

THE RELATIONSHIP BETWEEN INDUSTRIAL
SITE LOCATION AND EMPLOYEES PLACE
OF RESIDENCE.

A CASE STUDY OF KAMPALA

BY

BYARUGABA - SENDERE^c B.Sc. (Hons.)

A THESIS SUBMITTED IN PART
OF FULFILMENT FOR A MASTER'S
DEGREE IN URBAN AND REGIONAL
PLANNING, PLANNING DEPARTMENT
FACULTY OF ARCHITECTURE, DESIGN
AND DEVELOPMENT
UNIVERSITY OF NAIROBI.



June, 1980

UNIVERSITY OF NAIROBI
LIBRARY

This Thesis is my original work and has not been presented for a degree in any other University.

Signature of the Author *Byarugaba Sendere*.....
Byarugaba-Sendere

This Thesis has been submitted for examination with my approval as a University Supervisor.

Signature of the Supervisor
D. Kabagambe

ACKNOWLEDGEMENTS:

Thanks are due to many people, Ministries and Organisations for assisting me while undertaking this study.

First to Dr. Okulo-Epaka, who first inspired to me the idea of undertaking the study. To Dennis Kabagambe, whose efforts, ideas, suggestions and criticisms guided me throughout the course of the study.

I am also indebted to members of Staff of the Department of Urban and Regional Planning as well as my fellow colleagues in the same Department for their constructive suggestions.

Most importantly, I am grateful to Commonwealth Fund for Technical Cooperation (C F T C), without whose Financial aid the study could not have been undertaken.

Byarugaba - Sendere

University of Nairobi

June 1980.

ABSTRACT:

Industrial sites and residential areas are major land-uses in any urban setting. Industrial sites do bear a lot of relationship within themselves as well as with other urban land-uses. The relationship between industrial sites & residential areas is particularly important in terms of where industrial employees will stay. Secondly, the location of an industrial site near a residential area may imply or result into a lot of environmental hazards depending on the type of industrial activities taking place there.

The view amongst Planners like Ebenezer Howard has been that industrial sites should be located as far apart as possible from residential areas so as to minimise environmental nuisances such as noise, smoke or smell. At the same time, some planners have advocated that there should be a relationship between industrial sites and industrial employees' place of residence, so as to minimise journey to work.

In this thesis, an attempt is made to establish the factors or forces behind the existing location of industrial sites and the location of residential areas with particular emphasis on industrial employees' place of residence, the Government's role in providing institutional houses for low-income group, most of whom are industrial employees, the impact of industrial activities on to the neighbouring residential areas, and how the journey to work influences the choice of place of residence for the industrial employees in Kampala.

Data obtained indicates that industrial employees in Kampala do not actually live near their place of work, that there is little provision by the Government for low-cost housing which can be afforded by industrial employees, and that most of the low-income housing is provided by the private sector.

(IV)

In view of these findings, it is proposed that there is need for Government to embark on a housing programme for the low-income group as this would certainly cater for the industrial employees, that such a programme should be supplemented by intensification of public transport services not only within industrial areas themselves, but also between industrial areas and industrial employees' places of residence; that there is need to set up industrial employees' trade unions to take care of their interests. Finally, that there is need to revise and modify the present industrial location policy for future planning purposes.

This Thesis is dedicated to my
Father and Mother
who have never forgotten me in
their daily prayers.

This Thesis is dedicated to my
Father and Mother
who have never forgotten me in
their daily prayers.

TABLE OF CONTENTS

	Page No.
CHAPTER I: INTRODUCTION	
1: 0 Introduction	1
1: 1 Statement of the Problem	2
1: 2 Area of Study	2
1: 3 Significance of the Problem	3
1:3:1 Land Tenure System	4
1:3:2 Housing Problem in Kampala	6
1:3:3 Transport Problem in Kampala.	10
1:3:4 Health/Environmental Hazards	12
1:4 Objectives	13
1:5 Definition of Terms Used.	15
1:6 Assumptions	16
1:7 Methodology	16
1:8 Format	18
1:9 Limitation to the Study.	19
CHAPTER II: PLANNING FOR INDUSTRIAL LOCATION AND RELATED LITERATURE:	
2: 0 Introduction	20
2: 1 Relationship Between Industrial Location and Residential areas.	21 ✓
2:1:1 The Multi-nucleated Centre Theory.	22
2:2 Significance of the Journey to Work	22 ✓
2:3 Environmental Pollution and Its Relevance to Industrial Location.	23
2:3:1 Health Environmental Implications of Noise	24
2:3:2 Effects of Toxic Waste Products from Industrial Activities.	25
2: 4 Congestion on Roads Serving Industrial Areas.	26

