those of the western or developed world because their urbanisation process was different. Whereas western cities evolved as a result of industrialization, African cities are a product that resulted from exploitation of their hinterlands and sparked off as administrative centres and soon thereafter as service towns serving their agricultural hinterlands.

Towns occupy so dominating a position in the human consciousness that it is very difficult to get them into

a clear mental picture. For most people, they have been the background of life from the earliest years, not more to be questioned than the fundamental facts of nature. The way of life they impose with its complex blend of blessings and pains is taken for granted. Thus, it is not surprising that among towns people an attitude prevails of acceptance of towns more or less as they are.<sup>1</sup>

Osborn says that even the spectacular physical changes that occur in towns tend to be looked on as dictated by mysterious and implacable laws of evolution rather than as resulting from actions governed by human wills.

Impulses to complain of town management and to demand that something be done do occasionally arise concerning municipal services and movable or superficial features, but fabric of towns, their buildings arrangement and street patterns is commonly taken as somehow fate given.<sup>2</sup>

There can be no doubt of the significance of land use. On the one hand, we all require land on which to live, on the other, the use of one given parcel of land affects not only those who reside there or have use of that land for whatever purpose but also those who live on or have use of adjacent and surrounding areas.

At all levels interaction occurs between every day behaviour and future land use patterns, existing land use patterns in part determine where people live, where they work and how and when they travel there, where they shop,

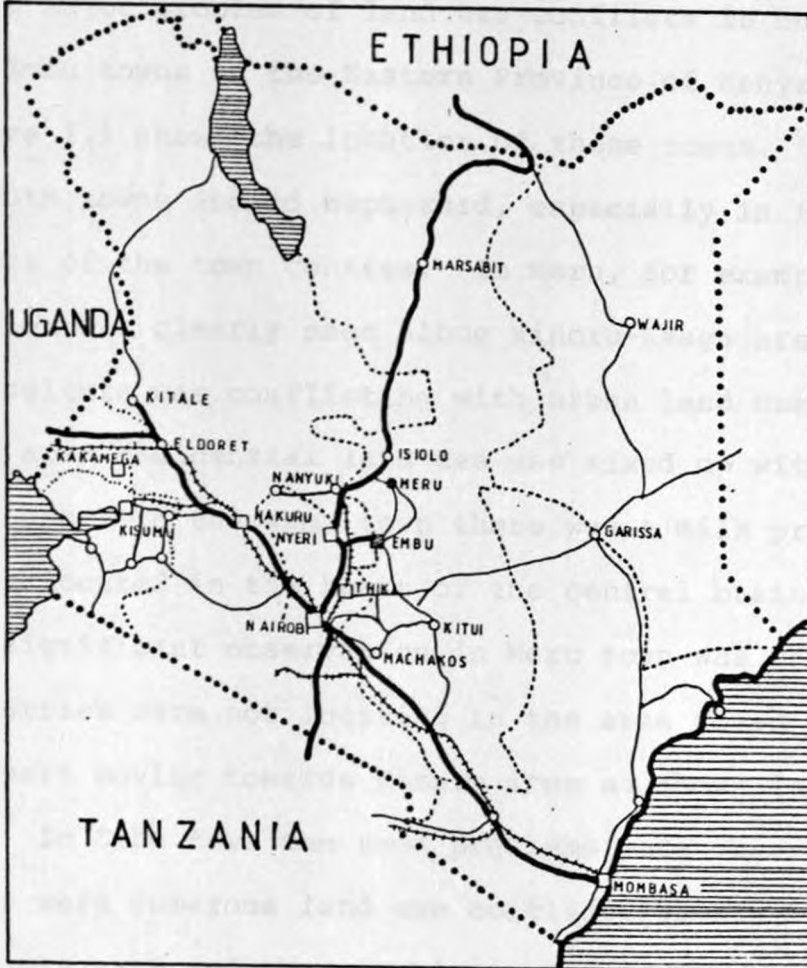
and where they pray. Such behaviour in turn helps to shape future land use patterns.<sup>3</sup>

In addition to and also because of such practical considerations, the past, present and future arrangements and juxtapositions of land use have occupied academics drawn from a number of disciplines and involving agriculturalists, economists, geographers, planners and sociologists for many years. Initially, agricultural land use was the main focus of attention. Both Ricardo and von Thunen were concerned mainly with questions of rent and location in the context of agricultural land use. While agricultural land use remains a vital issue in a large part of the contemporary world, the increased importance of urbanization and growth of urban areas from the 19th century to the present day have led to an increased study of patterns and extent of urban land use. The growing crisis in many western cities in the later 1960s and early 1970s which were expressed partly in mass protests against living conditions provide further compelling reasons for focussing upon the determinants of urban land use patterns.<sup>4</sup>

For both practical and academic purposes, information concerning a variety of aspects about land other than its use is needed in order to understand why past, present and future land use patterns are as they are.

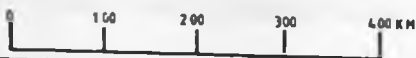
FIGURE 1.1

LOCATION OF EMBU AND MERU TOWNS



- ▣ PRINCIPAL TOWNS
- OTHER TOWNS
- INTERNATIONAL TRUNK ROADS
- OTHER MAJOR ROADS
- ⋯ RAILROADS
- ⋯ NATIONAL BOUNDARY
- ⋯ PROVINCIAL BOUNDARY

SCALE 1 : 6,000,000



Source: Department of Urban & Regional Planning,  
University of Nairobi.

### Problem Statement

This study was prompted after observing that there was a major problem of land use conflicts in both Meru and Embu towns in the Eastern Province of Kenya. Figure 1.1 shows the location of these towns. Land use in both towns looked haphazard, especially in the outskirts of the town centres. In Meru, for example, this problem was clearly seen along Kinoru-Kaaga area where agriculture was conflicting with urban land use. In the same area residential land use was mixed up with industrial land use. In the same town there was a milk processing plant located in the heart of the central business area. One significant observation in Meru town was that industries were not locating in the area zoned industrial, but were moving towards Kinoru area as shown in Figure 1.5. In Embu town the same problems were observed. There were numerous land use conflicts within the central business area and the outskirts of the town centre residential land use was in conflict with light industries. An area zoned industrial had been developed for a school. The Kenya Power and Lighting Company's Depot and the Kenya Posts and Telecommunications engineering workshop were in the middle of residential houses. It was also noted that the tinsmithing workshops were very close to the market thus producing a lot of noise and pollution to the market users. Apart from land use conflicts, both towns portrayed a ribbon type of development along main transport routes.

The above observations of land use patterns were contrary to the generalised neo-classical models of urban land use patterns. It was generally accepted that there were three classical models of land use that could be used for generalizing land use patterns to be expected in any urban area. These models showed that economic factors influenced the spatial distribution of land uses in the urban areas of the western world. Consequently, most urban areas were regarded to develop similar structures to one another.

On the contrary, in most cities it was found that the pattern of land use could be created by factors, other than economic forces. As Richardson<sup>5</sup> pointed out, in real life all the assumptions underlying land use models may not apply. Empirical evidence in East Africa suggested that urban areas could have varied shapes and different land use patterns. He further observed that individual land use patterns in any urban area could also be complex due to physical and socio-economic variables dominant in the region in which the urban area was located. He added that these models represented ideal patterns in that they limited, if not ruled out, the intervention of city planners and also ignored inter-city differences in the composition of activities, topographical irregularities, constraints imposed by irregularly developed transportation networks, a fact

that partly obscured their credibility.<sup>6</sup> This led to a conclusion that each urban area had its own unique shape and land use pattern, despite the fact that the characteristic land use pattern in each urban area may have been seen to conform with some elements of each of the three classical models of urban structure.

According to Hoover,<sup>7</sup> each of these

--- throws into relief some recognizable features of urban growth patterns though none provided by itself a really good likeness.

The cause of variations in urban land use patterns were examined through empirical analysis in most parts of the world. Lean and Goodall<sup>8</sup> outlined typical causes of variations in urban land use patterns as:

relief, climate, subsoil, water bodies, legal considerations invoked by individual governments and the price mechanism.

The most obvious cause of these differences in land use patterns of most urban areas was their differing physical environment. For example, the area whereon each urban area was located was obviously different for the simple reason that no parts on the face of the earth were exactly the same. Some urban areas were located on hill tops like Meru and Muranga towns, others on sloping grounds like Embu town.

Topography had the effect of disturbing the land use pattern because of its impact on accessibility and accordingly, cities tended to develop along the direction of cheapest accessibility because land in these directions was acquired first and was on demand before land on difficult terrain. Intensive use of land resulted in the ridge whereon the city was founded and tended to sprout in the longitudinal direction of the ridge before any significant growth could take place along river valleys on adjacent ridges.<sup>9</sup> This kind of growth was evident in the two towns of Meru and Embu.

Other factors that caused variations of land use patterns in different towns included government intervention such as policy, legal aspects, planning and zoning regulations and public interests.

#### Hypothesis

Land use patterns in Kenyan small towns could be explained by factors other than those in the celebrated neo-classical theories. These factors include, among others, government policy, social factors, planning and zoning regulations, legal aspects, accessibility and physical environment.



### Study Objectives

The main objectives of the study were:-

- (i) To study the land use patterns existing in Meru and Embu towns and find out to what extent they adhered to the generalized neo-classical theories of urban land use patterns.
- (ii) To examine the factors that determined the pattern of land use in these two study towns with a view to establish which of the factors had the greatest effect on the land use patterns.

### Research Methodology

The study derived its information from both primary and secondary data and the following methods of data collection were used.

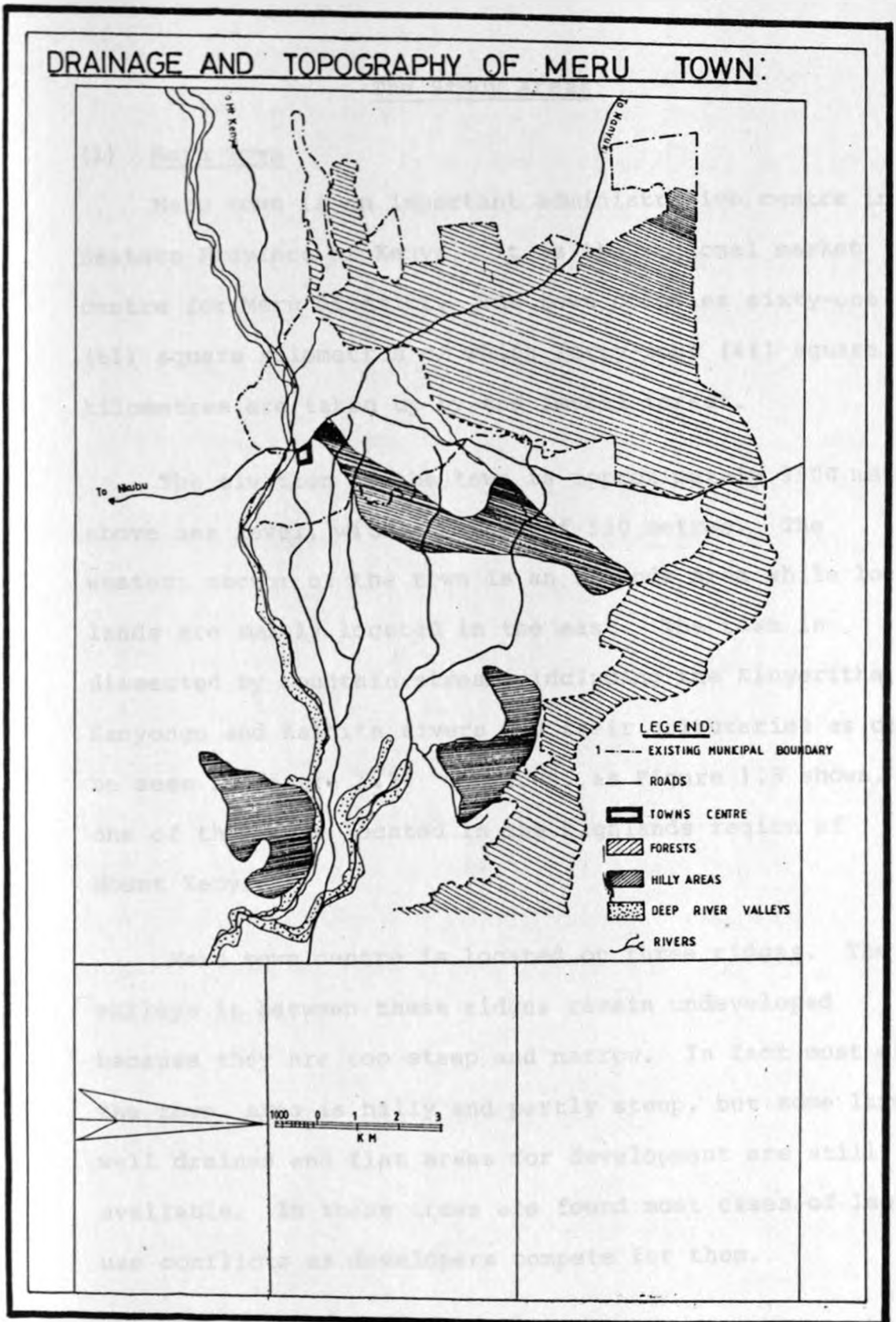
Data on existing land use patterns was collected through personal observation. This was correlated with existing maps and structural plans to give a clearer picture of existing land use patterns. This field observation helped to scan the environment, appreciate settlement patterns, landscape features and general transport network.

Four sets of questionnaires were used to collect data on the factors that have determined land use patterns in the two towns. Three sets of questionnaires were on

different land uses, that is, the residential, commercial and industrial. These were administered to the land users, strictly to land or plot owners. Initially, 30 plot owners were the target in each type of land use, but due to problems of getting the plot owners, the actual number of respondents staggered to less than 30. The fourth set of questionnaires was administered to Town Planning authorities. These included the District Physical Planner and his assistants, the Mayor, the Town Clerk and the Town's engineer, in the case of Meru. In Embu town, the Provincial Physical Planner, the District Physical Planner, the Town Clerk and the District Land Surveyor were among those interviewed. Other personalities who were interviewed included District Lands Officers, land valuers both private and public. These gave valuable information on compulsory acquisition, land values and land subdivision practices.

Written records on the growth and development of the towns were also examined. The County Council Minutes, the Town Planning Works and Housing Committee Minutes were very important documents which helped in getting more information on practices which adversely affected land use patterns of these towns.

FIGURE 1.2



Source: Department of Physical Planning, Meru.

### The Study Areas

#### (i) Meru Town

Meru town is an important administrative centre in Eastern Province of Kenya. It is the regional market centre for Meru District. The town occupies sixty-one (61) square kilometres of which forty-four (44) square kilometres are taken up by the Imenti forest.

The elevation of the town is approximately 1500 metres above sea level, with a relief of 550 metres. The western sector of the town is an uplands area while lowlands are mainly located in the east. The town is dissected by mountain streams including the Kinyeritha, Kanyongo and Kathita rivers and their tributaries as can be seen in figure 1.2. The town, as Figure 1.3 shows, is one of the towns located in the highlands region of Mount Kenya.

Meru town centre is located on three ridges. The valleys in between these ridges remain undeveloped because they are too steep and narrow. In fact most of the town area is hilly and partly steep, but some large well drained and flat areas for development are still available. In these areas are found most cases of land use conflicts as developers compete for them.

Being an administrative and market centre for the surrounding districts, Meru town contains a large variety

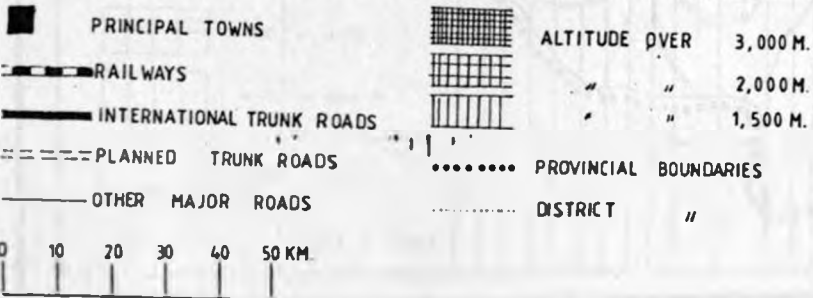
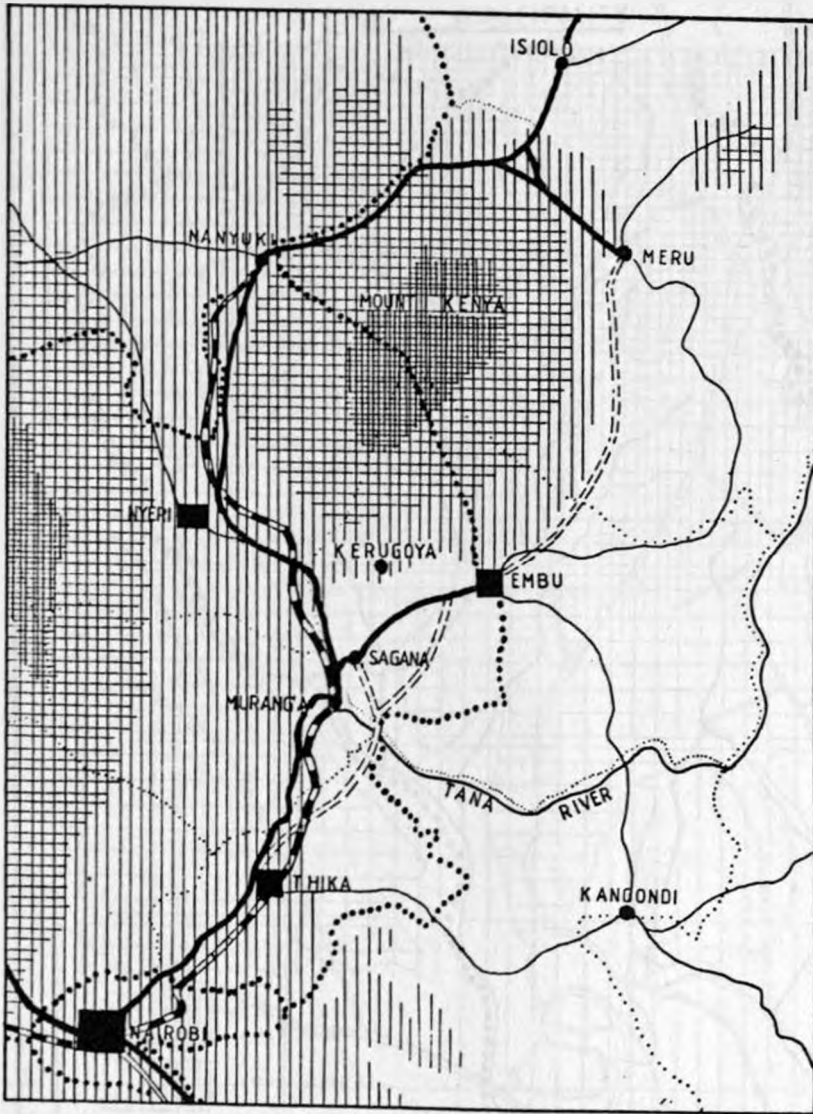
of institutions, commercial enterprises and administrative buildings. Moreover, it houses various light industries such as coffee processing, sawmills and automotive establishments. All the functions are laid out in a mix-up of land uses, which are not clearly concentric, probably due to the rugged topographic conditions.

On the other hand, privately owned land was annexed to the municipality after the extension of the boundaries and the council has had subsequent problems in controlling development of these areas.

On the other hand, history showed that physical planning that was introduced in the town during the colonial administration has been overtaken by events therefore resulting in cases of uncontrolled land use. However, the town's Physical Planning Department had just finalised on a long term physical development plan which had been approved, thus giving some hope on proper land use practices.

FIGURE 1.3

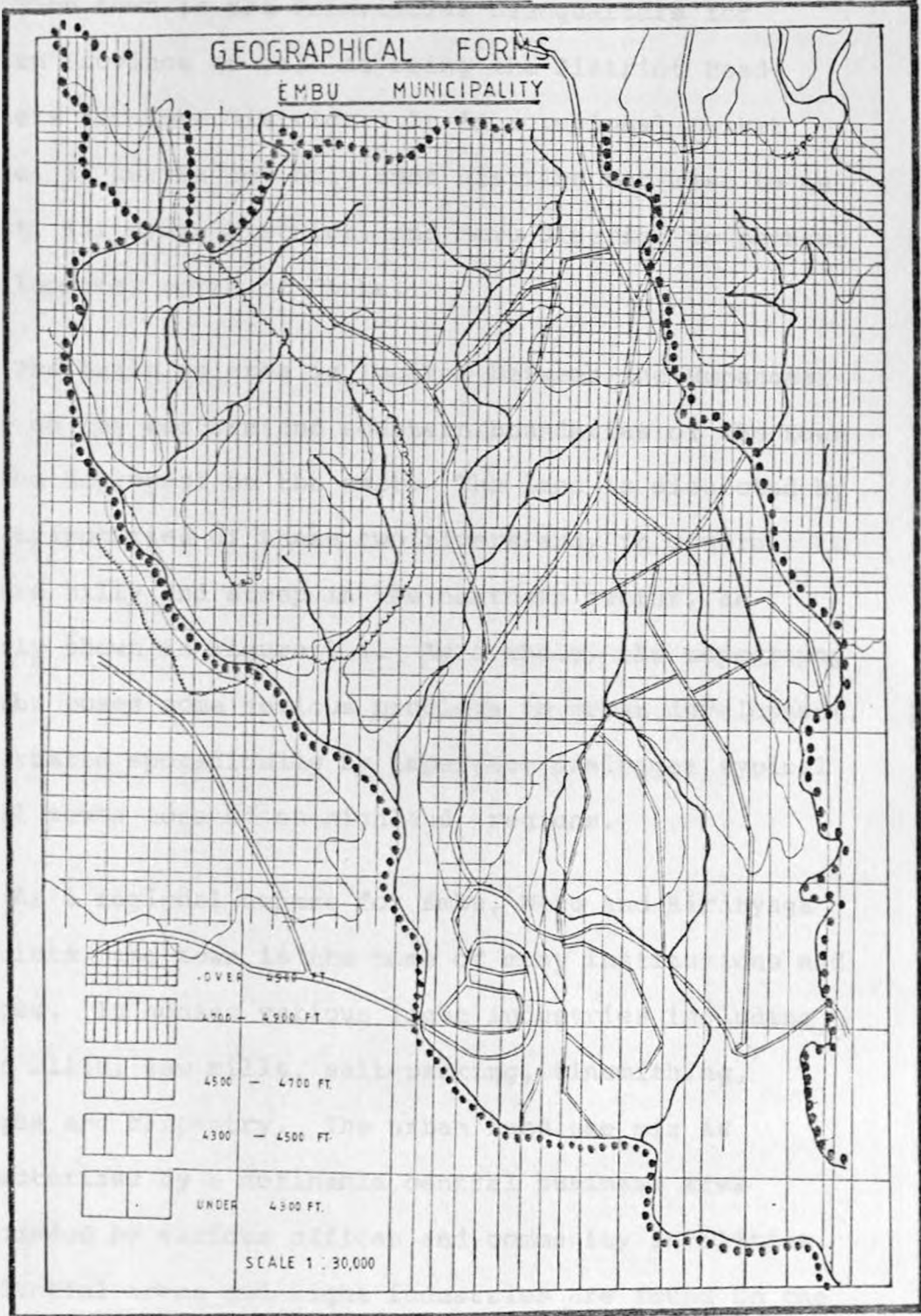
### THE HIGHLANDS REGION AROUND MOUNT KENYA



Source: Department of Physical Planning, Meru.



FIGURE 1.4



Source: Department of Physical Planning, Embu.

(ii) Embu Town

Embu town is the Provincial Headquarters for Eastern Province as well as being the District Headquarters for Embu District. It is a regional market centre, it serves not only Embu District but also to an extent, Kirinyaga District, and Meru District to perhaps 15 kilometres north of Chuka.

The built up area is located between the Rupangazi River on the western and southern boundaries of the town and the Kapingazi on the east. The land is dissected by many tributaries of these two rivers and, in general, it is more hilly and steep in the northern sector, as clearly shown in Figure 1.4. As a whole, the topography of Embu poses some serious problems to urban development, exacerbated sporadically by imperfect drainage; typical of all towns located on highland regions.

As a regional centre for Embu, Meru and Kirinyaga Districts, the town is the home of many institutions and offices. It houses various light industries including flour mills, saw mills, salt-packing, tinsmithing, garages and carpentry. The urban land use mix is characterized by a definable central business area surrounded by various offices and community facilities. Residential areas and light industries are found on the elevated land between the river valleys and ravines.



It was not clear when physical planning was introduced in the town, but from the history of the town, it was mentioned that planning was introduced in the early part of this century, when the white man settled in the town. It should be noted that the colonialists had not planned for the existing population, rather he had planned for a very small size of population, and therefore this can be seen as one of the reasons why the town's land uses look haphazardly planned. Since that physical plan introduced by the colonial administration, there has been no approved physical plan for the town, hence numerous cases of unplanned land use resulting in conflicts.

#### Justification of Choice of Study Area

Meru and Embu towns are both located in the Eastern Province of Kenya. They are about 100 kilometres apart. It was found important to study land use patterns of these two towns for comparison purposes. It was observed that both towns portrayed similar aspects in location because both were located on sloping ground and also both portrayed ribbon type of development. This necessitated the study in order to compare the two in details and find out what caused their land use patterns to be the way they were. The study of the two towns would also answer the question as to whether it is possible that there is an explanation that could be identified to account for the unique urban development pattern of at

least two small townships in Kenya which contradicts all neo-classical theories and other existing literature on the subject. It was also important to study the two towns so as to come up with a more comprehensive and convincing conclusion that there are other factors that affected land use patterns in small urban areas other than the common economic factors. It was also felt that the study of the two towns would give a more representative picture of other small towns in Kenya.

#### Definitions

##### (i) Urban Place

An urban place was defined functionally by Taylor<sup>5</sup> as a centre with resident population ranging from 800 - 5,000 as per 1969 Kenya population census. These were centres providing services in at least four of the following functional areas:-

- Administration and protection
- Communication and protection
- Commerce and industry
- Social sciences and political power.

For purposes of this study, the above definition will be adopted to apply to small towns of Kenya and the study towns.

(ii) Urban Land Use

This is a term used in at least three ways in contemporary planning literature. In some of the writing it means the spatial distribution of city functions, its residential areas, its industrial, commercial and retail business districts; and the spaces set aside for institutional leisure time functions. In some of the literature it means a two part framework for visualising urban areas; first in terms of activity pattern of people in the urban setting and their institutions as they require space and, secondly, in terms of physical facilities or improvements to the land in urban setting which are made to accommodate the activity function patterns identified above.<sup>6</sup> In addition, attention is also devoted to the role that value systems of people play as they regulate space using activities and the use patterns that emerge. In this study both definitions have been applied.

Organization of Thesis

Chapter one has been devoted to the introductory aspects of the study. It has dwelt on the problem statement, hypothesis, study objectives, research methodology, justification of study, definitions and a brief introduction to the study area.

In chapter two the conceptual framework of factors that affect land use patterns has been discussed.

The field study of two towns, Meru and Embu, is discussed in chapters three and four respectively.

Chapter five consists of conclusions and recommendations.

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## CHAPTER TWO

### PART ONE

#### FACTORS THAT DETERMINE URBAN LAND USE PATTERNS

##### Theoretical Background

The nature of land use patterns attracted many scholars. Many studies were carried out to find out what caused urban land uses to be located where they were; and whether there was a pattern of locational relationship between various land uses.

The earliest attempts at a systematic theoretical explanation of land use came out of the works of Burgess, Hoyt, Mackenzie, Firey, Ullman and Harries.<sup>1</sup> Burgess was concerned with the very general tendencies in the patterning of land uses and the growth of a metropolitan area. In the work of Hoyt, land use was explained in terms of the economic behaviour of land users or their agents in the market place. In Mackenzie's work on national dominance and in Harris and Ullman's conceptualization of the more localized setting, the emphasis shifted to multiple centres of activity. In Firey's works, land use arrangements were interpreted in terms of values and attitudes by city residents and the resultant actions in the selection of locations to satisfy these values and attitudes. Both in Burgess concentric zones concept and Hoyts sector theory heavy emphasis was placed on economic determinism of land use, with the implication that human value systems and group action were self-regulating and contained by dominant economic forces.

The theoretical argument does not apply in many African towns, because other than economic forces, there are many vectors that played an important part in shaping urban land use patterns. Economic forces are just one of the many factors that combine to cause urban land use patterns. Various factors that affect land use patterns in urban areas were stated in the hypothesis. These will be discussed in detail in the following section of the chapter. They include economic factors, social factors, Government intervention, physical environment accessibility and ecological factors.

(a) Economic Factors

Most of the early writers of urban land use attributed urban land use patterns to economic forces. Studies<sup>2</sup> in American and western cities revealed that the land use relationship in urban areas tended to be similar in all cities. Cities tended to exhibit structures that were somewhat identical in that they were divided into zones of similar economic activities. The relationship of economic activities and its spatial distribution usually took the form of easily distinguished areas having common functions depending on their distance from the city centre.

Garner<sup>3</sup> provided a clear simple and non-mathematical summary of the main points of the reformulated statement of the relationship between land value, rent and land use patterns. For each type of activity a location had utility which was measured by willingness to pay rent for use of that location. Activities bided competitively in the land market for use of different locations. He argued rightly that in the long run this competitive allocation process resulted in a tendency for the overall land use patterns to adjust so that each was occupied by the activity which could pay the highest rent. This yielded an ordered pattern of land use in which all activities were optimally located. Consequently, those activities that derived greatest benefits were able to outbid those which derived less benefits. Whereas the argument on competition is true, that of a resulting orderly arrangement may not be true, especially in smaller urban centres.

Goodall<sup>4</sup> viewed the problem in the same way. He argued that due to competition for site by the various activities, in the long run an activity tended to locate where it enjoyed the greatest relative advantage in which case land was used for the highest and best use. He, however, rightly noted that this method of allocation did not consider the land use in the neighbourhood. As a result, conflicts arose in the form of nuisance or



encroachment which generated externality and defeated the very objective of land use.

According to Lean and Goodall<sup>5</sup> urbanization was essentially an economic phenomenon and, therefore, it was only logical to expect that the internal organization of urban areas had evolved as a mechanism to facilitate the functioning of economic activities. They gave a wrong view that within an urban area a rational pattern of land uses evolved and this same basic tendency was exhibited in all cities irrespective of their size, origin or geographic location. As will be discussed in detail later, all cities cannot have the same kind of arrangement of activities due to other different forces that surround that particular city or town.

Kingoriah<sup>6</sup> similarly noted that in Kenya, urban land uses were theoretically arranged in some form around the centre of each city and that the cause of such an arrangement was mainly economic forces that tended to allocate each parcel of land to the highest and best use over time. He added that spatial arrangement of cities within each central place depended largely on economic forces and on the aggregate social tastes and preferences of each urban community as reflected through the local government actions and legislations in each urban government. He further observed that a systematic<sup>7</sup> relationship existed between the location of retail shops, consumer service units and spatial distribution of

residences; a tendency for the structure of land values themselves largely a result of competitive forces to mould the pattern of urban land use and influence spatial distribution of land uses within the city considerably. Kingoriah<sup>8</sup> appropriately argued that economic reasons in the periphery, coupled with speculation, caused land values in the peripheral areas to increase. In such cases, there was encroachment on agricultural land which was no longer profitable to urban land use such as residential or other urban activities.

In his study of changing land use patterns and land values in suburban Nairobi, Yahya<sup>9</sup> observed that there was evidence that the city growth and the attendant demand for developable land was posing a threat to peripheral agriculture with the result that it had to be highly productive in order to compete with urban land uses and at the same time take advantage of the urban market. He further observed that coffee farms around Nairobi were being abandoned to the subdividers and the developers, the marine life in Nakuru was being undermined by sewage and agricultural pesticide and urban development at the coast was turning long stretches of hitherto unspoilt and unique beach front into urban real estate. One can quote other examples in the smaller towns where population growth, economic expansion and rising land values were forcing the invasion and

development of prime amenity areas which could not conceivably be replaced in the future.

However, economic explanations of urban land use pattern begin with forces extending far beyond the immediate environs of any particular urban centre of interest. It also involves considerations of the structure and functioning of the urban economy as it fits into the larger economy of the region and the nation as a whole. Both regional and localized sources interact to shape the urban land use pattern. Johnstone,<sup>10</sup> more specifically put that external forces affecting the make up and the vitality of the economy acted upon internally focused processes of the urban land market to determine the location of urban functions on the land.

(b) Social Factors

(i) Social Values

On social values Firey<sup>11</sup> did a study in Boston involving an empirical investigation and development of a theoretical framework to identify the role of values in evolution of land use patterns. Disturbed by what he considered to be a general acceptance of a 'rationalistic' approach to the explanation of land use with strong explicit and implicit emphasis on a self-regulating economic forces that distributed people and uses in the urban area, he studied sections of Boston to determine

how social values and ideals functioned with respect to past and existing land use patterns. In his study he observed that the rationalists readily acknowledged the reality and effectiveness and social values in spatial adaptation, but they made no attempt to incorporate the empirical concession into their theoretical system ---. All factual departures from the kind of spatial order called for by the theory were lumped together into a loose category of limiting or complicating factors. This category embraced customs, moral attitudes, taboos, political and administrative measures, cultural biases, traditional patterns and the like. All these were supposed to limit or complicate the natural competitive process but were not regarded as ultimate causative factors. Firey, after studying locational trends in Boston's Beacon Hill, concluded that space may not only be a productive agent but also a symbol, and that people and groups chose locations not only in relation to market considerations but also in response to social values. He identified three kinds of influences which values exerted on land use. These he termed the retentive, the recuperative and the resistive. On the basis of his tests, he concluded that values were indeed self-sufficient ecological forces and that they had a very real causative influence upon land use. He further found out that residence to the northern end of Boston was a symbol of social solidarity and that of identifi-

cation with Italian groups and Italian values. Those persons who identified themselves with Italian patterns tended to remain in the north end in spite of the deteriorated congested conditions which prevailed there. Apparently the effect which prevailed upon one's kind outweighed awareness of the slums undesirability as a place in which to live. Social values had thus an influence on land use which was not at all limited to areas with congenial physical and architectural characteristic.

In towns of Africa, social considerations may be strongly manifest in land use patterns. The major problem in articulating this is the fact that land use patterns in many areas are determined on administrative/political considerations.

(ii) Religion and Culture

Religion and culture was also believed to play an important part in the shaping of urban land use patterns. Kingoriah<sup>12</sup> observed that Mombasa's zigzag and irregular streets were not unlike those of many ancient cities where Islamic culture was predominant. This pattern was also prevalent in other ancient East African cities that had been heavily impacted by Islamic culture. He also noted that Kampala in Uganda developed as a result of opposing religious factors that were introduced during early colonial penetration times.

(iii) Population

Ratcliff<sup>13</sup> whose major theoretical orientation in urban land use was mainly based on the interplay of market forces also recognized that economic activities served its population. These activities he noted were profoundly influenced by the nature of that population and that population trends therefore influenced future land use in urban areas in various ways and degrees.

In small Kenyan towns population growth is the factor behind encroachment on agricultural areas resulting in high land values in the peripheral areas.

(iv) Social Tastes and Preferences

Kingoriah<sup>14</sup> in his study of 'Policy Impacts on Nairobi's Land Use Patterns' found that within Nairobi, and very many urban areas, social tastes and preferences had played a great part in shaping the city structure. These formed the component part of the city's political opinion and in most cases were the chief determinants of the structure of the city. He further noted that social preferences restricted land from changing use to the highest and best use. Examples of these were playing fields, golf courses, common lands of all kinds.<sup>15</sup> He concluded that economic factors were secondary to legal and social factors in the shaping of the structure of Nairobi. Other researchers such as Mabogunje in Lagos,

Akinbaole in Abeokuta, Nigeria, and Firey in his study of Boston had this view.<sup>16</sup> Social tastes and preferences may be causative factors of land use in smaller African towns, but may not be highly considered or felt due to the sizes of these towns.

(c) Ecological Processes

The three ecological processes that offered a means of understanding of the patterning of towns were dominance, gradient and segregation. These processes were used to describe change in the patterning. Dominance was used in the sense of one area in the city bearing a controlling social or economic position in relation to other areas. Gradient was a term that indicated the receding degrees of dominance from some selected dominant centre to the more distant locations relative to that centre.<sup>17</sup> Segregation was a process related to clustering. According to Erickson,<sup>18</sup> the process of segregation and specialization involved the tendency of like units to concentrate within specific areas. Segregation referred to the sorting out of population into distinctive areas and specialization was a similar process but referred to the sorting out of uses, functions, activities rather than population. He rightly argued that the degree of segregation or specialization achieved in an urban area depended on how long the process had been at work in the area and the degree of controls

that were imposed to achieve these ends.

Erickson further identified other ecological processes such as concentration and dispersion which constituted the initial process of massing and spreading population in urban areas in a region. This process explained the reason of the various urban centres and was to be distinguished from those processes which actually determined the internal organization of the centres. Another process was that of centralization and decentralization which referred to the congregation of people and urban functions in particular points and the reciprocal movement of people and activities to fringe areas or new satellite centres. A common result concentration process was the tendency for higher densities of population and intensities of use to occur in their inner parts of an urban area and the progressive decline towards the periphery.

Invasion and succession processes also identified by Erickson, were both associated with the foregoing sets of processes. Invasion referred to the penetration or encroachment of one population group or use type finally displaced the former. The main consequence of invasion was a break-up of the existing population and the land use mark up of an area. Succession was the culmination of the break up process with the new achieving a complete displacement of the old. Thus urban growth and change



involved not only the outward expansion of settlements but also internal re-organization to acknowledge and accommodate the constant changes which occurred in the socio-economic circumstances of settlements.

Chapin<sup>19</sup> explained that economic factors were constantly interacting with the social determinants which he referred to as socially rooted determinants of land use. He classified these two factors as the ecological and the organizational. He however described the ecological process as the process that described the evolution and development of urban communities in space through the process of aggregation. His analysis was largely based on the work of Erickson and its effects on urban land use.

Whereas these ecological processes may be experienced in large cities, this may not be the case in smaller towns.

(d) Government Decisions and Policy

Some geographers suggested that cities had land use patterns that tended to resemble a series of roughly concentric zones based on land values, with the highest land values for the central business district. By and large most towns showed this without government intervention but the pattern was usually lost after government intervened through policy and zoning means.<sup>20</sup>

In guiding and controlling economic activity the government altered the relative profitability of different land uses as well as determining the economic framework which formed the background to profit making decisions.<sup>21</sup> All government activity affected the patterns of land use in varying degrees. The laws relating to land use directly such as the planning acts were likely to have more effects on land use than say laws referring to the use of labour such as shops acts. Taxation and government tax expenditure was likely to have effects on land use. For instance, if the government taxed a particular type of property and spent money on acquiring land for public use, these were more likely to have a greater effect on land use patterns than say the purchase tax on goods and the giving of pensions.

Lichfield<sup>22</sup> rightly observed that governments were forced to interfere on urban land market because a land market left on its own devices could hardly be expected to produce an arrangement of land use patterns and development which would be socially acceptable.

The United Nations Conference on Human Settlements in 1976,<sup>23</sup> on the same point affirmed that because of its unique nature and crucial role land played in human settlements, it could not be treated as an ordinary asset, controlled by individuals and subject to the pressures and inefficiencies of the market. Instead the pattern of land

use should be determined by the long term interests of the community especially since decisions on location of activity and therefore of specific land uses had a long lasting effect on the pattern and structure of human settlements. Kingoriah, in his study of "Policy Impacts on Nairobi's Land Use Pattern", concluded that policy impacts had played a major role in shaping Nairobi's land use pattern.<sup>24</sup>

(e) Urban Land Use Planning

Until very recently (1966) urban planning in Kenya was understood as defined in the Town Planning Act of 1931<sup>25</sup> which states,

A town planning scheme may be made in accordance with the provision of this ordinance, with respect to any land with the general object of improving and providing for proper development of such land to the best possible advantage and of securing suitable provision for traffic transportation sites for public buildings and disposition of shops, residence and factory areas, proper sanitary conditions, and of making suitable provisions for the use of land for building or other purposes.

Land use plan therefore reflected an analysis of urban activity systems and a carefully studied estimate of future land requirements for expansion and renewal, showing how development in the urban area should proceed in the future to ensure the best possible physical environment of urban living, the most economic use of land and the proper balance in use from a cost-revenue point of view. Fundamentally then, the land use plan embodies

a proposal as to how expansion and renewal should proceed in the future, recognizing local objectives and generally accepted principles of health, safety, convenience of economy and the general amenities of urban living.<sup>26</sup>

The granting of individuals, access to the use of urban land is preceded by the allocation of such land between various uses. This allocation is done in accordance with a plan which thereby determines the urban development pattern. The Planning Act, 1931, requires that a town scheme receive the approval of the Commissioner of Lands before implementation. However, the Act has not been used to design and implement any extensive planning venture in Kenya.

The following statement of Hartford<sup>27</sup> region objectives taken from a study of regional growth alternatives was illustrative of broadly stated land use planning objectives.

- (i) Provide for the orderly growth and development of the region while preserving a measure of diversity among its parts.
- (ii) Allocate land in the region, recognizing that it may become a scarce resource to be conserved rather than wasted.
- (iii) Satisfy the multiple needs of a society with increasing amounts of leisure time in general and

preserve the amenities associated with the region's open character in particular.

- (iv) Maximize the opportunity for a wide range of choice in residential living arrangements in general and serve the varying housing needs of the region's population in particular.
- (v) Help promote sound economic development and assure employment stability of both the region and the state.
- (vi) Minimize conflicts with residential areas and facilitate the provision of required public services, particularly transportation and utilities.