CHAPTER III: BACKGROUND TO STUDY AREA.	Page No.
3: 1 Introduction	28
3:1:1 Physical	28
3:1:3 Climate	29
3:1:4 Economic	29
3:1:5 Population	29
3:1:6 Employment	30
3: 2 Location of Industrial Sites	32
3:2:1 Industrial Location Theory	32
3:2:2 Existing Situation in Kampala	35
3:2:3 Factors of Location of Existing Industrial Sites	37
3: 3 Location of Residential Areas	40
3:3:1 Background to Residential Location Theories.	41
3:3:2 Factors Behind the Existing Location of Residential Areas in Kampala.	43
CHAPTER IV: FINDINGS AND PROBLEM IDENTIFICATION	
4: 0 Introduction	46
4: 11 Type of Accommodation for the Employee.	46
4: 12 Place of Residence in Relation to Place of Work.	47
4: 13 Mode of Travel	49
4: 14 Cost of Journey to Work	51
4: 15 Duration of Journey to Work.	12
4: 16 Congestion Problems	54
4: 17 Other Sources of Income	54
4: 18 Type of Industrial Activities	55
4: 19 Industrial Wastes and Their Impact on the Environment.	56
4: 20 Noise and Smell.	57
4: 21 Summary.	57

CHAPTER V: PRESENT POLICIES AND PROPOSALS:		Page No.
5: 0	Introduction	59
5: 1	Industrial Policy	60
5: 2	Planning Approach to Industrial Location Policy	62
5: 3	Proposals for Kampala Industrial Area and Its Environs.	65
5: 4	Housing Policy	67
5:4:1	Observations	68
5: 5	Planning Approach to Housing Policy.	91
SUMMARY AND CONCLUSION		91

M A P S

	Page No.
1. LOCATION OF KAMPALA (NATIONAL CONTEXT)	3
2. LAND-USE	7
3. LAND-TENURE	9
4. CHANGES IN BOUNDRIES FOR KAMPALA	12
5. LOCATION OF MAJOR INDUSTRIAL AREAS	36
6. LOCATION OF MAJOR INDUSTRIAL AREAS IN RELATIONSHIP TO HIGH, MEDIUM HIGH.RESIDENTIAL AREAS.	50
7. RELIEF AND DRAINAGE	51
8. EXISTING BUS ROUTES IN KAMPALA	53
9. LOCATION OF CASE STUDY AREA.	55
10. CASE STUDY AREA.	55
11. EXISTING LAND USES AROUND CASE STUDY AREA.	(Back pocket)
12. PROBLEM AREAS	(Back pocket)
13. INDUSTRIAL AREAS WHOSE DETAILED LAYOUTS TO BE PREPARED.	61
14. PROPOSALS.	(Back pocket)

	<u>FIGURES</u>	Page No.
1.	POPULATION ESTIMATES FOR KAMPALA	6
2.	RAINFALL AND TEMPERATURE FOR KAMPALA	29
3.	EMPLOYMENT BY SECTOR IN KAMPALA (1966)	31
4.	TYPES OF ACCOMMODATION FOR INDUSTRIAL EMPLOYEES	47
5.	MODE OF TRAVEL VIS-A-VIZ DISTANCES TRAVELLED	51
6.	MODE OF TRAVEL	60
7.	RENT DIFFERENTIALS	54
8.	DURATION OF JOURNEY TO WORK.	57

o
PLATES

1.	PETROL TANKS IN KAMPALA INDUSTRIAL AREA)	
2.	KIBULI AREA - LOW-COST, UNPLANNED HOUSING)	7
3.	KIBIIRA ROAD IN KAMPALA INDUSTRIAL AREA)	
	(Now Impassable))	
)	58
4.	COFFEE MARKETING BOARD INDUSTRIAL COMPLEX)	
5.	OPEN-DUMPING IN KAMPALA INDUSTRIAL AREA)	
6.	NAKIVUBO CHANNEL)	58
)	
7.	BUFFER ZONE AROUND KAMPALA INDUSTRIAL AREA.)	
8.	CONGESTION ON SEVENTH STREET.)	65
)	
9.	SOME OF THE INDUSTRIAL ESTABLISHMENTS IN)	
	KAMPALA INDUSTRIAL AREA.)	40
10.	JINJA ROAD, ALSO SERVES KAMPALA INDUSTRIAL AREA.)	