Urban planning in Kenya has not always been understood as defined in the 1931 Act. In fact some people at certain times have contended that urban planning is not necessary and that socio-economic factors automatically interplay to establish an optimum allocation of urban land between various demands.

Another aspect of development control is through zoning. Through zoning governments try to maximize the social welfare by reducing the cut throat competition between entrepreneurs and maximizing adverse external effects of land use into urban dwellers. The humble citizen is affected by this competition and therefore needs government protection. According to Ndwigah,<sup>28</sup>

it was wrong these days to think that land use in town centres was determined by the need to make as much profit by the land owners as possible. She felt that zoning played a major role in determining the emergent land uses in urban centres. Zoning restricted land owners from using their land in any manner they pleased. This worked as far as zoning regulations were strictly observed by both the land owners and the development control authorities. If inadequately observed, it could allow conflicts in land use. On the other hand, zoning practices worked well where an urban centre had abundant public land; otherwise it became difficult to enforce zoning and planning regulations in freehold land.

It suffices here to note that planning in urban centres was racially motivated so that up to this day, racial districts - replaced by income groups are still conspicuous.

(f) Colonial Government's Intervention

Kingoriah,<sup>29</sup> in his study on 'Policy Impacts on Nairobi's Land Use Patterns', noted that in all East African cities the impact of the British colonial administration was evident in land use patterns. This, he noted, was likely to remain that way for a long time to come because the present republican government (especially in Kenya) that came to being with independence

in the early 1960s inherited the British Administration and political structure. It thus adopted similar methods of public administration with slightly different philosophical adaptation to suit the status of national sovereignty.

From the Simpson's Report of 1913<sup>30</sup> the effects of colonial government on land use patterns was clear. The report stated,

In towns where nationality is the same, the town planning resolves itself into arranging for residential, commercial, and manufacturing areas which are further governed in character by rental and class in such a way as to secure convenience, good transit, pleasing amenities and permanent healthness for all. Something more that this is required in towns such as these in East Africa where nationalities are diverse and their customs and habits different from one another. Though the same objects have to be aimed at, it has to be recognized that the mode of life of the Asiatic, except in the highest class, do not consort with those of the European and that on the other hand, many European habits are not acceptable to the Asiatics. Moreover, the customs of the primitive African, unfamiliar with and not adopted to new conditions of town life, will not bond with either. Therefore, in the interests of each community and the healthness of the locality and the country, it is absolutely essential that in every town and trade centre the town plan should provide well defined separate quarters for Europeans, Asiatics and Africans with easy and good communication between them, as well as those divisions which are necessary in a town of one nationality and race.

On the whole, during the colonial times, the growth of the city structure was not influenced by the economic calculus of the "reasonable man" or the "invisible man",

but by a racially-biased allocation mechanism which was often laid long before there was sufficient demand for such land. Often land for various uses was set aside and was filled up later when these uses came into existence. This was evident in big cities like Nairobi, Kenya; Dar es Salaam in Tanzania and Kampala in Uganda. Most central business districts of these East African cities had large vacant plots which were currently being filled up as demand arose. The sectoral land use pattern or other land uses around the central business district of East African towns was, however, not economic. It was the result of deliberate colonial and racialist foundations of land use allocation and land tenure laid down mainly by the British administration in the early part of the 20th century. As Kingoriah<sup>31</sup> put it, economic forces of supply and demand operated only within this rigid framework of land allocation machinery. Highest and best use had only manifested itself within these racially predetermined sectors.

This pattern of land use remained unhampered in Kenya until independence in the early 1960s although it still prevails in some Kenyan towns. Despite independence, Kenya retained the sectoral appearance of towns intact. Instead of racial segregation, the residential areas are now described in accordance with dominant income groups that stayed therein. The low income living and shopping



areas are in places that used to be African and Asian Bazaar areas, while high income areas are those that used to be high class Asian and European Bazaars.

In short, it can be said that land use patterns and city structures of East African towns have been determined by the visible hand of the policy maker rather than the invisible hand of the market forces, that is, the highest and best use mechanism. In this case, apart from the natural forces like geographical nature of urban areas, the policy maker rather than the investor has been the major architect of land use in urban areas. The investor, as Kingoriah<sup>32</sup> says, has merely danced to the tune of the policy maker. It can therefore be said that government's influence on land use must be one of the decisive factors which determine the patterns that emerge.

(g) Physical Environment

Many types of physical handicaps existed in or around urbanised areas. These diverted the direction of land acquisition and urban development in the direction where these handicaps were least or they did not exist. The expected pattern of city structure may then be modified accordingly. These and many distortions on the city structure resulted from the physical environment as it influenced the land users choice on where to locate their land using activity.<sup>33</sup>

Some of these environmental physical features include:- topographical features, climatic factors, the soils and drainage system.

(i) Topographical Features

Lean and Goodall<sup>34</sup> noted that topographical features conditioned the direction in which a city was able to expand as in the case of ports or cities at the junction of mountain ranges. They further noted that within a particular city the choice of an ideal physical site for building was rarely practicable, certain sites were avoided because of some developmental handicap relative to the state of building technology, for example, excessive slope of liability to flood, and on other sites because of subsoil conditions heavy buildings required pile foundations or raft foundation. Topography as Kingoriah<sup>35</sup> affirmed, had the effect of disturbing the land use pattern because of its impact on accessibility hence on demand for land. It was easier to travel across the plain, for example, than across a succession of river valleys. Under these circumstances, cities tended to develop along the direction of cheapest accessibility because land was acquired in that direction first.

The geology of the soil and underlying strata also influenced choice of location. This was true because a site that was sloping needed to be levelled in order to put up a building structure. In Nairobi, for example,

some areas had black cotton soils and these soils had to be removed completely before any highrise building was put up for safety and structural stability. All these, as observed by Ndwigah,<sup>36</sup> added extra costs to the site, and they certainly affected choice of those sites.

The location of a particular urban area affected its land use patterns. On this Kingoriah<sup>37</sup> observed that the structure of Mombasa had been constrained by its having nucleated on an island; the spatial restrictions that had developed as the urban area grew. He further observed that land use patterns of urban areas differed due to their locations. Whereas some were located on hill tops like Murang'a and Meru, others were located on plains halfway on the hill sides and halfway on the plain like Nairobi.

(ii) Climatic Factors

Climatic factors also affected the development of land use patterns in an urban area. For example, within Nairobi, the Athi Plains and areas around Jomo Kenyatta Airport were hotter than the highlands on the Kikuyu escarpment towards Limuru and Kiambu. Kingoriah<sup>39</sup> asserted that although policy factors, especially the political interests of the European settlers may have been dominant in the determination of land use over the city, the climatic variation influenced the classes in

power during the formative years of the city's structure; and made them accept a systematic method of residential land use allocation whereby expensive houses of the high income were found on the cool escarpment, while the hotter plains were occupied by the low income housing and industries. He rightly concluded that in most East African cities the micro- and meso-climatic factors in the regions occupied by cities had the effect of influencing past decision makers with respect to where housing of various socio-economic groups would be located. In the highlands the locational dichotomy was between the breezy panoramic hillsides and the hotter valleys or adjacent plains.

Climate therefore had a strong influence in causing the distortion of the land use pattern from the expected dictates of pure models with all their neo-classical simplifying assumptions. This, however, may not be manifested in smaller towns whose area of jurisdiction may be quite small as to have varying climatic conditions.

(h) Accessibility

Accessibility evaluates the net economic costs of moving persons and goods between one place and another. It is therefore not only concerned with the distance to be travelled between two places but with all the factor costs involved in any journey. With the underlying

conditions of supply remaining fixed, the supply of possible sites in an urban areas is a function of existing transport network. With a given transport system movement will be concentrated along particular lines so differentiating between sites in terms of accessibility advantages. Sites adjacent to main transport routes will have a relative advantage over sites located some way from such a route. Lean and Goodall<sup>40</sup> viewed sites located at route intersections as possessing an even greater relative advantage belonged to those sites located at the focus of the urban transport system, that is, the city centre. The accessibility advantage possessed by the city centre was a key factor in urban land use patterns.

On the demand side, accessibility is of similar importance for prospective purchasers may demand accessibility characteristics from their chosen sites. It has been seen that specialization reaches its peak in urban activity and that it depends upon exchange. Exchange necessarily involves contact between factors of production and producers, producers and wholesalers, wholesalers and retailers and consumers and so on. Accessibility sums the ease with which these contacts are made. A business has also to weigh the advantage of easy access to factor inputs.<sup>41</sup>

Guttenburg,<sup>42</sup> in examining the implications of growth for his concept of urban structure, pointed out that

transportation system held the key to the way in which growth proceeded. The transportation decisions made from one year to another resulted in a constantly changing urban structure with the emphasis shifting along the continuum between the situation with highly distributed centres to the situation with one major undistributed facility. Guttenburg maintained that assuming other things were constant, that is economic conditions, terrain, tastes and preferences, accessibility in terms of time served to sort out activities spatially. If the addition assumption was introduced that the transportation system remained similar over time, he pointed out that there would be comparability in accessibility and therefore it may be anticipated that patterns in the distribution of activities in the region would be similar.

Other works that might be cited here include Hansens use of the accessibility concept in the analysis of other use activities. He defined accessibility as a measurement of the spatial distribution of activities about a point adjusted for the ability and desire of people or firms to overcome spatial separation.

On accessibility in U.S.A., E. de Boer<sup>43</sup> observed that increased accessibility was counterweighted by consequent changes in land use. People and institutions were operating on a larger scale because of and dependent on this new access through new infrastructure built to

improve overloaded streets and roads.

A generalized view of what could be expected in most urban areas of the western world was given and it was explained that the dominant factor in determining the spatial distribution of urban land uses was accessibility.<sup>44</sup>

(i) Complimentarity

Complimentarity indicates the inter-dependence of land uses. Complimentarity of persons and activities was seen to be one of the advantages of locating in urban areas and thus once a number of sites in a given area had been developed, this had a strong bearing on the use to which the remaining sites were put. If a particular site was surrounded by houses or offices or any other particular use, this would determine what would be the highest and best use of that site. Complimentarity may also bring about the clustering of like uses. One firm may use the by-product of another as a factor, or firms may perform individual stages in the production of a commodity or require the specialist services of other activities.<sup>45</sup> They have therefore close industrial "backward" or "forward" linkages with one another depending on what type of materials each activity uses from the other.<sup>46</sup> Other activities may nucleate together to obtain urbanization economies, not from one another, but from items of infrastructure that could be expensive for each firm to install by itself.<sup>47</sup>

(j) Other Determinants

Sources of employment, infrastructural layout, location of schools, all play an important role in influencing the sum total of urban residential location decisions. These, according to Kingoriah,<sup>48</sup> acted to distort the patterns as proposed by Alonso, Hoyt and Burgess and gave greater conception insight into the economic variables hypothesized in the models.

Existing development, constrained land from being changed quickly to take advantage of the economic use that comes and promises higher returns than those receivable from existing land use. Existing development therefore acts as a factor determining use of urban land and the resulting land use pattern.

Land ownership is also an important factor determining urban land use pattern. In outlining the basic role of the then Physical Planning Department, it was stated in the 1970-74 Development Plan for Kenya<sup>49</sup> that it was difficult to achieve the task of preventing wasteful encroachment of urban growth on agricultural land where land was held in small parcels especially in the municipalities. In such cases, it was argued, development was on a piecemeal basis and there were no development conditions as was the case with leased government land. The land being in the hands of many owners was developed at the owner's will and they could not be forced to develop it



within a certain period for it would be impossible because of lack of finance. Thus, while one individual may put up a modern building complying with the building code, his neighbour may still continue to cultivate his land with only mud houses. This land use conflict was prevalent in the peri-urban areas. One may, however, argue that since the Commissioner of Lands approves town plans which control the use of all urban land, he in a sense controls the use of freehold urban land and moreover, the change of use of land from agriculture to urban on extension of an urban boundary must receive the approval of the Commissioner of Lands.

The history of the evolution of any town should not be overlooked because it also contributes to the town's land use pattern. This factor will be discussed in the following section of the chapter with specific reference to Kenyan towns.

## PART TWO

### EVOLUTION OF KENYAN URBAN CENTRES

Urban system in Kenya bears heavy prints of colonial penetration and development that is typical of most third world countries. Before the coming of the British people to Kenya, there was a rudimentary urban system of periodic markets scattered all over the settled areas of Kenya, and interconnected by caravan routes.<sup>50</sup> The markets were used for the distribution and marketing of surplus agricultural

and livestock produce through barter trade. They may have assumed commercial, as well as administrative functions such that each place could have combined the barter market functions and those of a meeting place of the councils of elders and other social organizations that maintained law and order along with other societal functions within the traditional communities.<sup>51</sup>

The trading routes linking these trading centres were used by foot and ladden animal caravans which carried the goods of trade and other items. An analysis of Kikuyu local markets by Taylor<sup>52</sup> during these times has revealed this rudimentary spatial system that possessed qualities of considerable degree of organization. Exchange points existed between the three ecological zones on the eastern slopes of Mount Kenya, which is the traditional abode of the Kikuyu, at least three rank orders appear to have emerged:-

- (i) Small markets dealing with trade within an individual ecological zone.
- (ii) Larger markets dealing with exchange between two ecological zones (high Kikuyu, middle Kikuyu and low Kikuyu).
- (iii) The largest of all the markets that dealt with exchange between all the three zones and possibly between the tribal inhabitants and members from adjacent tribes.

Taylor observes that usually the markets had no permanent structures. They were open spaces on flat well drained grassy plains. Despite this lack of any construction these places were central in as much as they performed centrality functions. They were nodal points of some significance as far as the local people were concerned and had social, as well as economic functions. This spatial system has been found to have been typical of many parts of Kenya, among the sedentary, as well as the nomadic people.<sup>53</sup> The urban places were connected by caravan routes along with a considerable volume of trade flows.

The first towns in Kenya were those that were established along the coast by Arab traders. The existence of these towns during the colonial times is said to have given some impetus to considerable spatial organization within their hinterlands. The urban places have been found to have been connected to inland market places by caravan routes along which considerable volume of trade flowed. The spatial system required to effect these trading links has been found to have been of two complimentary types; the internal tribal organization and the long distance caravan routes. The former was the basis for the spatial system within an area occupied by individual tribe, and among all the ecological units spanned by any individual tribe. The latter interconnected the tribal spatial systems; and had ultimate links with the coastal towns.<sup>54</sup>

However, colonial penetration never followed the traditional trade routes but took place by means of a trunk railway line - the Uganda Railway built between 1895 - 1901 to connect the coast with the area around Lake Victoria for political and strategic reasons. Towns like Nairobi, Nakuru, Eldoret, Kitale, Molo, Nanyuki, Nyeri and others are examples of these hinterland urban places or nodes that were established by the European settler on the Kenya highlands.

The colonial economic and power structure maintained the resulting spatial system ruthlessly and consistently and in the 1950s even disrupted the traditional spatial system within the Kikuyu, Embu and Meru tribal areas as a result of the struggle of these tribes against colonial domination that culminated with a declaration and continuation of the Mau Mau state of emergency by the British between 1952 and 1960.

The urban place hierarchy and the spatial system that was inherited by independent Kenya after 1963 was therefore not induced by economic factors like in the neo-classical Losch-Christaller space economies; but a colonial spatial structure that reflected colonial strategy, the spatial distribution of colonial plantation agriculture and the pattern of the colonial extraction transport network in the form of railways, tarmac and murram roads.

However, the restrictions of Africans into towns by the colonial administrators is a point to consider as a cause of land use patterns of today's Kenyan towns. It is natural in an African country that the majority of the urban population should be Africans or that the cities should manifest an African image. However, until recently this was not a foregone conclusion in Kenya, for the cities were of foreign origin and a large proportion of their population was non-African.

Obudho observed that for many years the Africans were regarded as temporary inhabitants of the unskilled labourers. The theory of indirect rule as well as personal inclination of many administrators led to a concentration on the development of rural societies rather than the training of an educated urban elite, and also the view that towns were not suitable for a permanent African society. The towns were regarded rather as a base for administrative and commercial activities.

Kenyan towns were pre-eminently political foci and the main centres of collecting and distributing of import and export goods. The impact of urbanization of the Kenyan African has been very extensive because the towns have been the major generator, communicator, innovator and integrator of modernization process that has transformed most of the rural areas. The Kenyan urban centres in 1948 had a small population base because of the restrictions of the rural-urban migration for Africans. This policy was not lifted until 1963.<sup>57</sup>

Indigenisation is closely linked with the position occupied by urban land in the Africans world view. For the majority of Kenyan African urban living is a new phenomenon and it is accompanied by a profound change in the traditional man land relationship that has been so much a part of tribal culture. The Africans perception of urban land is strongly influenced by rural traditions migled with or modified by white settler pioneer.

There have been and still are naturally propoortinately more Africans in the smaller towns than the larger. The reason for this may be that the larger the city the more attractive it is to Asians and Europeans. Owing to the wider range of services, commercial opportunities and choice of employment opportunities in the profesisonal and skilled categories.<sup>58</sup>

### Summary

From the above literature, it was clear that urban land use pattern was a consequent of many factors. Land use pattern was seen to be a consequence of the economic behaviour of the urbanite in the urban market. Secondly, land use pattern was shown as being influenced by the urbanites behaviour in response to such culturally bound phenomena such as customs, traditions and beliefs. As Kingoriah<sup>59</sup> put it, cities were creations if man, existing from the necessity for suitable location of their activities.

It was therefore difficult to imagine a city whose land use pattern had been automatically shaped without the influence of man. In fact, the highest and best use land user mechanism of neo-classical economies resulted from social interaction. Business activity through exchange and cash economy ultimately determined the order and the nature of community's activities. This order was influenced by the community's need for goods and services and the spatial distribution of these goods and services.

The land use pattern that was economically determined had also a social dimension. The social dimension in East Africa had to do with ethnic interaction and consequent land annexation and exploitation that resulted from colonialism of its peoples and the accompanying urbanization of its peoples.

Government policy and decisions also played an important role in shaping land use patterns in urban areas. Legal aspects such as planning regulations, zoning regulations and other laws relating to land use were some of the mechanisms that governments used to control that emerged. The policy maker, was the major architect of the urban land use patterns especially in Nairobi, Kenya.

Other factors like physical environment, social values, accessibility, religion and culture all were discussed and their influence on land use patterns

explained through works of various researchers.

The literature on urbanization in Kenya brought out a clear point that urbanization in Kenya, and East African cities as a whole, was different from that of western cities and therefore it was wrong to compare land use patterns of Kenyan towns with that of cities in western world. Whereas urban centres in Kenya were a result of colonial administration, those of western cities were a result of industrialization. Kingoriah<sup>60</sup> observed that land use models applied only by way of analogy and nothing in their neat form could be visible on the East African economic landscape. The primary lesson was that they should not be applied for any practical purpose in their raw form without extensive examination of other vectors operating over the socio-economic space in these countries.

The chapter highlighted on the factors affecting urban land use patterns as given through various researches. However, these researches were done mainly on large towns and cities. Moreover, the neo-classical theories were also based on studies done on western world cities. Little or no studies have been done in small urban centres to bring out the nature and causes of their urban land use patterns. It would not be appropriate to explain the nature of land use patterns in small towns using findings from studies done on large towns and cities



because the forces behind land use in these categories of towns could be different. It would also not be right to use the neo-classical theories to explain land use in small towns, especially in Kenya because of the reasons explained earlier.

In the following two chapters, this study focusses attention to the two relatively small towns of Meru and Embu , in the Eastern Province of Kenya, in order to more critically examine the unique forces that have guided their land use patterns.

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## CHAPTER THREE

### MERU TOWN

#### A. Existing Land Use

This part of the chapter concentrated only on giving a brief description of the types of land use activities in Meru Town and their conflicting locations. It was found inappropriate to explain the causes of these land use conflicts here because Part B of this chapter dwelt exhaustively with the factors causing these conflicts and the resulting land use patterns.

#### Introduction to Meru Municipality

Meru Municipality covers an area of sixty-one (61) square kilometres of which forty-four (44) square kilometres is under forest reserve. Only two (2) square kilometres of the municipal area is public land. The rest is under private ownership. Prior to 1971 Meru Town had been a township with a reserve area of only two (2) square kilometres. When it was elevated into a municipality status in 1971 and its boundaries extended beyond the two (2) square kilometre reserve, the outlying land had already been adjudicated and the owners issued with land certificates. Public land in the municipal area was therefore restricted to the old township and which even today, comprises the town centre.

The predominant land uses in Meru Municipality include commercial, residential, industrial, agricultural, transportation, schools, public institutions and the extensive forest reserve and undeveloped land which has been used for recreational facilities. These land use activities will be discussed below.

(a) Commercial Land Use

The total built up area for commerce and trade purposes excluding transportation amounts to about 11.68 hectares constituting less than 0.2 per cent of the total municipal area. The commercial set up of the municipality can be categorised into two; the Central Business District which is developed with an assortment of businesses and manned by both indigeneous and Asian businessmen, and the outlying commercial centres characterized by a few shops which are closed most of the time apart from market days, weekends and evenings. These shops are manned by the local people of Meru. Examples of these local markets are Giantune, Irinda, Kinoru and Thimangiri.