TABLES

	Page No.
1. SUMMARY OF LAND TENURE SYSTEMS	6
2. ESTIMATED AND ACTUAL EMPLOYMENT IN THE INDUSTRIAL SECTOR (1971 - 1976)	31 39
3. LOCATION OF INDUSTRIES IN MAJOR TOWNS (1973 - 1976)	46
4. TYPE OF ACCOMMODATION	
5. RENT COMPARISON IN VARIOUS RESIDENTIAL AREAS	48
6. DISTANCES TRAVELLED VIS-A-VIZ MODE OF TRAVEL	50
7. INCOME LEVELS	51
8. COST OF JOURNEY TO WORK	52
9. PLACES OF RESIDENCES FOR EMPLOYEES IN KAMPALA INDUSTRIAL AREA.	53
10. DURATION OF JOURNEY TO WORK.	53
11. OTHER SOURCES OF INCOME	54
12. TYPES OF INDUSTRIAL ACTIVITIES	56
13. TYPES OF INDUSTRIAL WASTES	57

Appendix

N.B. The pages for Maps, Figures and Plates are not numbered.
 The page numbers shown here are those in the text pre-
 ceeding the Maps, Figures and Plates.

CHAPTER I

INTRODUCTION

1:0 INTRODUCTION

During the last 50 years, some towns in Uganda have grown both in terms of population and in area. As a result of this dual growth, a number of social and economic problems have arisen. Such problems include shortage of housing facilities, inadequate transport facilities and inadequate employment opportunities. Kampala City, is a prime example depicting these processes of change and reflecting a number of these problems.

The study sets out to examine the relationship between location of Industrial sites and employees' place of residence, in view of assessing the problems associated with their existing locations. In most cities, industries constitute a big component of the economic base and their locational requirements may be of specialised nature.¹

Furthermore, Industrial establishments do have a lot of complex linkages within themselves. They also have a big influence on the transportation system of the city. Consequently, location of any industrial site in any city becomes automatically related to all other forms of Urban land use, and in particular to the concentration of employment labour force².

As a result of this intricate relationship between industrial location and employees' place of residence, their location should involve the process of proper site selection in accordance with their own requirements.

1 Claire, W.H. (Editor) 1973 Handbook on Urban Planning. Chapter 7

2 Claire, W.H. Ibid Page 127

1:1 STATEMENT OF THE PROBLEM

The development and future growth of Kampala city cannot be assessed in isolation of a number of factors. Some of these factors have acted as constraints to the growth of the city, while some have cropped up as problems as the city grows.

These are mainly:-

1. The existing land-tenure system in Kampala which dictates the direction of growth of the city. It is therefore, a constraint.
2. Lack of adequate resources which is also a constraint to the development of the city.
- ✓ 3. Inadequate provision of services and infrastructure which is reflected in a number of instances such as shortage of housing facilities particularly for the low income.
- ✓ 4. Transportation problems which are a result of shortage of public transport as well as the existing road network.
- ✓ 5. Finally, the problem of unplanned development. This has been a result of extending of the boundaries of Kampala city, thus engulfing areas which were hitherto unplanned.

(see Map No. 4)

All these factors affect the growth and development of the city in every aspect and therefore, special attention ought to be paid to them in the course of planning for the city.

1:2 AREA OF STUDY

Kampala is the capital of Uganda with an area of 175 square Kilometres³. The city had a population of 330,000 people according to the 1969 census. By 1969, the city was growing at a population growth rate of 7.7% per annum

3 Kampala Development Plan (1972)
Government Printer, Entebbe

According to projections, it was estimated that Kampala city would have a population of 500,000 people by 1979. In 1969, it was noted that 22% of the city's total number of employees were working in the major industrial areas⁴.

Due to the large size of the city, the authour had to restrict himself to one Industrial area of the city for purposes of examining the relationship between industrial location and employees' place of residence.

Kampala Industrial area (see Map No. 10) was taken as the case study. This is the main industrial area in the whole city, purposely zoned for industrial activities. Several facilities such as railway sidings and sewage^{ra} have been provided so as to promote industrial activities. It covers an area of 400 acres.

Secondly, Kampala Industrial area is adjacent to several residential areas of various grades (high-class, medium-class and low-class) residential areas. This therefore, provided the authour with an opportunity to examine the relationship between an Industrial area with residential sites of various grades.