(i) The Central Business District

This is the centre of Meru Town with a total built up area of about 8.62 hectares which forms about 74 per cent of the total land under commercial use. The Central Business District comprises the old town and it has been growing over the years. Since the establishment of Meru

town as an administrative centre. Being the centre of all activities in Meru town for many years, this region has been able to attract most of the commercial activities. Most of the town functions and government offices are centred here. The Central Business District was established with an assortment of business-oriented pattern which has not been altered. Most of the buildings in this region comprise of retail and wholesale shops, textile stores, automobile spare part shops, chemists shops and a large number of bars and restaurants, commonly referred to as hotels.

All public offices are located at the upper end of the Central Business District and they have formed what may appear as an "office zone". In this zone are found the District Headquarters offices, Meru County Council offices, Meru Central Co-operative Union offices, Post Office, the Museum, Law Courts, Library, Teachers' Service Commission offices, Lands offices, Agriculture and Livestock offices and many private offices. The only notable office block outside this office zone is the Kenya National Union of Teachers Block. There are eight financial institutions in the town, all of which are located in the Central Business District.

There is a milk processing plant in the centre of the Central Business District which is one of the odd activities in the otherwise commercial zone. Adjacent

to this plant is an open space of 0.7 hectares. This space has been used in the past as parking ground for matatus (local public vehicles) and public buses. This space also attracted such informal activities as welding, barbers, key cutting, vendors and an open market selling fruits, vegetables and potatoes. It was found that the reason for locating this milk processing plant in the heart of a commercial area was that the plot was owned by the co-operative society that owns the plant. The co-operative society had no other plot to locate the plant, and it was also financially crippled and so could not afford to buy an industrial plot elsewhere. Therefore one factor that caused the plant to be in a commercial area was private ownership and secondly, as the planner argued, the plant was found to be compatible with commercial land use since it was not polluting the area in any way.

(ii) Outlying Commercial Centres

As was discussed earlier, there are three outlying commercial centres located at strategic points where there are high density residential users. These are Kinoru, Gakoromone and Giantune markets. They constitute a total of 3.06 hectares, about 26.2 per cent of the total commercial land use in Meru town. These centres are characterized by a few shops, music studios, bars and hotels. The informal sector, however, dominates the

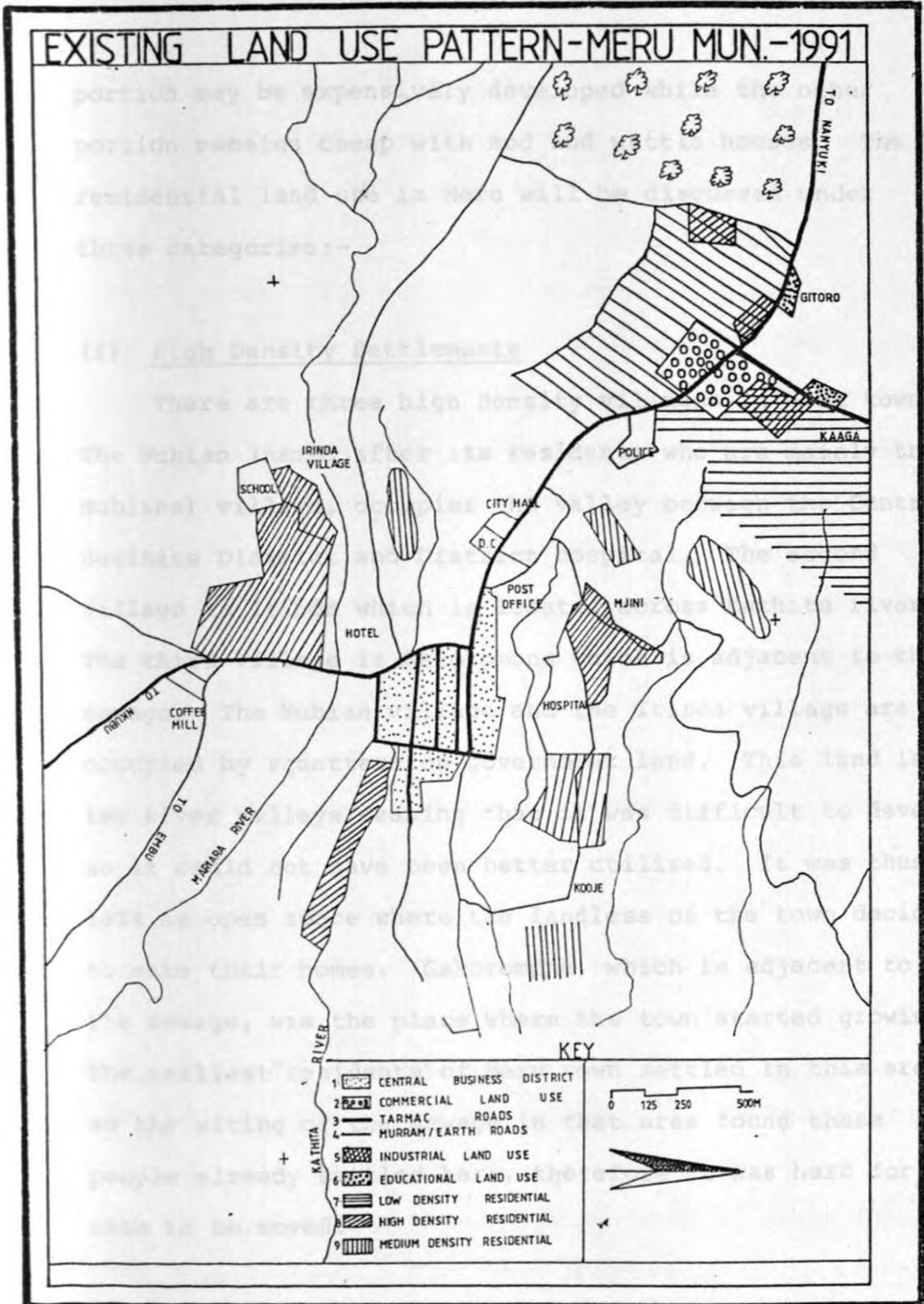
activities in these centres. Welding, car garages, shoe repairs, joinery and carpentry, markets for second-hand clothes and stands for vegetables and miraa (drug) sellers are well established in these centres. Businesses here are manned by indigeneous people only. Clearly, there is lack of systematic land use patterns in outlying commercial centres. All activities are mixed up. The major cause for this situation was found to be private land ownership coupled with lack of development control.

(b) Residential Land Use

There are only five planned residential estates in Meru town. All these were meant for middle income earners. Four of these estates are owned and maintained by the Municipal Council. Kooje estate, which is the biggest of the five and most recent, is under tenant purchase scheme. These five estates, however, constitute a very small proportion of residential units in Meru town.

The large proportion of residential units are located in the extended area between Milimani area and the forest and the extensive Kaaga region shown on Figure 3.1. Land in these regions is privately owned, so one finds a mixed up residential development where very expensive houses are mixed up with cheap houses. This has also resulted from land subdivision whereby an individual sells a portion of his land and maintains the other, so that one

FIGURE 3.1



Source: Prepared by the author.

portion may be expensively developed while the other portion remains cheap with mud and wattle houses. The residential land use in Meru will be discussed under three categories:-

(i) High Density Settlements

There are three high density villages in Meru town. The Nubian (named after its residents who are mainly the Nubians) village, occupies the valley between the Central Business District and District hospital. The second village is Irinda which is located across Kathita river. The third village is Gakoromone which is adjacent to the sewage. The Nubian village and the Irinda village are occupied by squatters on government land. This land is on two river valleys meaning that it was difficult to develop so it could not have been better utilized. It was thus left as open space where the landless of the town decided to make their homes. Gakoromone, which is adjacent to the sewage, was the place where the town started growing. The earliest residents of Meru town settled in this area so the siting of the sewage in that area found these people already settled here, therefore it was hard for them to be moved.

(ii) Medium Density Settlements

All the existing public housing is of medium density apart from a few pool houses in the Milimani area which are for the upper income group. These are the only planned residential estates in Meru town. Four of these estates are owned by the Municipal Council and have only a total of 140 units. The largest estate in this category is under tenant purchase scheme and has a total of 235 units. These houses are located in the old municipal area where public land was available. Outside the old municipal area, a private housing market is thriving in the production of medium cost houses for rental and owner occupation. Most of these private developments have encroached onto agricultural land. The major cause for this is lack of public land for residential development.

(iii) Low Density Residential

High class residential houses are not common in Meru. Apart from a few pool government houses at Milimani area, there are no other low density public housing. However, the private sector has been very active in the provision of this type of housing to fill the gap and most public servants rent houses of this category from the private market. This type of development is prevalent in Kinoru Kaaga area and along Nanyuki Road. The plots are usually 0.2 hectares or more in size. The high class residential are scattered in this otherwise agricultural



area and it is therefore difficult to ascertain the number of units. The high class residential houses are mainly owned by rich Asians businessmen and a few indigeneous people. A substantial number of people who work in Meru town reside in their rural homes outside or within the municipality. It has been said that most of the private residential houses are found in rich agricultural areas. The cause for this is that at present there is no government land available that can be allocated to residential user. This leans heavily on the fact that Meru town was not originally planned to carry its present population. Almost all the land available for residential use is in the hands of private owners. Consequently, one cannot talk of institutionalised estates or defined housing estates in the town. What is available in the town are small pockets of houses scattered in agricultural areas. The authorities concerned have not controlled residential developments in the town. This again is because of private ownership so that the control of houses put up by such developers becomes difficult.

(c) Industrial Land Use

Industrialization is a recent phenomenon in Meru town because the town initially developed as an administrative centre with a limited commercial function. Meru does not have any major manufacturing industrial

activity apart from the co-operative grain milling factory which has been closed for a long time due to lack of maize. The predominating industries, however, are motor service and warehousing. The Kenya Planters Cooperative Union and National Cereals and Produce Board (N.C.P.B.) stores are significant features in the industrial development of the municipality. The significant industries in Meru can be classified as below.

(i) Warehouses

There are three large warehouses within the municipality boundaries. Of the three, only Kenya Planters Co-operative Union (K.P.C.U.) has been located within the area zoned industrial. The other two, the Kenya Grain Growers Co-operative Union (K.G.G.C.U.) and the Kenya Railways Corporation are located at Gitoro about three kilometres west of the area originally zoned industrial. The two are on Meru-Nanyuki Road. The fourth large warehouse near Meru town is the giant National Cereals and Produce Board store at Katheri on Meru-Embu road. This store is located outside the municipality boundaries. Of all these warehouses, only one is located in the industrial zone. This is explained by the nature of land on which the industrial zone is. This area marked on Figure 3.1 is not level, and it is situated across a river valley. This means that to get there one has to cross a river which has a steep valley.

This renders the area quite inaccessible. On the other hand the road to that area is a very poor road characterized by a lot of dust during the hot season and a lot of mud during the rainy season making it very difficult for heavy vehicles to reach the area. However, the physical planner has taken note of this and in the new development plan, which, by the time of the survey was still not complete, the industrial zone has been taken to the levelled area along Kinoru-Kaaga area. The plan takes advantage of the fact that already, most industries have been located in this area.

(ii) Food Processing Industries

There are four different food processing firms in Meru town. The Meru Central Farmers Co-operative Union's Milk Processing plant is located at the centre of the town. The cause for this was discussed earlier. The plant processes and packs milk from the various farmers' co-operative societies in the district. There are four bakeries in the town, one located in the town centre, another one at Gitoro about three (3) kilometres west of the town centre along Meru-Nanyuki Road. The other two are major ones and are both managed by a group of Asians. These are both located at Kaaga along Meru-Maua Road in an area zoned residential. This again is due to shortage of developable industrial land. Another reason for locating these bakeries here is market. The area is

adjacent to educational institutions which are major consumers of the products. The only firm in this class which is located in the area zoned for industrial development is the IREACO factory which produces animal feed. This is located within the Kenya Industrial Estates. It is worth mentioning here that although the Kenya Industrial Estates (K.I.E.) have set out the land along River Kazita, adjacent to the Central Business District for industrial development, the new upcoming industries choose to locate at Kinoru area, an area that is more levelled and accessible.

The maize milling plant at Gitoro on Nanyuki Road adds to the cluster of industries at Gitoro area. Accessibility is one of the factors that led to its being located here. In addition to this maize meal, there are six small posho mills. Three are located at Gakoromone, an area zoned commercial. This is as a result of plot availability. Two maize mills are located at Kinoru and the sixth at Kaaga. These three maize mills are located here because there is ready market. These areas have the greatest number of rural residents, that is, the traditional owners of land, therefore creating a big market for the products of these posho mills.

### (iii) Timber Industry

There are three giant saw mills in Meru town. Two of them are located at Kinoru market and the third at Gitoro, only about one kilometre west of Kinoru market. There are other numerous saw mills in Meru town and all of them are tending to locate towards the forest on the Meru-Nanyuki road, shown on Figure 3.1. The obvious cause of this location is that industrial land users want to be as close to the raw material as possible. Most of the raw material for these timber industries is obtained from the forest, and the closer one is to the forest, the cheaper the transportation costs.

### Motor Workshops

These are general motor workshops which deal with the repair of automobiles. Some of the large motor workshops even sell new and second-hand vehicles. There are six workshops in Meru town, three of them are located in the town centre, two at Kinoru and one at Gitoro. There are several smaller open air garages, most of which are located in the commercial zone. Most other smaller garages are scattered all over the town.

### Overview

Throughout this section, it has come out clearly that there is a lot of mix-up of activities in Meru town. The factors causing this situation have been mentioned briefly.

It has been noted that most activities are tending to move towards the Kinoru-Kaaga area. Reasons why this area is becoming favourable to land users have also been mentioned. They included accessibility in the sense that this area is served by a road network which is usable throughout the year, the area is more levelled compared to other parts of the municipality, and land is available due to numerous divisions taking place. In fact in the near future, this area may become the new Meru town.

#### B. Data Analysis and Presentation

In collecting the data, a stratified random method of sampling was used. The respondents were only selected from identified areas where land use portrayed some problems, for example where there were cases of land use conflicts. Additional respondents, who were only plot or land owners, were interviewed systematically until the desired number of respondents was obtained. As was stated in chapter one, the desired number of respondents was meant to exceed 30 for each category of land uses, residential, commercial and industrial, but due to various problems in the field, this number was not obtainable in most cases. One of the biggest problems was non-availability of plot/land owners, giving of false information, or the plot owner simply ignoring the interviewer.

The above number of problems resulted in the small sample size of data presented in this section of the chapter.

Data collection was done through administration of four sets of questionnaires, three on different categories of land use and one for the planning authorities. Interviews were carried out face to face, where the respondent answered the questionnaire with the help of the interviewer.

Later the data collected was analysed factor by factor in table form and expressed in percentages. This is shown in the tables that follow.

Table 3.1 introduces the general location of different land uses within the nunicipality.

TABLE 3.1

GENERAL LOCATION OF LAND USES IN MERU

LAND USE	NUMBER OF LAND USE IN AREAS		TOTAL
	ZONED	NOT ZONED	
Residential	9	16	25
Industrial	5	15	20
Commercial	12	18	30
Total	26	49	75
Percentage	35	65	100

Source: Prepared by the Author.

A large number of land uses were not located in areas zoned for them. Industrial land use had the highest percentage of such cases whereby 75 per cent of the total number of industrial land users interviewed were found located outside the industrial zone. The cause for this was that the area zoned industrial was not well accessible.



Political involvement in the above 49 conflicting cases was minimal. Only three out of the 49 admitted that they were actively involved in politics. These were two councillors and a chief.

TABLE 3.2

LAND USE APPROVED BY PLANNING AUTHORITIES IN MERU

LAND USE	APPROVED	NOT APPROVED	TOTAL
Residential	21	4	26
Industrial	15	5	20
Commercial	20	10	30
Total	56	19	75
Percentage	75	25	100

Source: Prepared by the Author.

Despite the fact that most land uses were not located in areas zoned for them, 75 per cent of these land users claimed that their developments had been approved. The planning authorities attributed this to two factors. One was that most of these developments were on privately-owned land and this made it very difficult to control development. Secondly, they blamed it on land users themselves who put up developments before submitting their proposals to the authorities. In such cases it was very uneconomical and difficult to ask the developers to pull down their structures. On the other hand, some of these plot owners had used their own influence to have their developments approved.

A number of plot owners felt that the approval process was too long and therefore they were compelled to put up their developments without seeking approval. One plot owner complained that he had submitted his proposals more than six months before and it was still lying in the Planner's office.

The approving authorities were also known to ask for certain favours before they could approve development proposals.

Table 3.3 shows that most developers had bought their plots, therefore this implied that the plots were under private ownership. Only 21.3 per cent of the total number of plot owners interviewed had been allocated plots by the Commissioner of Lands. Private ownership, as mentioned earlier, made it very difficult for planning authorities to control developments.

TABLE 3.3

MODE OF PLOT ACQUISITION IN MERU MUNICIPALITY

LAND USE	HOW PLOT WAS ACQUIRED			TOTAL
	BOUGHT	ALLOCATED	INHERITED	
Residential	17	3	5	25
Industrial	16	3	1	20
Commercial	16	10	4	30
Total	49	16	10	75
Percentage	65	21	13	100

Source: Prepared by the Author.

Profit maximization was not one of the principal aims of location of land uses in Meru town, as Table 3.4 shows.

TABLE 3.4

AIM OF LAND USE LOCATION IN MERU TOWN

LAND USE	WAS IT PROFIT MAXIMIZATION		TOTAL
	YES	NO	
Residential	5	20	25
Industrial	7	13	20
Commercial	15	15	30
Total	27	48	75
Percentage	36	64	100

Source: Prepared by the Author.

It was found that 64 per cent of respondents said their aim of locating where they were was not profit maximization. What determined their location was plot availability within the municipality.

Plot owners were asked whether the following factors influenced their choice of location:-

- Topography
- Climatic conditions
- Zoning regulations
- Customs and culture
- Accessibility.

Their responses are given in Tables 3.5, 3.6 and 3.7.

TABLE 3.5

LAND USE INFLUENCE BY TOPOGRAPHY

LAND USE	INFLUENCED	NOT INFLUENCED	TOTAL
Residential	17	8	25
Industrial	12	8	20
Commercial	9	21	30
Total	38	37	75
Percentage	51	49	100

Source: Prepared by the author.

Although Meru Municipality was located on an area with a difficult terrain, this did not seem to affect land users to a great extent. This could be explained by shortage of land within the town, so that developers did not have much of a choice. This point was verified by one case of a municipal-owned residential estate. This estate was located on a very difficult area with a steep slope. The houses in this estate were inaccessible by vehicle. To gain access to them, the developers constructed a staircase leading to every house. This kind of development was not only expensive but also dangerous especially to children who risked rolling down the steep stairs or down the valley. As if this was not enough, there was a private high school neighbouring this estate. The school did not have a playground due to the difficult nature of the land whereon it was located. The Municipal Council who owned this estate confirmed that it was shortage of public land that made them develop that estate on slopping ground. Likewise the Asian who owned the school based his point of locating there on lack of land within the town, yet there was need for a school within the town area.

Industrial location was adversely affected by topography. Over 70 per cent of the total number of industrial land users interviewed had located their industries in the levelled areas around Kinoru-Kaaga.

The area originally zoned industrial across River Kazita proved difficult and inaccessible.

Residential land users were also influenced by the physical environment. This applied mostly to private developers and home owners who considered the area towards the forest ideal for their living conditions because it was cooler.

Micro-climatic conditions as a factor influencing urban land use were insignificant in such a small town like Meru.

Zoning regulations were among the most influential factors in determining urban land use. In Meru town, however, zoning regulations were not taken seriously by land users. Table 3.6 clarifies this.

TABLE 3.6

LAND USE INFLUENCE BY ZONING REGULATIONS

LAND USE	INFLUENCED	NOT INFLUENCED	TOTAL
Residential	8	17	25
Industrial	8	12	20
Commercial	10	20	30
Total	26	49	75
Percentage	35	65	100

Source: Prepared by the Author.

The reasons why the zoning and planning regulations were not adhered to was that of poor development control. Land users complained that they hardly saw any official from planning authorities at a construction site. This gave developers a chance to bend the rules and omit others completely. The planning authorities, however, complained of financial constraints. This meant that in most cases they could not visit construction sites due to lack of fuel.



TABLE 3.7

LAND USE INFLUENCE BY CUSTOMS, CULTURE, SOCIAL VALUES  
IN MERU TOWN

LAND USE	INFLUENCED	NOT INFLUENCED	TOTAL
Residential	10	15	25
Industrial	0	20	20
Commercial	0	30	30
Total	10	65	75
Percentage	13	87	100

Source: Prepared by the Author.

People's customs and culture had a significant role in influencing residential land use only. About 40 per cent of total number of residential land users interviewed considered their culture before finally settling at their present locations. This aspect was particularly evident in high density settlements of Nubian Village and Mjini. The occupants were mostly Muslims, Swahilis and Nubians. In fact one village (Nubian), was named after its residents. The Nubian people were the first to settle in

this village when Meru was born, and to-date, every Nubian in Meru lives here. The kind of houses developed in this village were rectangular in shape, mud walled with a corridor running through and divided into many single rooms. Developers of this type of houses could not try to improve the houses because these were the types of houses favourable to the residents. The study also revealed that some residents of this vilalge were very rich owning big businesses in town, but due to their cultural and religious attachment, they did not live elsewhere.

The Asian community in Meru had influeced land use a great deal. They lived in one area along Kaaga area on Meru-Maua Road. They resided here and did businesses here. As a result, land values in this area were so high that they were entirely left for them. The area was being developed for high class residential by private developers. In fact, the Meru people referred to this area as "the Muthaiga of Meru". (In Nairobi, Muthaiga area is occupied by the very rich cadre of Nairobi residents).

During the study, it was also found that social values attached to land contributed to the present nature of land use in Meru. The agricultural land in Meru was inherited and in it lay the people's salvation. Land was seen as a status symbol. During the struggle for Kenya's independence, Kenyatta, the founding father of this nation,

said that land was Kenya's greatest asset. It was the inheritance received from the forefathers and in it lay the people's salvation.

Land was a visible and tangible asset and there was social prestige attached to its ownership. Thus land could be withheld from the market just because of the psychological satisfaction it gave to the owner. From the survey, it was revealed that there were some land owners who were not prepared to part with their land at whatever cost particularly if one had no other land. Such a person, when faced with compulsory acquisition, had his foundations shaken and his communication with his forefathers and future generations cut. In short, land ownership had a social value in society. It gave the owner a high sense of security regardless of the economics for it. This social value caused land use conflicts in most parts of Meru Municipality especially in the outskirts of the town centre, that is, the peri-urban areas. Therefore land use conflicts in these areas was a consequence of economic and social factors. In freehold parcels the conflicts were evident because there were numerous conflicting interests involved. There were those land owners who were prepared to part with their land because their economic value was higher than the social value. In other words, where there were conflicting values, land use conflicts were expected.

Accessibility is one of the factors regarded by many scholars of urban land use as a major cause of urban land use patterns. The study of Meru town brought out this factor as a major cause of land use patterns in Meru Municipality. The responses of plot owners in Meru on whether accessibility influenced them on their choice of location are shown in Table 3.8.

TABLE 3.8

LAND USE INFLUENCE BY ACCESSIBILITY IN MERU TOWN

LAND USE	INFLUENCED	NOT INFLUENCED	TOTAL
Residential	21	4	25
Industrial	16	4	20
Commercial	27	3	30
Total	64	11	75
Percentage	85	15	100

Source: Prepared by the Author.

A big number of respondents represented by 85 per cent of the sample felt that accessibility was very important and a major determinant of choice of location. Poor accessibility caused areas with difficult terrain to be avoided. The area of Meru Municipality which was noted for good accessibility by all respondents was the Kinoru-Kaaga area shown in Figure 3.1. Here the road network was well developed and the area was levelled, hence making it suitable for all types of developments. No wonder then the whole of Meru town seemed to be moving towards this area.

However, a small percentage of 15 per cent was not influenced by accessibility. It was discovered that these were owners of inherited plots of land and others had been allocated plots on land by the Commissioner of Lands of the Kenya Government.

A list of factors that affected location of different types of land users were given. The respondents were asked to rank the factors that were most influential in their choice of location.

1. Residential Land Use

- a. Plot availability
- b. Affordability
- c. Proximity to town centre
- d. Accessibility

- e. Site was easy to develop
- f. Scenic beauty
- g. Profit maximization
- h. According to zoning regulation.

Their responses are represented in Table 3.9.

TABLE 3.9  
MOST IMPORTANT FACTORS IN RESIDENTIAL LOCATIONS  
IN MERU TOWN

FACTORS	NUMBER OF RESPONDENTS
a only	6
a, c, d	5
c only	2
a, b	1
a, c, d, g	1
a, b, c	1
a, d, e	1
a, e	1
a, b, e	1
b, e	1
b	1
a, c, e	1
b, e, g	1
Total	23

Source: Prepared by the Author.

About 48 per cent of respondents felt that plot availability, accessibility and proximity to the town centre were the most important factors.

2. Industrial Land Use

- a. Accessibility
- b. Raw material availability
- c. Labour availability
- d. Plot availability
- e. According to zoning
- f. Ready market
- g. Proximity to other industries.

Table 3.10 gives their responses.

TABLE 3.10

FACTORS MOST IMPORTANT IN INDUSTRIAL LOCATION IN

MERU TOWN

FACTORS	NUMBER OF RESPONDENTS
a only	6
d only	5
a, b, c, d, g, h	1
a, f, c, d	1
e	1
b, d	1
b, a, d, e	1
a, d, e	1
d, e	1
a, d	1
c	1
Total	21

Source: Prepared by the Author.

Like in residential location, plot availability and accessibility were considered most important factors. However, industrial land users considered accessibility as most important. It was also found that raw material availability contributed greatly to industrial land use





**TABLE 3.11**  
**IMPORTANT FACTORS AFFECTING CHOICE OF COMMERCIAL**  
**LAND USE IN MERU TOWN**

FACTORS	NUMBER OF RESPONDENTS
c	9
c, e	5
f	3
a, c	2
g, d	2
e, g, a	2
h, a	1
c, e, h	1
e, a, c	1
d, b	1
b, c	1
e, g, d	1
g, e, d	1
Total	30

Source: Prepared by the author.

Other factors that had contributed to the present land use patterns in Meru town included availability of facilities such as schools, electricity, water and health facilities. Kaaga-Kinoru area was well supplied with the above facilities. For example, there were many educational facilities including a teacher training college, several secondary schools, many primary schools including special educational centres. As a result, this area attracted many developers. A bakery was located adjacent to these institutions because there was a ready market. Also many timber merchants located in the area got market for their furniture especially desks and tables.

#### Summary of Findings

The field observation revealed that Meru town was located on fairly slopping ground dissected by numerous traverse valleys which run in a west-east direction. The locality slopped from west to east. Generally the western parts were deep with a number of steep valleys which tended to become less steep as one approached the eastern slopes. The town therefore tended to grow towards the western and eastern ends; but Meru forest hindered its growth towards that direction. This then diverted the growth of the town towards Ruiru, putting a lot of pressure to the land around Kaaga area. Kathita River, on the other

hand, stretched along the southern border of the town centre. Along the river was a deep valley which made transportation southwards very difficult. Presence of this river had constrained the expansion of the town southwards. Along the northern end of the commercial centre was another river valley forming a natural barrier to expansion of the town northwards. This valley, together with Kathita River, formed natural boundary constraints to the expansion of the town and most developments were confined within the two valleys.

The uneven topographical layout of the town, coupled with lack of government land, had put a lot of pressure to the existing land. For example an acre of land along Meru-Nanyuki Road was, at the time of the survey, going for Kenya Shillings 250,000.00 to 300,000.00. Along Kaaga-Maua Road, the going price of residential land was a bit higher because of the influence of the Asian community.

Therefore it was appropriate to say that the topographical layout and general locational layout of the town had a lot of influence to the existing land use in Meru Municipality.

Meru town's growth was concentrated along the main transport routes resulting in a ribbon type of development. This was because the areas near these routes were easily accessible.

Although there was a physical plan for Meru town, developments did not adhere to that plan. Therefore the physical development pattern of Meru town was quite different from how it should be according to the physical plan. Activities of land use were mixed up. This made the town appear haphazardly planned. For example, there were only five planned residential estates in the town. The rest were pockets of unplanned residential settlements.

Meru town was zoned but very few activities were located in areas zoned for them. This problem was greatest in the industrial land use where it was found that only three industries were located in the areas zoned industrial. The rest were all located elsewhere causing numerous cases of land use conflicts. A milk processing plant was located in the heart of the commercial area. Land zoning and planning violations notwithstanding, over half of these developments had been approved.

Political interests also played an important role in shaping of Meru's land use patterns. Although 80 per cent of the total number of plot owners interviewed said they were not politically active, political interests indirectly influenced the ensuing land use practice in Meru town. Most developers were believed to have god-fathers who were active politicians and who made sure their proposals were approved.

On the same point, the local authorities who sat in the town planning and works committee were politically elected and had little knowledge of planning laws. To protect their seats, they acted in agreement with the developers such that even if a certain developer was against the plan, this development proposal had to be approved. These local authorities included the mayor, the town clerk and the councillors. The physical planner had little power to control such developments.

Plot availability was a major determinant of location within the municipality. A very high percentage of respondents said that they were not motivated by profit maximization in their location.

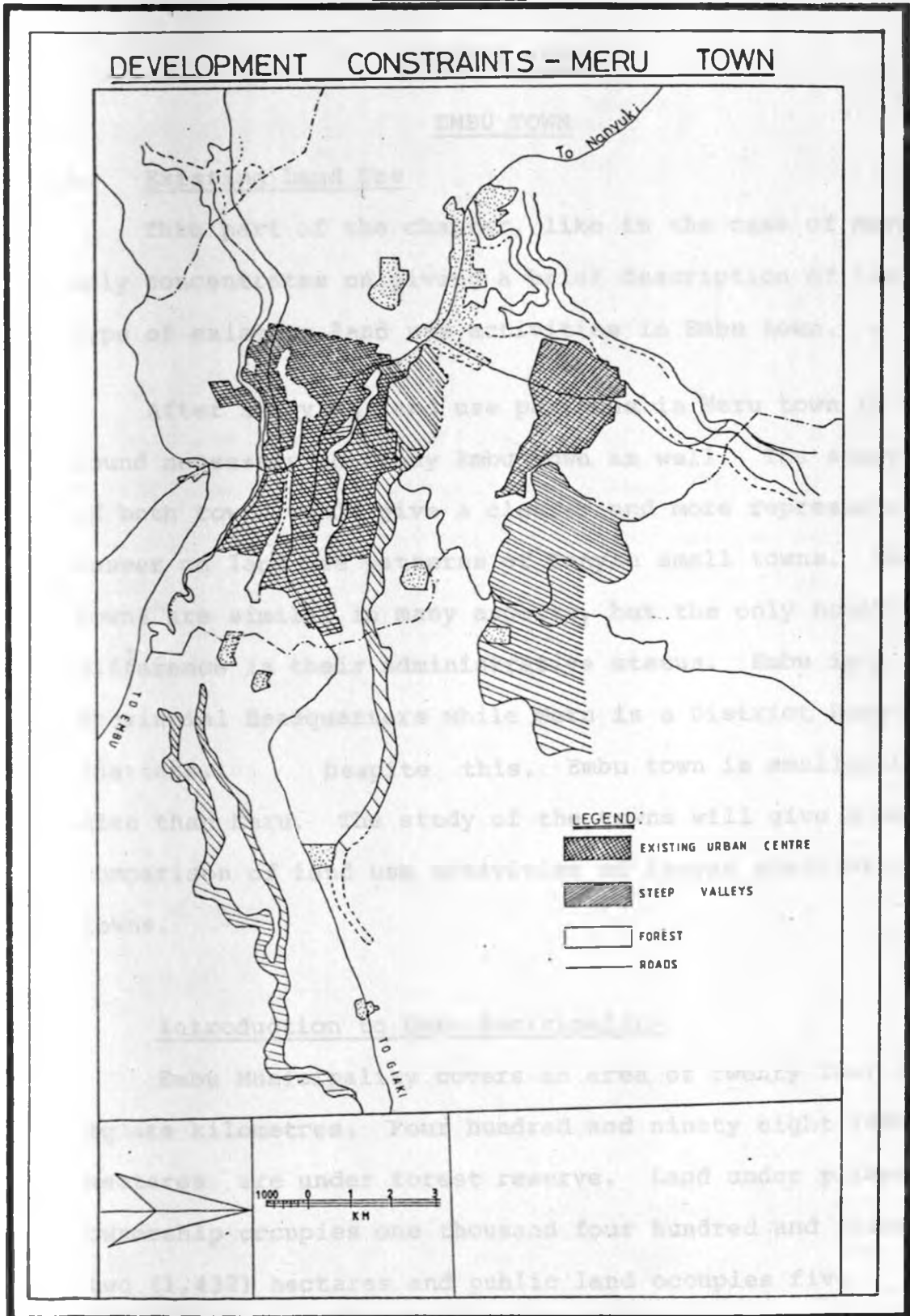
Social values played an important role in influencing the physical pattern of Meru town. These included customs, culture, religion and social values attached to land.

Tastes and preferences were not very significant in shaping land use patterns in Meru town.

Accessibility contributed heavily to the present land use pattern in Meru town.

Meru town faces a number of development constraints which hinder the growth towards certain directions. These constraints, as indicated in Figure 3.1, include steep valleys, forests, existing urban centres.

FIGURE 3.2



Source: Department of Physical Planning, Meru.

## CHAPTER FOUR

### EMBU TOWN

#### A. Existing Land Use

This part of the chapter, like in the case of Meru, only concentrates on giving a brief description of the type of existing land use activities in Embu town.

After studying land use patterns in Meru town it was found necessary to study Embu town as well. The study of both towns would give a clearer and more representative answer on land use patterns of Kenyan small towns. The towns are similar in many aspects, but the only notable difference is their administrative status. Embu is a Provincial Headquarters while Meru is a District Headquarters. Despite this, Embu town is smaller in size than Meru. The study of the towns will give a better comparison of land use activities of Kenyan administrative towns.

#### Introduction to Embu Municipality

Embu Municipality covers an area of twenty four (24) square kilometres. Four hundred and ninety eight (498) hectares are under forest reserve. Land under private ownership occupies one thousand four hundred and thirty two (1,432) hectares and public land occupies five hundred and fifty four (554) hectares.



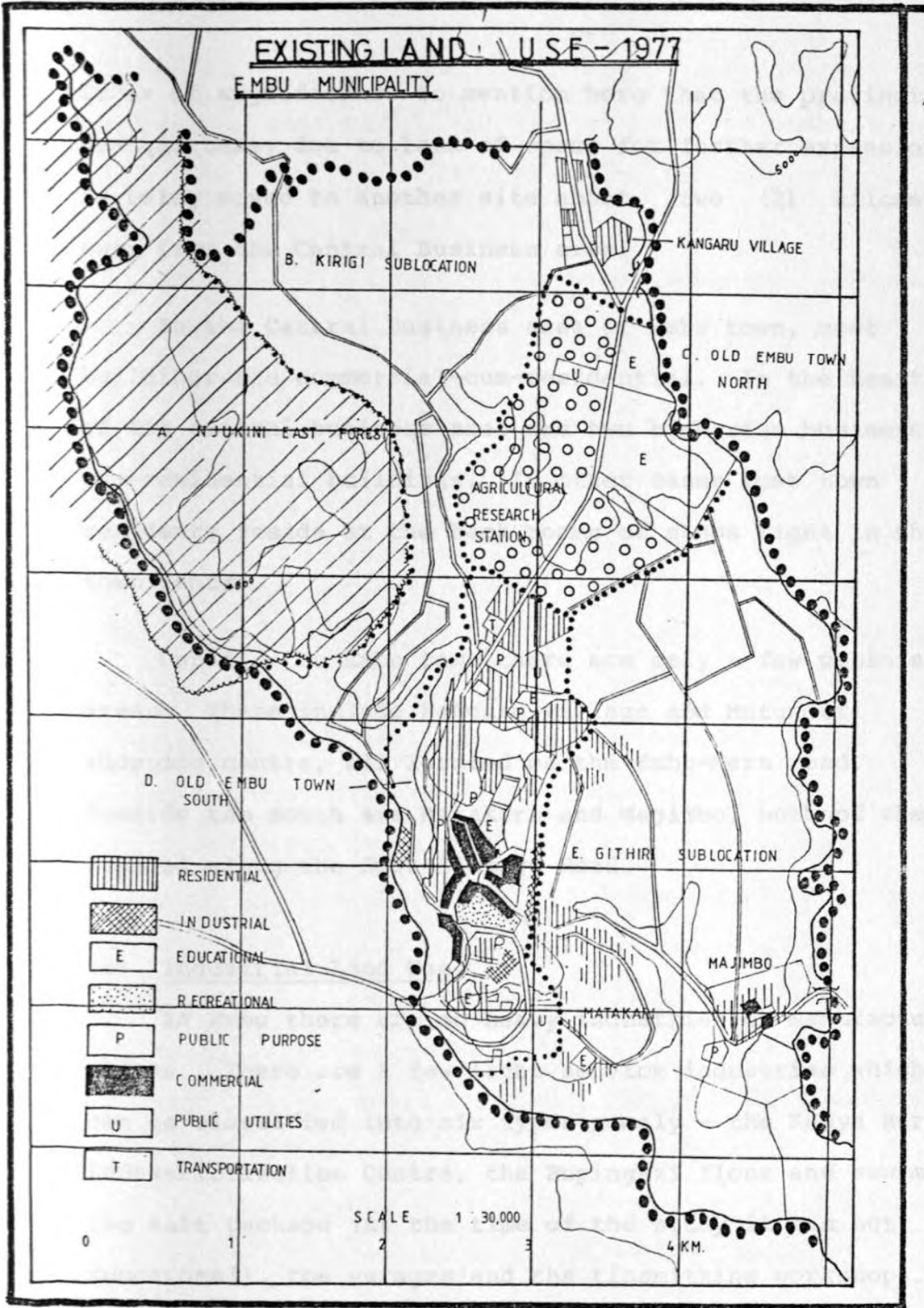
Most of the urbanised land within the municipality is located within old Embu town, north and south, along the Nairobi-Meru road as shown in Figure 4.1. In old Embu town north, the Kangaru High School and the Agricultural Research Station cover nearly all the area. In old Embu town south, are located the high and medium income residential quarters. The reason for this location is that the area is cooler and therefore has conducive living conditions for the higher income group. The Provincial hospital and the Provincial Headquarters are also located along this area.

However, the predominant land uses in Embu town include commercial, residential, agricultural, industrial, transportation, educational institutions and recreational facilities. Below is a discussion of these land uses and where they are located.

(a) Commercial Land Use

Most of the commercial activities in Embu town are located in the Central Business District. Most of the business activities include wholesale and retail shops, supermarkets, bars and restaurants, textile stores and an open market which has about fifty (50) stalls. There are various banking institutions in the Central Business area. An 'office zone' which houses all provincial Headquarters is also within the central area.

FIGURE 4.1



Source: Department of Physical Planning, Embu.

It is of significance to mention here that the provincial headquarters, due to lack of space for further expansion, is being moved to another site about two (2) kilometres away from the Central Business area.

In the Central Business area of Embu town, most buildings are commercial-cum-residential. In the heart of the central business area are two high rise business-cum-residential buildings. In other cases most town residents reside at the back rooms of shops right in the town centre.

Outside the Embu town there are only a few urbanised areas. These include Kangaru village and Mutunduri shopping centre, all located on the Embu-Meru road. Towards the south are Matakari and Majimbo, both of them located along the Embu-Siakago Road.

(b) Industrial Land Use

In Embu there are no heavy industries or manufacturing plants. There are a few light service industries which can be classified into six types namely - the Kenya Rural Industrialization Centre, the Rupingazi flour and saw mills, the salt package (at the time of the study it was not functional), the garages and the tinsmithing workshops. The salt package is right in the centre of the commercial area. The reason for this was non-availability of land in the area zoned industrial. The tinsmithing workshops are

located close to the municipal market, again due to shortage of land within the town's industrial zone.