1:3 SIGNIFICANCE OF THE PROBLEM

In undertaking this study, it is necessary to examine the significance of the problem and how it is related to location of Industrial sites and residential areas.

⁴ Kampala Development Plan Ibid Page 15

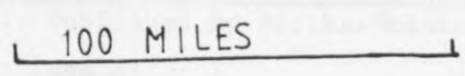
KAMPALA CITY NATIONAL CONTEXT



LEGEND

- MAIN ROADS
- RAILWAY
- INTERNATIONAL BOUNDARY
- WATER

SCALE



MAP NO

1

BYARUGABA SENDERE
 DEPT OF URBAN AND REGIONAL PLANNING
 MAP PLANNING 1970/80

Source: Town Planning Dept, Uganda

1:3 1. Land Tenure System in Kampala

The present land tenure system in Kampala city is based on the 1900 agreement, when the division of land between Baganda chiefs, religious institutions and the Government brought into being Mailo-land, Freehold and Public land tenure system⁵. Further changes took place in 1966 and all the official Mailo land was converted to Public land⁶. (See Map No. 3).

In 1975, the "Land Reform Decree" was declared⁷, but still there were some problems as far as development of privately owned land was concerned. The private mailo land owners continued to use their land in traditional way to the extent that they still continued to bury their dead on the plots of land rather than in the cemeteries. This will of course cause a lot of problems and rows when such land has to be developed for residential or any other purpose.

The following is a summary of the major land-tenure systems in the city of Kampala:-

- (i) Freehold - According to the 1900 Agreement, such freehold land was vested in the hands of the main religious institutions, the small churches and schools in the predominantly private mailo land and to Makerere University, which is the highest institution of learning. In most cases, freehold land is well utilised and above all it provides services to the people.

-
- 5 Land-policy, Kampala Master Plan (1970).
A document by Ministry of Lands and Surveys (Unpublished)
 - 6 West, W.H. (1969) The Transformation of land-tenure in Buganda since 1896. Published by Afrika-Studiecentrum, Cambridge University. Page 87
 - 7 Land Reform Decree (1975) Government Printer Entebbe in theory, Government is supposed to have overall control on land, although this is not so in practice.

- (ii) Private Mailo-land - This takes about half of Kampala's total land area, that is about 49%. This land includes:-
- (a) The high-density low income residential areas near the edges of the central business district, such as Kisenyi, Wandegeye and Kibuli.
 - (b) More than 90% of all the land in the Northern parts of the city is private mailo land.
 - (c) Almost half of the land in the Southern parts of the city is private mailo land.

The inherent problem with private mailo land as far as development of the city is concerned, is that this land has been divided into small unsurveyed plots and in a haphazard manner. Consequently, control of development is almost impossible. This complicates development because it makes it difficult to provide infrastructure and other social services. Secondly, acquisition of private mailo land is a complicated process which involves legal and fiscal considerations. Thus, while Government may be thinking of providing low-income housing on privately owned land, it has to take into account the compensatory expenses involved.

- (iii) Public land includes Government land, leasehold and public land.
- (a) Government land is land which is strictly set aside for Government offices and staff housing.
 - (b) Leasehold land accounts for 4% of the total land in Kampala city. It includes most of the valuable land such as the central business district, the Kampala Industrial area and some residential areas in Nakasero, Bugolobi and Golf Course.

The problem arising here is that it becomes difficult to increase rents despite the fact that land values are constantly rising mainly because of the traditional long lease periods.

Secondly, the payment of premium in form of instalments means that little money is available for provision of services, thus retarding the installation of more services.

- (c) Public land - This is land which was former Kabaka's (King of Buganda) land. Most of this land has now been transferred to Kampala city council.

It is important to note here that as a result of these various forms of land tenure, development has been constrained and will be constrained, particularly so in areas which are under private tenure systems.

SUMMARY OF LAND-TENURE SYSTEMS:

	AREA (Hact)	%
Freehold Land	1323	7
Public Land	7860	44
Private Mailo-Land	8831	49
(TOTAL)	1,8014*	100

TABLE 1

Source: Ministry of Lands and Surveys, Kampala

* This area doesn't include open water.

1:3 2. Housing Problem in Kampala

The housing problems in Kampala are basically related to the high rate of population growth, particularly as a result of the rural-urban migrations⁸.