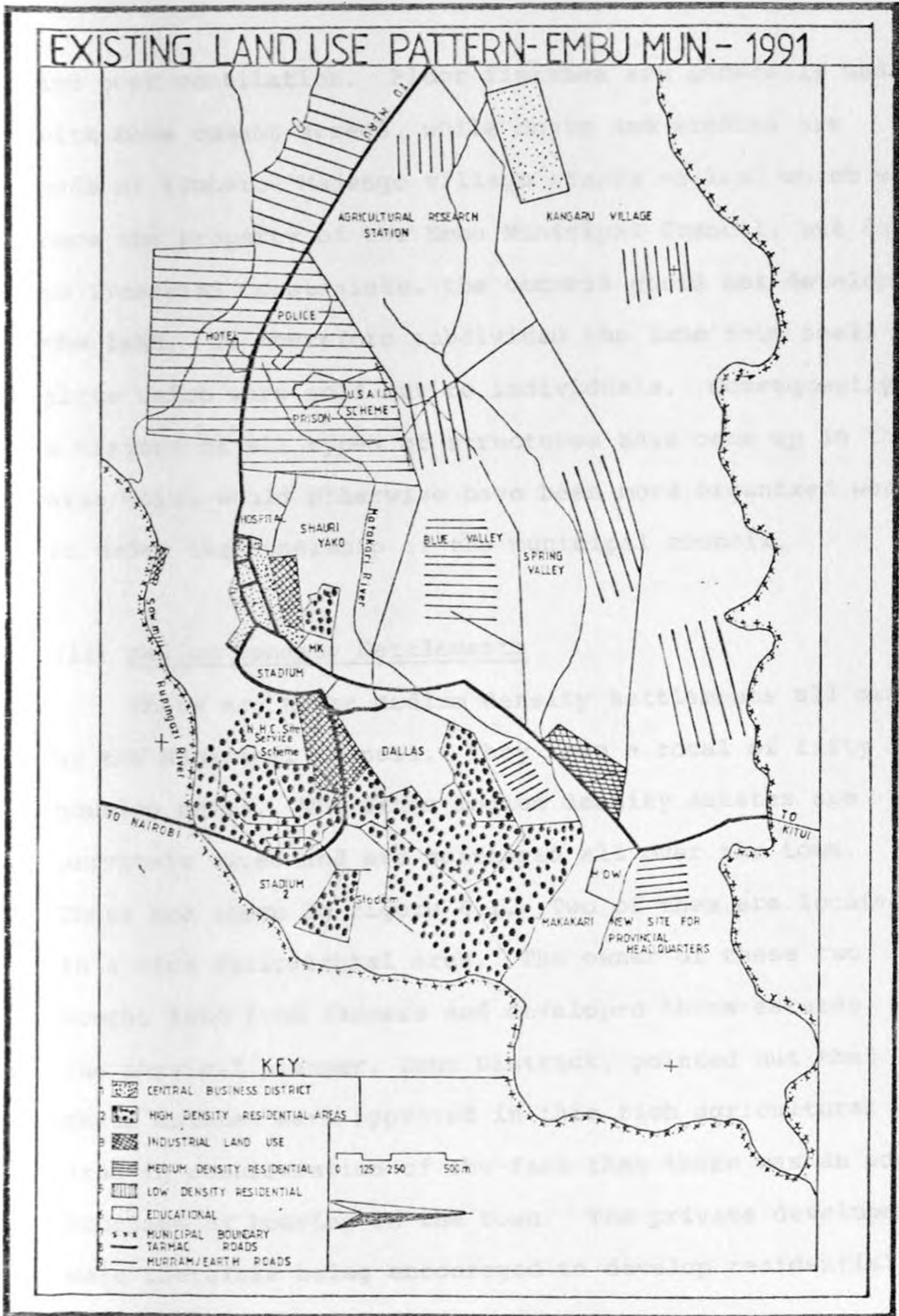
### Residential Land Use

Embu town, unlike Meru town, has a number of organized residential estates. There are three medium class estates owned by the Municipal Council and about five privately owned estates. The residential land use will be discussed in three categories.

#### (i) High Density Settlements

There are four high density settlements in Embu town. They are Dallas, Stadium, Majengo and Shauri Yako. Stadium and Shauri Yako are located on sloping land along river valleys. The residents of Shauri Yako are squatters on otherwise public open space. Stadium Estate is adjacent to the sewage. The residents live here because there was no other land for them to occupy. Muslim Estate, as the name suggests, developed as a muslim community. The residents of this village are held together by their Islamic faith. Dallas Village is located south of Embu town on the Embu-Siakago road about one and a half kilometres east of the town centre as indicated in Figure 4.2. The houses in all these high density settlements are mostly constructed of mud and wattle, sometimes rendered and painted externally with galvanized corrugated iron sheets on timber rafters without ceiling,

FIGURE 4.2



Source: Prepared by the author.

and poor ventilation. Floor finishes are generally mud with some cement screed, while doors and windows are made of timber. Majengo village stands on land which was once the property of the Embu Municipal Council, but due to financial constraints, the council could not develop the land. It therefore subdivided the land into small plots which were sold out to individuals. Consequently, a mixture of all types of structures have come up in the area which would otherwise have been more organized were it under the ownership of the municipal council.

(ii) Medium Density Settlements

There are three medium density settlements all owned by the Municipal Council. They have a total of fifty housing units. The other medium density estates are privately owned and are scattered all over the town. These are shown in figure 4.1. Two of them are located in a rich agricultural area. The owner of these two bought land from farmers and developed these estates. The physical planner, Embu District, pointed out that these estates were approved in this rich agricultural area in consideration of the fact that there was an acute shortage of housing in the town. The private developers were therefore being encouraged to develop residential estates.

(iii) Low Density Settlements

All the low density residential estates are located in privately owned land. As shown on Figure 4.1, they are located in the northern part of the municipality where it is cooler. These estates have encroached into the otherwise rich agricultural areas where rapid land subdivisions are going on. These areas include Spring Valley, Blue Valley and Kamiu. All these areas, as their names suggest, are on high level ground overlooking river valleys as can be seen in Figure 4.1. However, these high class residential estates are not completely isolated, because they are mixed up with very poor houses of mud and wattle. This is because of land ownership practices whereby a land owner sells a portion of his land and is left with the other portion.

B. Data Presentation And Analysis

Like in the case of Meru town, the method of sampling used for data collection was stratified random sampling. This was done by identifying the problem areas of land use where land uses were either in conflict or where certain land uses were located in areas unsuitable for them. Respondents were chosen from these problem areas until the desired number of respondents was obtained.

In most cases, however, it was not possible to obtain the desired number of respondents due to various



problems encountered in the course of the survey. Some of the problems, as in the case of Meru, included non-availability of plot owners who were either said to be out of the town at the time or whose whereabouts were not known. Other respondents just refused to part with information. Another problem experienced in Embu town was concerning the planning authorities. Only the District Physical Planner and the Provincial Physical Planner gave some information. The other adamantly refused to give any useful information. Due to the above problems, the researcher settled for the little information available. This explained why the samples of data collected were smaller than the desired number.

Data collection was done through administration of four sets of questionnaires, three on different categories of land uses and one for the planning authorities.

Data was analysed factor by factor in table form and later presented in percentages. The tables that follow give more details of the data and the analysis.

Table 4.1 introduces the general location of different land uses in the municipality of Embu.



TABLE 4.1

GENERAL LOCATION OF LAND USES

LAND USE	NUMBER OF LAND USES IN AREAS		TOTAL
	ZONED	NOT ZONED	
Residential	6	17	23
Industrial	14	7	21
Commercial	16	12	28
Total	36	36	72
Percentage	50	50	100

Source: Prepared by the author.

The table shows that a large number of industrial and commercial land users were located in areas zoned for them. The violaters of zoning regulations were the land users in the residential category. Shortage of public land developable for residential developers made developers to buy land elsewhere within the municipality. Most of this land was available in the agricultural areas, hence the conflicts of land use between agriculture and urban. There were few cases of conflicts between residential and industrial land uses.

TABLE 4.2

LAND USES APPROVED BY PLANNING AUTHORITIES IN  
EMBU TOWN

LAND USE	APPROVED	NOT APPROVED	TOTAL
Residential	18	5	23
Industrial	14	7	21
Commercial	21	7	28
Total	53	19	72
Percentage	74	26	100

Source: Prepared by the author.

Although most developments were found to be conflicting, 74 per cent of these developments had been approved. This was attributed to inadequate and inefficient development control mechanisms. It was due to incompetency of the approving authorities. The local authorities assigned the duties of approving development proposals were politically elected to their offices. Therefore they had their own political interests to protect, and ended up approving developments regardless of where they were located. On the other hand, these local authorities has little knowledge

of planning and zoning regulations. The District Physical Planner explained that developments of Embu town had experienced a lot of violations of the town's physical structural plan due to political pressure. For example, land set aside for a school had been subdivided and sold out to individuals who had political godfathers' support.

Most plots had been bought and were under private land ownership. Where land was under private ownership, development control was very difficult. As the Provincial Physical Planner pointed out, private land ownership within Embu Municipality was a strong determinant of prevailing land use within the municipality. He gave an example of a doctor who had bought a piece of land in an area zoned industrial and had proposed to develop a nursing home. Table 4.3 shows this information.

TABLE 4.3

PLOT ACQUISITION IN EMBU TOWN

LAN USE	HOW PLOT WAS ACQUIRED			TOTAL
	BOUGHT	ALLOCATED	INHERITED	
Residential	12	3	8	23
Industrial	13	5	3	21
Commercial	20	6	2	28
Total	45	14	13	72
Percentage	63	19	18	100

Source: Prepared by the author.

Table 4.4 shows that plot/land owners in Embu town felt that profit maximization was not a factor that determined their location. The main determinant was plot availability. After acquiring a plot within the town or within the municipality, one later decided on a kind of business that would give him good returns.

TABLE 4.4

AIM OF LOCATION IN EMBU TOWN

LAND USE	WAS IT PROFIT MAXIMIZATION		TOTAL
	YES	NO	
Residential	4	19	23
Industrial	1	20	21
Commercial	8	20	28
Total	13	59	72
Percentage	18	82	100

Source: Prepared by the author.

Plot owners were asked whether the following factors influenced them in their choice of location.

- Topography
- Climatic conditions
- Zoning regulations
- Customs and culture
- Accessibility.

Tables 4.5, 4.6, 4.7 and 4.8 show the responses.

TABLE 4.5

LAND USE INFLUENCE BY TOPOGRAPHY IN EMBU TOWN

LAND USE	INFLUENCED	NOT INFLUENCED	TOTAL
Residential	7	16	23
Industrial	12	9	21
Commercial	11	17	28
Total	30	42	72
Percentage	42	58	100

Source: Prepared by the author.

Although Embu town's topographical features were characterized by slopes and water retention areas, most plot owners were not greatly influenced by these constraints during their choice of plot location. For example, there were medium and low income residential houses developed next to water ponds. At the time of the survey, a developer was constructing a highrise business premise on a fairly sloped ground. Reasons given for developing such difficult areas was shortage of land within the town. Most open

garages and Jua Kali (informal) workshops were also found along sloped ground.

The sloping nature of land in Embu town had affected even the construction of business premises within the town centres. Developers had to construct staircases for customers to gain access from one business premises to another. Due to lack of easy access to the shops by customers, shopkeepers were forced to display their goods on the corridors and verandahs for potential buyers to view.

Climatic conditions were not insignificant in determining urban land use in Embu town. Embu municipality is located within two climatic zones. The northern zone is in a cooler agricultural region. Here were found homes of the rich residents of the town. The area was extensively developed with educational institutions, expensive hotels and recreational facilities. Land values in this region were also high. The southern part of the municipality was hotter and sparsely developed. Here were found residential developments of low income earners. All the three major slum dwellings in Embu town were located in this zone. Land values in this zone were also lower. Due to low values and availability of land in this zone, the government acquired some land and was in the process of transferring the Provincial Headquarters from its present location which was getting congested to this zone.

TABLE 4.6

LAND USE INFLUENCE BY ZONING REGULATIONS IN EMBU TOWN

LAND USE	INFLUENCED	NOT INFLUENCED	TOTAL
Residential	16	7	23
Industrial	15	6	21
Commercial	18	10	28
Total	49	23	72
Percentage	68	32	100

Source: Prepared by the author.

Despite there being a number of conflicting land uses, most developers claimed that their developments had adhered to zoning regulations. This response was highly questionable. The respondents could have feared victimization and so they decided to give false answers.



As shown in Table 4.7, people's customs and culture influenced only residential land users. This was to a small extent, strong attachment to cultural and religious practices were evident in the Stadium Estate. This was occupied by the Waswahili people only (the Waswahili are a tribe of people from the Coast Province of Kenya). Due to their religion and strong cultural attachment, they could not live elsewhere in Embu town other than Stadium Estate. They had also built a mosque within the estate.

The Asian community also had strong cultural practices that prevented them from mixing with other residents of the town. They were crowded together in a small estate within the town centre, an area originally zoned commercial land use. Reason for the Asians preference to live within the commercial area was that they did not like staying away from their business premises.

TABLE 4.7

LAND USE INFLUENCE BY CUSTOMS, CULTURE AND SOCIAL  
VALUES IN EMBU TOWN

LAND USE	INFLUENCED	NOT INFLUENCED	TOTAL
Residential	8	15	23
Industrial	0	21	21
Commercial	0	28	28
Total	8	64	72
Percentage	11	89	100

Source: Prepared by the author.

Accessibility was a strong influence in land use pattern of Embu town; as Table 4.8 shows. This was the main reason why Embu town was developing along the main Embu-Meru road and the Embu-Nairobi road. A small percentage of respondents who were not influenced by accessibility consisted of plot owners whose location was accidental by virtue of having inherited the land or by being allocated. This meant that they just took what was available and developed it according to their suitability and affordability.

TABLE 4.8

LAND USE INFLUENCE BY ACCESSIBILITY IN EMBU TOWN

LAND USE	INFLUENCED	NOT INFLUENCED	TOTAL
Residential	19	4	23
Industrial	18	3	21
Commercial	26	2	28
Total	63	9	72
Percentage	87	13	100

Source: Prepared by the author.

Plot owners were given a list of factors and asked to rank most important factors that influenced their choice of location.

1. Residential Land Use

- (a) Plot availability
- (b) Affordability
- (c) Proximity to town centre
- (d) Accessibility
- (e) Site was easy to develop
- (f) Scenic beauty

(g) Profit maximization

(h) According to zoning regulations.

Their responses are presented in Tables 4.9, 4.10 and 4.11.

TABLE 4.9

MOST IMPORTANT FACTORS IN RESIDENTIAL LOCATION

IN EMBU TOWN

FACTOR	NUMBER OF RESPONDENTS
a only	8
d only	4
g	2
h	2
a, c	2
d, a, c	2
d, e	1
a, b	1
h, g, f	1
Total	23

Source: Prepared by the author.

Table 4.9 brings out clearly that plot availability was a strong and important factor in choice of location. As had been pointed out earlier, Embu town had an acute shortage of land. Therefore, developers only developed where plots were available; and this explains the ensuing land use conflicts in the town.

## 2. Industrial Land Use

- (a) Accessibility
- (b) Raw materials availability
- (c) Labour availability
- (d) Plot availability
- (e) According to zoning
- (f) Ready market
- (g) Proximity to other industries
- (h) Power availability

Table 4.10 shows that zoning regulations were important factors influencing industrial land use in Embu town. Most of the industries in Embu town were located in areas zoned industrial but a few other uses had encroached in industrial land causing land use conflicts. There was one case of maize milling plant located down on a river. The reason for this was that the mill was using water as its source of power. However, plot availability and accessibility were top of the rank.

TABLE 4.10

MOST IMPORTANT FACTORS OF INDUSTRIAL LOCATION IN EMBU

TOWN

FACTORS	NUMBER OF RESPONDENTS
d	7
a, d	5
e	4
a, e, f	3
g, c	1
h	1
Total	21

Source: Prepared by the author.

3. Commercial Land Use

- (a) Affordability
- (b) Closer to similar businesses
- (c) Plot availability
- (d) Ready market
- (e) Accessibility
- (f) According to zoning regulations
- (g) Site close to main road.

TABLE 4.11

IMPORTANT FACTORS OF COMMERCIAL LAND USE IN EMBU TOWN

FACTORS	NUMBER OF RESPONDENTS
c	11
f	9
c, d, e	4
e, g	2
b	1
a	1
Total	28

Source: Prepared by the author.

Although most respondents ranked plot availability as most important, zoning regulations were also very important in Embu town.

### Summary of Findings

The growth of Embu town was found to be linear type, with the main ribbon expansion taking place along main transport routes.

The field survey revealed that most activities in Embu town were mixed up resulting in land use conflicts. Most of these conflicts were agricultural versus urban; commercial versus residential; and industrial versus residential. All these resulted in a town that looked unplanned and chaotic.

Although the town was zoned and a plan drawn for it in 1978, it seemed land users had disregarded the zoning and planning regulations and resulted into haphazard development. At the time of the survey, there were a lot of illegal subdivisions going on. These subdivisions brought about unplanned settlements. It was found that most land use activities were not located in areas zoned for them. These amounted to 55 per cent of the total number of respondents.

Over 70 per cent of the total number of respondents were not actively involved in politics. However, a small percentage were actively involved. These were particularly officials of the ruling political party, Kenya African National Union (KANU), chiefs and their assistants.



The physical planner strongly felt that political pressure had a lot to blame for the existing land use in Embu town. Some active politicians acted behind the curtain to influence approval of development proposals, even those which were against the zoning regulations. This explained why most developments which were not in areas zoned for them had been approved. Another cause for this was poor development control methods coupled with incompetence and inefficiency by the local authorities.

It was felt that Embu town faced a lot of development constraints. These constraints, shown in Figure 4.3, had contributed to ensuing land use arrangement in the town. Some of these constraints included:-

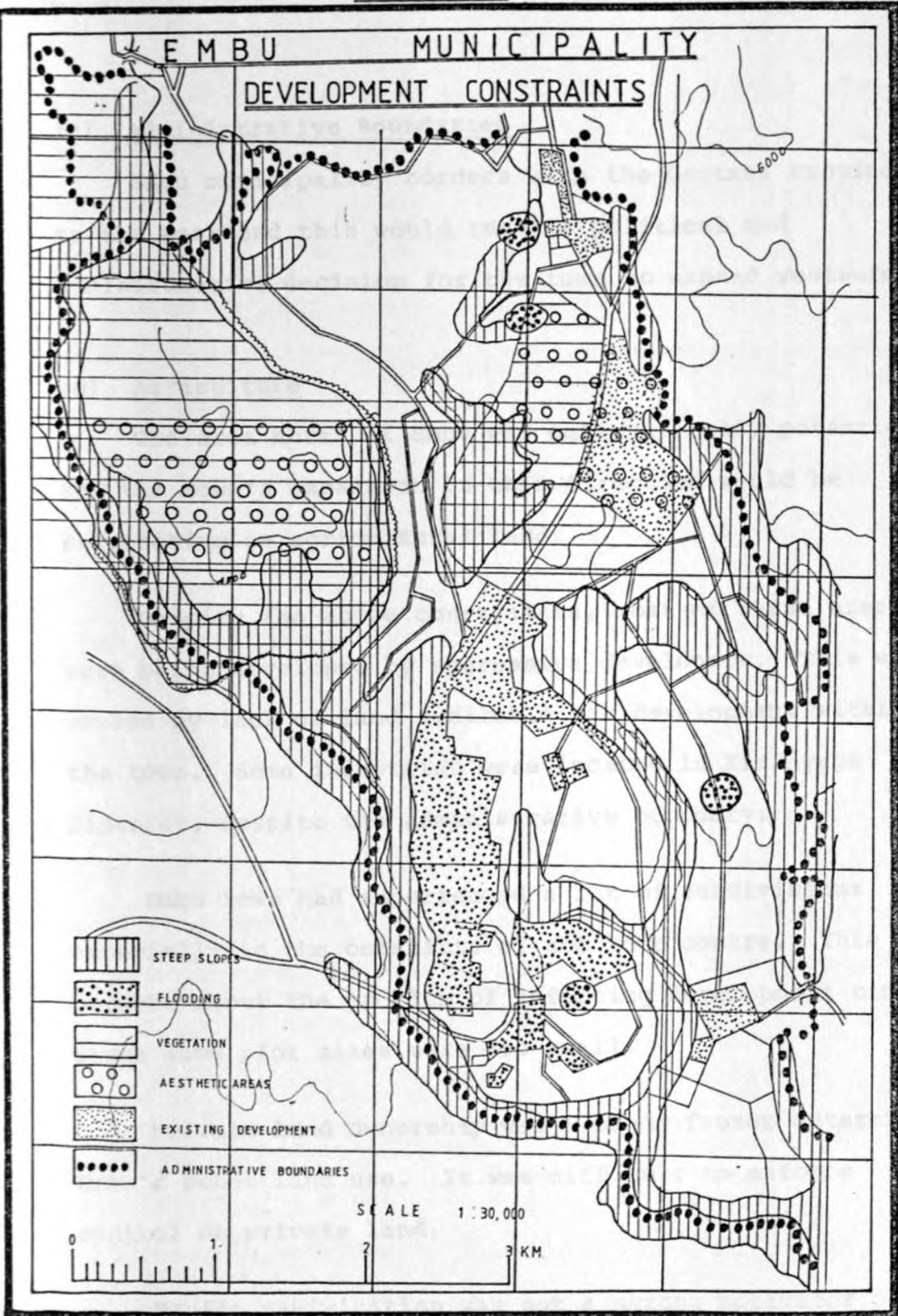
(a) Physical Features

These were characterized by steep slopes and water retention areas. The steep slopes were found along river valleys. These proved very expensive to develop. The water retention areas were liable to flooding.

(b) Existing Development

This consisted of the former Embu township and scattered built up areas forming the existing land use pattern. Recommendation for demolition of some of these structures could only be effected if strict zoning or proper land use pattern was desired.

FIGURE 4.3



Source: Department of Physical Planning, Embu.

(c) Administrative Boundaries

Embu municipality borders with the Central Province to the west and this would require political and administrative decision for the town to expand westwards.

(d) Agriculture

The area north of Embu was agriculturally potential and the town's expansion in this direction would be encroaching on agricultural land.

Despite the above constraints, most of these areas were being developed by aggressive developers. This was caused by lack of land available for development within the town. Some industries were located in Kirinyaga District, despite the administrative boundary.