8 Kampala Development Plan. op cit. The city was growing at a population growth rate of 7.7% per annum. It was not possible to conduct a census in 1979 because of the war. The latest population figures available were those of 1969 census. The results for the 1980 census were not available at the time of writing.

POPULATION PROJECTION FOR KAMPALA

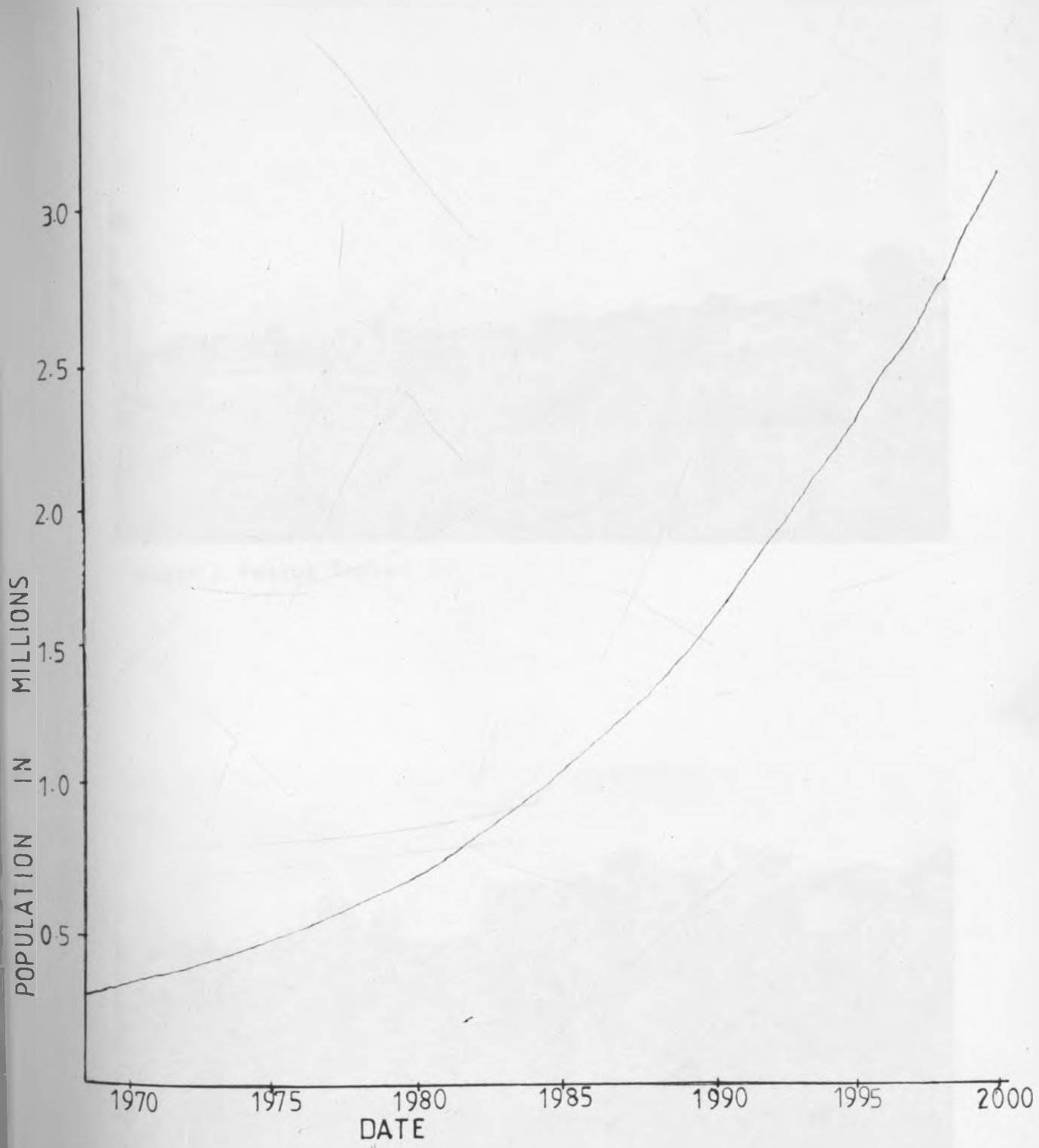


FIGURE NO 1

Source: Kampala Development Plan, 1972
Projections by Ministry of Planning and economic
Development.