Embu town had experienced a lot of subdivisions especially in the outskirts of the town centre. This brought about the problem of enforcing development control since some plot sizes were too small.

Private land ownership was a major factor determining Embu's urban land use. It was difficult to enforce control on private land.

Profit maximization was not a strong motivator of location. Most respondents amounting to over 90 per cent felt that plot availability was most important.

Embu town was found to have two contrasting climatic conditions which played a great role in shaping the present land use pattern. The northern direction of the town was cool. This explained why high class residential developments were located there. The southern end, which was hotter, was developed for low income groups. The industrial zone was also located in this hotter zone.

To some considerable degree, developers in Embu town were influenced by zoning regulations. This was particularly evident in the industrial and commercial zone.

Social values and cultural background played a role in land use pattern of Embu. The Waswahilis (a tribe from Kenya's coast), who were generally Muslims, were living together in a slum estate called Muslim. Some of these residents were rich and could afford to stay elsewhere within the town, but their customs and cultural attachment did not allow them. The Asian community also portrayed the same cultural attachment.

Accessibility came out as a strong determinant of Embu's urban land use. This was the reason why developments were taking place along main transport routes. One area that had recently been made accessible through construction of a road by the municipal council was, at the time of the survey, on very high demand.

Rampant subdivisions were taking place in this newly opened area and the land values had shot up within a very short time. The area was located across a river valley and it used to be very difficult to get there.

The survey also revealed that segregation was a vice that was creeping slowly in Embu town. It was difficult to find someone shifting from Spring Valley to Blue Valley. It was essentially high class to be living in the more quiet and exclusive population areas near Kangaru and Kamiu villages. The issue of living at the periphery was slowly catching up with Koi-Mugo and Pine Acres estates.

## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATIONS

#### Conclusions

The study set out to examine the land use patterns existing in the two towns of Meru and Embu and also to find out whether they adhered to the generalized neo-classical theories of urban land use patterns. Secondly, the study sought to examine the factors that had determined the pattern of land use in these towns.

Findings in the two towns portrayed a mixed-up type of land uses. One could not define any coherent and consistent land use patterns in both towns. Land uses were generally conflicting and ad hoc. Land use patterns, therefore, could not be defined as resembling any land use pattern of neo-classical theories, but light imprints of both the radial sector and multiple nuclei models were traceable.

It is acknowledged that whereas land uses found in most urban areas have been classified as:-

- (i) The Central Business District (CBD)
- (ii) The transportation zone
- (iii) The zone of transition
- (iv) The industrial zone
- (v) Low class residential
- (vi) High class residential
- (vii) The commuter zone.

All the above land uses were found active in the two towns, but there were no clear cut boundaries for each land use so as to make each zone appear homogeneous. Land uses in the studied towns were conflicting largely because of poor planning and poor development control. For example, right in the centre of the commercial centre of Embu town was a high class residential estate dominated by persons of Asian origin. In Meru town there was a milk processing plant right in the heart of the commercial centre.

Although there was no clearly defined land use pattern in both towns, traces of Homer Hots Model were evident in both towns. Homer Hoyts Sector Model concentrated on the areal pattern of and shifts in residential locations. Different income groups tended to live in distant areas discernible in terms of sectors of a circle around the city centre.<sup>1</sup> The theory suggested growth within a particular axis of transport took the form of similar types of land use.

A closer examination of Hoyt's characteristics showed that these characteristics were not achieved in the radial growth of the two towns. The first characteristic of Hoyt's Model was that residential areas exhibited a tendency to segregate according to income and social function. This characteristic was to some extent evident in the two towns, although it was difficult to find an area



exclusively occupied by one type of residential class. One found cheap houses in an area supposedly meant to be high class residential and vice-versa. The second characteristic of Hoyts Model was that if prices and rents were taken to indicate qualitative differences in housing, persons in the highest income groups lived in houses commanding the highest prices and rents. These same people were the first to be able to take advantage of new and better standards of housing and new areas of living. These two characteristics were true of the two towns' residents. The fourth characteristic was that the low income areas were located on the opposite side of the Central Business District to high grade housing near concentrations of manufacturing industries. According to zoning regulations, this characteristic was evident in both towns but particularly this was not the case. For example in Meru town, Kinoru area which had the largest number of industries was also the area occupied by the high income residents of Meru town. This was largely because of private land ownership. One found an expensive house/home next to an industry. In Embu this characteristic of Hoyt's Model was partly evident in that high class residential areas tended towards the opposite direction of the industrial and manufacturing zone, but it was also found that the residential houses in the direction of the industrial zone were not low grade as such. The only low income residential users near the industrial zone was that



of the slums of Muslim and Dallas, and most of the residents of Muslim slums were not poor not to afford living in high grade residential areas. They were living in these slums by virtue of their strong religion and cultural attachment.

Meru town also revealed some imprints of multiple nuclei theory. The multiple nuclei theory stipulated most modern cities as having essentially cellular structures in which homogeneous types of land use tended to develop around certain specialized nuclei within an urban area. This was a vice catching up with Meru. Kinoru area was already becoming a nuclear centre with all the land uses of a town.

Although traces of these models could be seen, the factors of this kind of growth were not necessarily the same as those suggested by the models. The theories suggested that economic factors were major determinants of urban land use patterns. The study of Meru and Embu showed that there were other factors, other than economic that determined urban land use patterns. These factors will be discussed below. They include physical environment, poor enforcement of planning regulations, land ownership, colonial government policy, accessibility, land availability and socio-economic values.

(a) Economic Factors

Economic forces had led to a lot of subdivisions of land in the two towns. The objective of land subdivision was to maximize land use. In rapidly urbanizing towns like Meru and Embu, land subdivision occurred because urban land was better used in smaller parcels relative to agricultural use. Agricultural land use was found to be no longer profitable and therefore urban use encroached on it. The survey discovered that the intention behind subdivision of agricultural land in the two towns was:-

- (i) To subdivide the land and sell a portion and remain with the other.
- (ii) To subdivide the land and sell in parts instead of one whole part.
- (iii) To subdivide the land and develop it under different titles.
- (iv) Rapid population growth necessitating expansion of the town and need for more land for housing.
- (v) High land values as the town expanded and encroached on the agricultural area.
- (vi) Land owners feared to own big chunks of land in town in case of compulsory acquisition. This was because owners of big chunks of land were often affected more.

- (vii) Security of tenure in the sense that the more titled deeds the more secure financially one tended to be.
- (viii) Land speculation - the speculator bought the land which he withheld until prices reached a desired level. The crucial issue here was that profits from the increase in land value were pocketed by the speculators. The speculators hindered development or made it more expensive by withholding his land until the price escalated to the desired level.

All the above intentions portrayed an economic motive. The subdivisions were also based on potential value anticipated in urban expansion.

(b) Topography

The topography of both towns was found to be one of the major determinants of land use patterns. Both towns were located on sloping terrain traversed by deep river valleys which acted as constraints of the towns. The topography of both towns was quite difficult giving a big impact on accessibility. This inordinate topography was the major cause of the ribbon type of development characteristic in the two towns. Developers found it easier to develop levelled areas than areas across the valleys hence causing a great demand for land along the

easiest direction of development.

Soils were also found to be greatly influential in determining land use in these towns. For instance, there was a case in Embu town where a certain developer was stopped from developing a residential estate on the grounds that the soils around that area were loose, hence had no safe bearing capacity. At the time of the study, that portion of the town was a bush.

Climatic factors were to some extent a determining factor of land use patterns, especially in Embu. The warmer areas were mainly developed for middle and low income earners while the cooler areas were occupied by the high income groups.

Therefore land use patterns in both towns was not clearly concentric primarily due to the rugged topographic conditions. The valleys and ridges had thus dictated an urban development pattern bearing slight resemblances of multiple nuclei theory connected by roads to the Central Business District.

#### (c) Poor Enforcement of Planning Regulations

Planning regulations restricted holdres of land in urban areas from developing it in an abstract manner. The pattern of development in urban areas ought to be coordinated in order to achieve a systematically zoned

urban complex. The impact of planning regulations on the development of both Meru and Embu towns was insignificant. This was because the enforcing mechanism was very inefficient and to some extent incompetent. Generally, the authorities that could directly effect these regulations were the local authorities and central government office of the Commissioner of Lands. Besides having no knowledge on the aspects of physical planning, the top officials in the local authorities who were also decision makers in their areas of jurisdiction were politically elected to offices. As such, they had their own political interests to protect rather than enhancing good planning policies, so that even where certain developments needed to be rejected, they gave consent, regardless of the planner's views in fear of losing the favour of the developers. Political pressure and corruption were also found to play a role in determining urban land use patterns of the two towns. For example, the Member of Parliament for Igembe, Meru, accused the Mayor of Meru town for constructing a kiosk in a section of Meru town which required planned buildings.<sup>4</sup> Another Member of Parliament also accused greedy individuals of grabbing empty spaces in towns which should be used for recreation facilities.<sup>5</sup> These greedy individuals were definitely powerful political personalities.

In another incident in Nyahururu town, some structures had to be pulled down. As the District Commissioner<sup>6</sup> emphasized, the affected structures were illegal. The laws governing such aspects of land use building plans and public health considerations had been ignored in the subdivisions and the subsequent occupation of the area. The officials of the same municipal council could not explain why they had initially allowed curio shops on a zone they considered riverine area. If all the laws governing land use had been enforced this town would not be facing these problems.

Therefore, it can rightly be concluded that poor enforcement of planning laws coupled with political pressure and corruption determined urban land use a great deal especially in the small urban centres.

Moreover, the local authorities were financially crippled. This left development of the towns in the hands of individuals. This explained why there were no organised residential estates, especially in Meru town. Most private developers were not capable of putting up more than five or ten units - so in the end there were just numerous pockets of different residential dwellings which were difficult to control and define.

(d) Private Land Ownership

It was found that there was a shortage of public land for present expansion and future expansion of the towns. The largest portion of both was under private individual ownership. As such developers and land owners were not bothered to seek consent for the development proposals. Land owners had the confidence that since the land was theirs they could develop it in any way they deemed best. On the other hand, private land owners pressurised the planning authorities to adopt their plans for developing their plots regardless of planning and zoning regulations. In such cases, most of the developments were left to depend largely on the individual owners preferences. Private land ownership had a big impact on land use as was demonstrated by a case in Meru town where a big chunk of land was still vacant. The area had been zoned commercial, but since 1986, the plots had not been allocated due to a court dispute involving the original owners from whom the land was compulsorily acquired.

The biggest problem of private land ownership was that it was very difficult for planning authorities to enforce control on such land.

(e) Colonial Government Policy

This greatly influenced the residential set up of the two towns from the birth of the towns in the beginning of this century up to the beginning of the 1960s. These towns grew up as fortress administrative centres during the colonial period. The administrators, who were generally foreigners lived in cooler vantage point areas of the administrative centres; while the Africans lived in the lower hotter areas of the towns. This aspect of colonial set up was still evident in both towns where the cooler areas, popularly known as Milimani which were formerly occupied by colonial administrators, were at the time of the study occupied by the top government officials and the rich residents of the towns. This added weight to Kingoriah's conclusion that government's influence on land use must be one of the decisive factors which determined patterns that emerged.

(f) Accessibility

Accessibility was found to be a major determinant of land use patterns in both towns. Developers went for areas of easiest accessibility. It was easier to develop level ground than sloping ground. Accessibility was the major reason why both towns were growing linearly. All the major functions were crowded together along main transport routes. For Meru town the easiest direction of growth was towards the flat areas of Kinoru-Kaaga along



Meru-Nanyuki and Meru-Maua roads. For Embu the easiest direction was towards Kangaru on the Embu-Meru road and the Mbeere area on the Embu-Siakago road. The District and Provincial Headquarters in Embu town were being moved towards the Mbeere side which was flat and had more land readily available.

(g) Land Availability

This was the greatest determinant of land use patterns in both towns. It was found that due to population growth in both towns, land had become scarce. Demand for land was derived from both the growth of urban population and increase of land use activities. This demand for land created high land values, and the higher the land value, the more willing the seller was to part with his land. The inference here was that the high land values encouraged land owners to sell their land and if the prices were rocketing, the speculators found an easy money making method. Therefore, it can rightly be concluded that scarcity of land was one of the major causes of the unplanned and uncoordinated land use patterns in both towns. Lack of land for development created land subdivisions, land speculation, private land ownership within the municipality hence making it difficult for the planning authority to control developments. If there was plenty of public land on which developments could easily be controlled by the

planning authorities, the two towns could have achieved better defined patterns of land use.

(h) Socio-Economic Values

Land had a high social value besides its economic value. The study revealed that agricultural land around the two towns was inherited. Land was seen as a status symbol in society. It was seen as a tangible asset and there was social prestige attached to its ownership. It was found that some land owners withheld their land from the market because of psychological satisfaction it gave its owners. In both towns there were owners who were not prepared to part with their land at whatever price. In short, land ownership gave a high feeling of security regardless of the economic value of the land. Thus it was concluded that land use conflicts were a consequence of economic and social forces.

Other factors that were of some influence to ensuing land use patterns in the two towns were customs and culture, social values, tastes and preferences, existing development and availability of facilities such as schools.

It can therefore be concluded that the urban growth of Embu and Meru towns was the cause of land use conflicts where urban land use was competing with agricultural rural land use. The cause of this urban growth was found to be economic and population growth. This rapid growth created

scarcity of land. There was shortage of urban public land in the towns because a larger portion of urban land was under private land ownership. The authority to plan on private land had little legal basis. The peri-urban land was experiencing the greatest conflict. The consequences of land use conflicts and unplanned growth were:-

- (i) ribbon development and urban sprawl
- (ii) land speculation
- (iii) Land subdivision.

Finally, the study of Meru and Embu towns revealed that land use patterns was a consequence of many other factors other than economic, although economic forces played a significant role in shaping land use patterns in the towns. Other factors included: physical environment, accessibility, land availability, land ownership, planning regulations, political pressure and corruption, poor development control, tastes and preferences, Government policy and people's customs and culture.

The survey also brought out the conclusion that it was not appropriate to compare outright land use patterns of Kenyan urban centres with those of the western town models. To support Kingoriah's views, classical land use models only apply by way of analogy and nothing in their neat form can be visible on the East African

economic landscape. Therefore, they should not be applied for any practical purpose in their raw form without extensive examination of their vectors operating over the socio-economic space of these countries.

#### Recommendations

In view of the findings of the major causes of urban land use patterns in Meru and Embu towns, a few recommendations, not only for these towns but also for other small towns, will be made.

It was found that land within these towns was mainly vested in the local authorities and the Government of Kenya. This was effectively the land bank in the towns but which had been severely depleted through alienation to individuals, companies and public bodies such that most of the land was under private ownership held on 33 and 99 years leases. However, no significant efforts have been made to replenish the land bank and there is now comparatively little available land left in public ownership. On the other hand, land that was recently absorbed into the municipalities is in private ownership. In view of the above, it is recommended that the local authorities and the Commissioner of Lands should try to acquire more land for public use. This will not only create more land in the towns but it will also enable greater control of land use in these towns.

Public ownership of urban land and potential urban land will help curb the excesses of the speculative land market. The main set-back towards this approach is the amount of compensation to be paid to the land owners of acquired land. A suitable method of trying to acquire the land without causing conflicts with the owners should be worked out, for instance, involving the land owners in the whole planning process from inception to implementation. Another major problem is creating a land bank as Yahya noted<sup>7</sup> is that there are few authorities which can afford to tie up scarce capital in land that is not likely to be used in the next two to three years.

Further the study found that there were many agencies involved in urban development in these towns. These included the local authorities, the government, the National Housing Corporation and the private developers. It seemed there was no central control of these agencies. It also seemed that there was little consultation between these planning agencies and the Physical Planning Department. Physical planners should be consulted and opinions sought in any spatial location of any development projects. The agencies have been putting up developments wherever land is available in disregard of the Physical Development Plan. Therefore, it is recommended that there should be maximum consultations between the policy implementors and the Physical Planning Department on

matters concerning spatial location of development projects. Such consultations will help to limit the locations of some activities outside areas zoned for them. Moreover, the local authorities and Planning Department should introduce penalties to land users who go against the Physical Development Plan or resort to destroying any non-conforming developments.

There are many statutes dealing with land use planning control but they are in different administrative frameworks. Some of these statutes include: the Land Control Act, Land Acquisition Act, Local Government Regulations, Public Health Act and Town Planning Act. These are under the local authorities and the Commissioner of Lands. There is need to enact a comprehensive legislation dealing with physical planning, for the Town Planning Ordinance is outdated. There is a necessity to revise and consolidate legislations related to urban land use policies. The current three legislations rest the power of control of land use to the Commissioner of Lands and the local authorities. These two agencies cannot effectively control land use in urban areas. The Physical Planning Department is the one directly concerned with the planning of urban land use. Currently this department has no powers to enforce their plans. The urban land policies should be revised so as to give the Physical Planning Department the relevant powers to control

land use in urban areas without necessarily consulting the local authorities or Commissioner of Lands, a process that proved to be ineffective. On the other hand, local authorities dealing with control of land use should be equipped with proper knowledge on all aspects of physical planning.

Lack of proper plan implementation was noted as a main cause of existing land use patterns in Embu and Meru towns. This was coupled with lack of funds. Funds should be made available to ensure efficient implementation.

As noted in the history of Meru and Embu towns, they were located on hilly grounds by the colonial administrators as fortress towns for protective purposes. Today, it should be borne in mind that before citing any town somewhere, careful measures should be taken to avoid location on difficult terrain, as this poses problems of future direction of expansion of the towns.

In short, the recommendations can be stated as:-

- (i) Public ownership of private land which will be needed for urban use is necessary.
- (ii) There is need to reinforce and co-ordinate the existing legislation controlling land use and development.
- (iii) Urban land policies are neglected in physical plans and implementation of urban plans need to be

evaluated in terms of land availability and costs of requisitions.

- (iv) Investments in urban areas, public or private, which have a spatial dimension ought to be co-ordinated and integrated through physical development plans.

All in all, control alone is insufficient to ensure a coherent development process. In particular, it may be foreseen that at least public intervention in the housing sector will be required and for this, land is needed for there is very little land that is readily available for further development.

#### Areas for Further Studies

Further study should be done on how urban development can be integrated so that projects are located according to the Physical Development Plan.

It is also necessary to study the mode of private ownership of land in urban areas of small townships in order to achieve ideals of a rapidly urbanising society.

There is also need to examine more rigorously methods of enforcing development control without inhibiting development initiative.



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APPENDIX I

QUESTIONNAIRE FOR LAND OWNERS AND DEVELOPERS

SECTION A: RESIDENTIAL LAND USE

- 1(a) Interviewer .....
- (b) Respondent .....
- (c) Are you the owner of the plot? Yes ..... No .....
- (d) If yes, what is your educational level?
- (i) Primary
- (ii) Secondary
- (iii) University
- (iv) None at all
- (e) Do you play any significant role in national/civil politics? Yes ..... No .....
- (f) If yes, how? Give applicable answer.
- (i) Area Member of Parliament
- (ii) Town Clerk
- (iii) Mayor
- (iv) Councillor
- (v) KANU Official
- (vi) Other (Specify)
- 2(a) What is the name of the estate? .....
- (b) What is the plot number? .....
- (c) What is the plot size? .....
- (d) What is the plot shape? .....
- (e) What is the approximate number of houses on the plot? .....

2(f) What type of buildings (tick correct answer).

- (i) Flat(s)
- (ii) Maisonette(s)
- (iii) Bungalow
- (iv) Single rooms
- (v) Others (specify)

(g) When was the plot developed? .....

(h) What was the total cost of development? .....

3(a) Is the estate located:

- (i) on formal residential area
- (ii) informal residential area
- (iii) elsewhere.

(b) If located on informal residential area, was the development approved by the town planning authorities? Yes ..... No .....

(c) If yes, were there any problems during the approval process? Yes ..... No .....

(d) If yes, which ones?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....



3(e) If in the formal residential area, did you encounter any problems during approval? Yes .....  
No .....

(f) If yes, which ones?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....

(g) If no, how did you manage to put up the building without official consent? Explain.

.....  
.....  
.....  
.....  
.....

4(a) How did you acquire this land?

- (i) Bought
- (ii) Allocated
- (iii) Inherited

(b) If bought, what was the cost? .....

- (c) Is the land
- (i) Registered
  - (ii) Titled
  - (iii) Surveyed

(d) Is it adequate for your purpose? Yes ..... No .....

4(e) If No, what do you intend to do? Explain.

.....  
.....  
.....

5(a) Why did you choose this type of development and not others like commercial or industrial? Give correct answer.

- (i) It was according to the town plan
- (ii) Area zoned for residential use only
- (iii) For highest returns
- (iv) Site best suited for residential use only
- (v) It was the only affordable kind of development I could get
- (vi) Others (specify)  
.....  
.....  
.....

(b) What factors led you to choose a site on this area?

(Tick correct answer(s))

- (i) It was the only available site
- (ii) Far from town pollution
- (iii) Proximity to town centre
- (iv) Transportation network well developed
- (v) Site was easy to develop
- (vi) Scenic beauty

- 5(b) (vii) I was sure to make maximum profits here
- (viii) Accidental
- (ix) Others (specify).

6(a) Did you have any income group in mind when developing?  
Yes ..... No .....

(b) If yes, which one? (Tick correct answer)

- (i) Low income
- (ii) Middle income
- (iii) High income
- (iv) For my own use.

(c) Has your choice of this location helped you meet  
the above target? Yes ..... No .....

(d) If No, what do you think has caused this problem?

Explain. ....  
.....  
.....

(e) If yes, which of the factor(s) you mentioned in 5(b)  
above has contributed greatly to help you meet your  
target?

.....  
.....  
.....

6(f) If you are developing for your use, what factor was most important in your choice of location?

.....  
.....  
.....

7(a) Give problems, if any, that you encountered on choosing a plot/site for residential development.

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

(b) Do you have plans for another residential development? Yes ..... No .....

(c) If yes, where?

- (i) In the same area as this one
- (ii) Within the town centre
- (iii) Within the outskirts of the town centre
- (iv) Anywhere in the town so long as land is available
- (v) Elsewhere.

8(a) Did the physical environment of this town have any influence on your choice of this state?

Yes ..... No .....

(b) If yes, how did it affect your choice? Explain.

.....  
.....  
.....

(c) Would it also affect you in the future?

Yes ..... No .....

(d) If No, why not?

.....  
.....  
.....

(e) Did the climatic conditions of this town play any role to influence your choice?

Yes ..... No .....

(f) If yes, what climatic conditions did you consider?

.....  
.....  
.....

9(a) Did planning authorities play any role in the development of this estate?

Yes ..... No .....

9(b) If yes, which one?  
.....  
.....  
.....

(c) Did you adhere to the town plan?

Yes ..... No .....

(d) If yes, is there any advantage in adhering to these plans?

Yes ..... No .....

(e) If yes, which one?

.....  
.....

(f) In your future developments, if any, do you feel you should adhere to town plans?

Yes ..... No .....

(g) Explain your answer in (f) above.

.....  
.....  
.....  
.....

(h) In your experience as a developer in this town, do you think other developers adhere strictly to the town plan?

Yes ..... No .....

10(a) As a residential developer, do people's tastes and preferences dictate upon your choice of location and subsequent development

Yes .... No ....

(b) If No, does it mean that people are always ready to take whatever you offer them?

Yes ..... No .....

(c) As a residential developer, are there cases when you develop with people's customs and culture in your mind, such that you are developing for a particular kind of people?

Yes ..... No .....

Explain your answer.

.....  
.....  
.....  
.....

11(a) Before embarking on your choice of site and subsequent development, was accessibility, in terms of roads, travel to work, to town centre, a factor that you considered?

Yes ..... No .....

11(b) If yes, to what extent did it affect your choice of location? Explain.

.....  
.....  
.....  
.....

(c) If No, does it mean you did not care how people would move around to do their daily cores?

Yes ..... No .....

(d) Did you think inaccessibility or accessibility would affect your returns?

Yes ..... No .....

12. What other factors, other than the ones discussed earlier, influenced your choice of location?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

13. What was your main aim in developing residential estate here?

- (i) To make as much money as possible
- (ii) Just wanted to have a kind of investment
- (iii) To cater for a certain income group - high, middle or low.
- (iv) To have a source of income.



APPENDIX II

SECTION B : INDUSTRIAL LAND USE

- 1(a) Interviewer .....
- (b) Respondent .....
- (c) Are you the owner of the firm? Yes ..... No .....
- (d) If yes, what is your educationa level?
  - (i) Primary
  - (ii) Secondary
  - (iii) University
  - (iv) None at all
  - (v) Others (specify)
- (e) Do you play any significant role in national/civil politics? Yes ..... No .....
- (f) If yes, how?
  - (i) Area Member of Parliament
  - (ii) Town Clerk
  - (iii) Mayor
  - (iv) Councillor
  - (v) KANU Official
  - (vi) Other (specify)
- 2(a) What is the name of the firm?  
.....
- (b) Date developed .....
- (c) Total cost of development .....

- 2(d) Type of activity/business .....
- (e) Type of premises .....
- (f) Plot number .....
- (g) Plot shape .....
- (h) Plot size .....
- (i) Total number of employees .....

3(a) How did you acquire this plot?

- (i) Bought
- (ii) Allocated
- (iii) Other (specify)

(b) If the plot was bought, what was the cost?  
KShs. ....

(c) When was it bought? State the year.  
.....

4(a) Is the firm located

- (i) on formal industrial area
- (ii) informal industrial area
- (iii) elsewhere (specify)

(b) Was the development on this location approved by  
town planning authorities? Yes .... No .....

(c) If yes, did you encounter any problems during  
approval process? Yes ..... No .....

4(d) If yes, name them.

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

(e) If No to (b) above, how then did you manage to put up the industry without official consent? Explain.

.....  
.....  
.....

(f) Did you encounter any problems during development as regards development without official consent? Yes .... No ....

(g) If yes, explain.

.....  
.....  
.....

(h) For what reasons was this firm located here?

- (i) Access to markets
- (ii) Anticipation of growth of markets
- (iii) Availability of raw materials
- (iv) Labour availability both skilled and unskilled

- 4(h) (v) Accessibility
- (vi) Availability of power/fuel
- (vii) Adequate supply of water
- (viii) Only available site
- (ix) Adequate disposal facilities
- (x) Proximity to other industries
- (xi) Banking, insurance and other commercial facilities
- (xii) According to town plans and zoning regulations
- (xiii) Personal factors e.g. closer home
- (xiv) Accidental
- (xv) Others (specify)

(i) Which of the above do you consider the most important factor (in order of importance)?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

(j) Would you wish to locate elsewhere?

Yes ..... No .....

(k) If yes, why?

- (i) Location of present site inaccessible to customers
- (ii) To be nearer them main road

- (k) (iii) Closer to raw material
- (iv) Closer to other industries
- (v) Away from other similar industries
- (vi) Closer to markets
- (vii) Other (specify)

(l) What is the biggest disadvantage of having located here? Explain.

.....  
.....  
.....

6(a) Where is your source of raw materials?

- (i) Within the industrial area
- (ii) Away from industrial area but within town
- (iii) Outside the town
- (iv) From other industries
- (v) Imported.

(b) How do you transport your raw materials?

- (i) By lorry
- (ii) By tractor
- (iii) Men (labourers)
- (iv) Wheelbarrows/carts
- (v) Others (specify)

6(c) Are there any problems encountered on transportation of raw materials? Yes .... No ....

(d) If yes, list them.

(i) Too expensive to transport materials from the source of the firm

(ii) Location of firm is inaccessible - hard for motor vehicles to reach there

(iii) Others (specify)

(iv) No problem at all.

7(a) Where do you sell your products?

(i) Within town

(ii) Outside town but within the district

(iii) Within the industrial area

(iv) Nationally

(v) Internationally

(vi) Others (specify).

(b) What is the total transportation cost of both raw and finished products? KShs. .... per annum.

(c) Do you feel these costs could be lower or higher had you located elsewhere? Yes ..... No .....

(d) Do these transport costs affect your turnover? Yes ..... No .....

- 7(e) Had you located elsewhere would your turnover be higher or lower?
- 8(a) What are the sources of water?
- (i) Town Council
  - (ii) Self supplied
  - (iii) Borehole
  - (iv) Others (specify)
- (b) Is the source of water the main factor that led you to locate here? Yes .... No ....
- 9(a) What is the source of power?
- (i) Manual
  - (ii) Electric - Kenya Power and Lighting Company
  - (iii) Water
  - (iv) Generator
  - (v) Others (specify)
- (b) Did you consider the source of power when choosing this site? Yes ..... No .....
- (c) Was power already available when you chose this site or you got it later?

10(a) What is your firm's relationship with other firms?

- (i) Complimentary
- (ii) Competititve
- (iii) Specialization

11(a) Would the firm be moved if:

1. Premises were found elsewhere? Yes .... No ....

Give reasons for your answer

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

2. Plots were allocated elsewhere? Yes .... No ....

Give reasons

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

(b) Has the owner tried to apply for a plot in another centre? Yes ..... No .....

(c) If yes, where?

.....



11(d) Why did you apply for the site in that centre you named above? Explain.

- (i) .....
- (ii) .....
- (iii) .....

12(a) Is the firm to expand? Yes ..... No ....

(b) If yes, where?

- (i) On present site
- (ii) On another site

13(a) Did the physical environment of this town affect your choice of location? Yes ..... No .....

(b) If yes, how did it influence your location?

Explain.

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....

(c) Did climatic conditions such as direction of wind affect your choice of location? Yes .... No ....

(d) If yes, how did they affect your choice?

- .....
- .....
- .....

14(a) Did the planning and zoning regulations affect your choice of location and subsequent development?

Yes ..... No .....

(b) If yes, how did this influence your choice?

Explain.

.....  
.....  
.....

(c) Did you adhere to all the town planning and zoning regulations? Yes ..... No .....

(d) If yes, was it your own advantage? Yes ....

No .....

(e) If no, do you think you could be better off in terms of profits and business turnover, had you not adhered to town plans and located elsewhere?

Yes .... No ....

(f) If yes, how have planning and zoning regulations contributed to the present situation of your industry. Explain.

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.....  
.....  
.....

APPENDIX III

SECTION C : COMMERCIAL LAND USE

- 1 (a) Interviewer .....
- (b) Respondent .....
- (c) Are you the plot owner? Yes ..... No .....
- (d) If yes, what is your education level?
- (i) Primary
  - (ii) Secondary
  - (iii) University
  - (iv) None at all
  - (v) Others (specify)
- (e) Do you play any significant role in national/civil politics? Yes ..... No .....
- If yes, how?
- (i) Area Member of Parliament
  - (ii) Town Clerk
  - (iii) Mayor
  - (iv) Councillor
  - (v) KANU Official
  - (vi) Other (specify)
- 2 (a) Type of business .....
- (b) Type of premises .....

- 2(c) Number of shops/offices as building .....
- (d) Size of plot .....
- (e) Total cost of development .....

3(a) Location of plot

- (i) Formal commercial area (Central Business District)
- (ii) Informal commercial area
- (iii) In the suburban areas of town
- (iv) Other (specify)

(b) If in the Central Business District, which part?

(Tick correct answer)

- (i) Along main highway
- (ii) Back street
- (iii) Corner plot
- (iv) Along road/street junction
- (v) Next to bus station
- (vi) Other (specify)

(c) Are you satisfied with this location?

Yes ..... No .....

(d) If yes, give reasons

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....

- 3(e) If no, what is the major problem? Explain.
  - (i) .....
  - (ii) .....
  - (iii) .....
  - (iv) .....
  
- (f) Would you wish to be located in the suburbs?  
Yes ..... No .....
  
- (g) If yes, give reasons.
  - (i) .....
  - (ii) .....
  - (iii) .....
  - (iv) .....
  
- (h) Was the location and development approved by the town planning authorities? Yes ..... No .....
  
- (i) If yes, did you encounter any problems?  
Yes ..... No .....
  
- (j) If yes, list them down.
  - (i) .....
  - (ii) .....
  - (iii) .....
  - (iv) .....
  - (v) .....

3(k) If no to (h) above, how then did you manage to develop without official consent? Explain.

.....  
.....  
.....  
.....

(l) Was profit maximization one of the reasons why you chose this site and this kind of development?

Yes ..... No .....

(m) If no, why then did you not locate anywhere else in town? Explain.

.....  
.....  
.....  
.....

(n) Do you think your returns (income) would be affected if you moved elsewhere?

Yes ..... No .....

(o) If yes, how? Explain.

.....  
.....  
.....  
.....

4(a) For what reasons was this business located here?

- (i) Site close to the main road
- (ii) It was a corner site
- (iii) Close to other similar businesses
- (iv) Only available site
- (v) Only affordable site
- (vi) Closer to the market/customers
- (vii) Ready market
- (viii) Accessibility - site well served by roads
- (ix) According to town plan and zoning
- (x) Businesses here were doing so well
- (xi) Others (specify)

(b) What would you say was the most important factor(s)?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....

(c) The aim of every businessman is profit maximization.

Has the choice of this location helped you meet this goal? Yes ..... No .....

(d) If no, what are you planning to do to meet this goal?

- (i) Move to another site
- (ii) Change the user
- (iii) Sell the building/business
- (iv) Others (specify)

4(e) Would you move if:

(i) Premises plot were found elsewhere?

Yes ..... No .....

(f) If yes, give reasons for your answer.

(i) .....

(ii) .....

(iii) .....

(iv) .....

(g) Have you tried to apply for space elsewhere?

Yes ..... No .....

(h) If yes, where? .....

5(a) Do you own other commercial plots in the town?

Yes ..... No .....

(b) If yes, where?

(i) In the Central Business District

(ii) In the outskirts of the Central Business District

(iii) In the suburban areas of the town

(iv) Within the municipality

(c) What factors led you to choose a site in the area mentioned above?

(i) .....

(ii) .....

(iii) .....



- 5 (c) (iv) .....
- (v) .....

6 (a) Have planning and zoning regulations influenced you in any ways in your choice of this plot?

Yes ..... No .....

(b) If yes, how? Explain.

.....  
.....  
.....

7 (a) Is there any personal relationship between you and your neighbour (owner of the neighbouring plot)?

Yes ..... No .....

(b) If yes, which one?

- (i) Relative
- (ii) Same clan
- (iii) Same religion
- (iv) Come from the same area
- (v) Belong to the same club
- (vi) Others (specify).

(c) Did any of the relationships above influence you in your choice of this plot? Yes ..... No .....

(d) If yes, explain how it influenced you.

.....  
.....

APPENDIX IV

QUESTIONNAIRE FOR PLANNING AUTHORITIES

- 1 (a) Interviewer .....
- (b) Respondent .....
- (c) Designation of respondent .....
- (d) Date of interview .....
  
- 2 (a) What is the status of this town? (Tick correct answer).
  - (i) Municipal Council
  - (ii) Town Council
- (b) When did it acquire this status? State the year.  
.....
  
- 3 (a) Does this town have a town plan?  
Yes ..... No .....
- (b) If yes, when was the first town plan drawn?  
.....
- (c) Is that plan still in use today?  
Yes ..... No .....
- (d) If no, when was it amended?  
.....
  
- 4 (a) Does the plan specify which areas are to be developed for residential, commercial and industrial, recreational and other public purpose uses?  
Yes ..... No .....

4(b) If yes, does it also specify which areas are to be developed for high income, medium income and low income residential? Yes ..... No .....

(c) Do developers consult the planning authorities before putting up new developments?  
Yes ..... No .....

(d) If yes, how do planning authorities ensure that such developers are in adherence to the town plans?  
Explain.

.....  
.....  
.....  
.....

(e) If for instance a certain developer's wish is in conflict with that of the planning regulations, what measures do you take to ensure that such a developer develops according to the town plan?  
Explain.

.....  
.....  
.....  
.....

4 (f) Are there cases where developments have not adhered to the town plan?      Yes .....      No .....

(g) If yes, name which areas the plan has not been adhered to.

(i) .....  
.....

(ii) .....  
.....

(iii) .....  
.....

(iv) .....  
.....

(h) With whose approval are such developments carried out?

.....

(i) Do you encourage such developments?

Yes .....      No .....

(j) If yes, under what circumstances? Explain.

.....  
.....  
.....  
.....  
.....

4(k) Which of the following factors do you think have led to the plan not being taken strictly? Tick against the factor you think is applicable).

- (i) Physical environment - topography, climate, soils .....
- (ii) Accessibility (poor) .....
- (iii) Land ownership and subdivision practices ...
- (iv) Land allocation practices .....
- (v) Social tastes and preferences .....
- (vi) Land values (high) .....
- (vii) Customs and cultural backgrounds .....
- (viii) Planning authorities not strict .....
- (ix) Poor implementation of plans .....
- (x) Economic reasons - highest and best use mechanism .....
- (xi) Others (specify) .....
- .....

(l) What are the planning authorities doing to curb this problem of land use developments not adhering to plan? Explain.

.....  
.....  
.....  
.....  
.....

4 (m) What problems are encountered? Explain.

.....  
.....  
.....  
.....

5 (a) Is there a particular region of the town where people tend to prefer to locate more than others?

Yes ..... No .....

(b) If yes, which one(s)?

- (i) .....
- (ii) .....
- (iii) .....

(c) For what reasons do you think this area(s) is more favourable? (Tick whichever is applicable).

- (i) Favourable business conditions .....
- (ii) Well developed road network .....
- (iii) Availability of services such as water, electricity, telephones .....
- (iv) Well developed facilities such as schools, markets, hospitals .....
- (v) Near working places .....
- (vi) Availability of recreational facilities .....
- (vi) Economic reasons, e.g. cheap rents, low transport costs .....

5 (c) (viii) Others (specify).

.....  
.....  
.....

(d) As the town grows are people and activities tending to move out of the above area?

Yes ..... No .....

(e) If yes, where are they tending to move towards?  
Explain.

.....  
.....  
.....

(f) Are there any reasons for this tendency?

Yes ..... No .....

(g) If yes, name them.

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

6 (a) Population growth is one of the major problems in urban land use control. How has population growth in this town influenced land use? Explain.

.....  
.....  
.....  
.....  
.....

(b) Is land subdivision in the suburban areas as a result of population growth? Yes ..... No .....

(c) Has population growth in any way been the cause of encroachment on agricultural land in the periphery of the town? Yes ..... No .....

(d) If no, what has caused this encroachment?

Give factors.

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

7(a) Are there areas in the town where identical units and similar units tend to concentrate?

Yes ..... No .....



7(b) If yes, is this according to plan or is it accidental?

.....  
.....  
.....  
.....

(c) Does population of this town sort itself out into distinctive areas? That is, are there areas occupied by Merus only, Luos only, rich people, poor people, etc? Yes ..... No .....

(d) Are there areas where only people of one religion, custom group together? Yes ..... No .....

(e) Have there been cases where one population group or one type of land use has finally been replaced by another? Yes ..... No .....

8(a) Do social tastes and preferences such as political opinion, playing fields, golf courses, have any bearing on the present structure of the town? Yes ..... No .....

(b) Social tastes and preferences may prevent land from changing use to highest and best use. Have there been such experiences in this town? Yes ..... No .....

8 (c) If yes, specify such areas.

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....

9 (a) This town is a product of colonial administration. Whose land use patterns were racially determined, hence there were areas for Africans, Asians and Europeans? Has this land any impact on present land use patterns?

Yes ..... No .....

(b) If yes, to what extent? Explain.

- .....
- .....
- .....
- .....
- .....

(c) Have the planning authorities used the same trend in designating residential areas for low, middle and high income populations? Yes ..... No .....

(d) If no, what are the differences? Explain.

- .....
- .....
- .....
- .....

9(e) In the colonial days land for various uses was set aside and was filled up later when these uses came into existence. Have the town plans of today, especially in this town, also adopted the same style? Yes ..... No .....

10(a) Are there any physical handicaps or constraints in this town? Yes ..... No .....

(b) If yes, name them.

(i) .....

(ii) .....

(iii) .....

(iv) .....

(v) .....

(c) Have these handicaps affected land use in any way? Yes ..... No .....

(d) If yes, we can say that these handicaps affect the land users choice on where to locate his activity? Yes ..... No .....

(e) Does the location of this township also affect the land user's choice on where to locate his activity? Yes ..... No .....

11(a) Are climatic factors the same in the whole town? Yes ..... No .....

11(b) If no, what are the different climatic factors?

Name them.

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....

(c) Have these climatic factors influenced the land users' choice of location?      Yes .....      No .....

(d) If yes, give specific areas where climatic factors have influenced land users choice of location.

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....

12(a) Has land ownership affected urban land use development and subsequent land use patterns?

Yes .....      No .....

(b) If yes, specify.

.....  
.....

13(a) As the town population grows the town also expands. Do you have any model showing the direction the town is expanding?      Yes .....      No .....

13(b) If yes, is the expansion of the town following one direction or is it taking place in all directions? Explain.

.....  
.....  
.....

(c) If the town is expanding in one direction or along a specific area, why do you think this is the case? (Tick applicable answer).

- (i) Accessibility
- (ii) Transportation system well developed
- (iii) Land availability
- (iv) Land values low
- (v) No physical handicaps
- (vi) Closer to schools
- (vii) Others (specify)

14(a) What factors do you consider when zoning an area for:

1. Commercial purposes?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

2. Residential purposes?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

3. Industrial purposes?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

4. Recreational purposes?

- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (v) .....

15(a) Are you aware of the neo-classical theories of urban land use patterns? Yes ..... No .....

(b) If yes, do you think these can be used to explain what is happening as far as land use patterns of this town are concerned? Yes ..... No .....

15(c) If yes, to what extent? Explain.

.....  
.....  
.....  
.....

(d) If no, can you rightly conclude that they are not applicable in small towns like this one?

Yes ..... No .....

Explain your answer above.

.....  
.....  
.....  
.....