PLATE 1 Petrol Tanks



PLATE 2 Kibuli Area. Unplanned Development

- (i) The major problems to be considered as far as housing in Kampala is concerned, is that the rate of population growth in Kampala is twice that of the National annual growth rate and in most cases, the problems related to such high rates are imminent in terms of provision of services such as housing, particularly for the low-income who constitute 80% of the city's population.
- (ii) Secondly, the land tenure system in the city of Kampala is yet one of the root causes of the housing problems. As already mentioned, 49% of the total land in Kampala is under private ownership and the problems involved in developing such land for public benefit are reflected in the compensatory expenses.
- (iii) Fiscal and physical problems - These are basically related to the actual cost and ownership of a house in Kampala because the cost of a house involves:-
 - (a) The premium paid to secure the land.
 - (b) The cost of the house itself.
 - (c) Other costs, such as ground rents and rates.
 - (d) Lack of a loaning system for purchase of houses for low-income people.

As a result of the present high rate of inflation the cost of building materials has continued to sky-rocket and hence, it makes it difficult for people, especially the low-income group to make enough savings to invest in housing.

- (iv) The social-economic change has sparked off a number of problems in housing not only in Kampala but even in other towns of the country. The Africans during the colonial era were regarded more or less as temporary inhabitants of these towns, where they worked as unskilled labour. The Africans were thus living on the outskirts of the town, such as Kibuli, Kisenyi and Wabigalo. These are some of the areas which constitute slum areas in Kampala (See Plate No.)

(v) System of allocation of housing and the general decline in the building industry. Basically, public housing in Kampala follows under the following categories:-

- (a) Government houses which are strictly for public officers.
- (b) Parastatal bodies which mainly cater for their employees.
- (c) City Council housing which is supposed to cater for the general public.

Yet, all these agencies have not satisfied the housing needs of Kampala due to the factor that all of them except the private sector, have added little to the pre-independence stock of houses. This is largely due to the general breakdown in the building/construction Industry. Thus, in 1967, there was an estimated number of 94,000 households, based on a household size of 3.5 people. In the same year, there were only 30,000 household dwelling units. This meant a deficit of 64,000 dwelling units.

The biggest inherent problem now as far as housing is concerned is that there is little provision for housing for the low-income people. Consequently, the private land-lord has taken advantage of this situation by constructing blocks of rooms on their plots of land, mainly for renting for the low-income people. It is important to note here that the private sector has played a significant role in provision of low-income housing despite the low-standards.

Growth of Slums

Slums in general have been associated with a number of factors ^{viz} 9.

- (a) The general low-standards of dwelling units structurally and materially.
- (b) The amount of over-crowding in living rooms .
- (c) Poor sanitary conditions .
- (d) Low density housing which may be unplanned and sometimes unserviced.
- (e) Any residential areas within which psychological and social degeneration are rampant.

Despite all these problems, slums in urban areas continue to provide housing at low cost rents which the urban low-income (who constitute 80% of Kampala's population) can afford.

The growth of slum is a problem related to land-tenure practices, but even more so to the fact that initially, most of the slum areas in Kampala were not included in the urban planning area until 1968. (See Map No. 4). Since 1902, the administrative boundaries of Kampala have been changing constantly. By 1968, the boundaries of Kampala had been extended to cover an area of 175 square kilometres. Most of this area is characterised by unplanned development.

Kibuli - An Example of a Slum

This area depicts a good image of unplanned high-density residential area. This is an area that is directly south and contiguous with the Kampala Industrial area. (See Map No. 11) Most of this area constitutes of unplanned housing.

(See Plate No. 2) The density of population within Kibuli area varies. Similarly, the quality of housing in the area also varies. Some of the houses are in permanent materials while others are not ¹⁰.

9 Housing policy in Uganda. A document by Ministry of Housing and Public Buildings. 1978 (Unpublished) Page 23.

10 Solzbacher, R. The Slum Problem. Seminar papers on Housing problems in Uganda. Published by Milton Obote Foundation (1969)

Reasons for the Growth of Kibuli

There are very many reasons for the growth of this area but basically, they can be categorised as economic, social and unplanned development.

- (a) Firstly, the area is located within easy walking distance to many places of work, especially to the Kampala Industrial area, as well as the city centre. Transport expenses are thus eliminated.
- (b) This is a comparatively an area of low-cost housing. Consequently, migrant employees who think of Kampala as temporary home find this area as a suitable alternative. Research conducted in this area indicates¹¹ that most of the people living there would rather have their money invested in housing at home where the structure is owned and serves as a source of security.
- (c) Many migrants do come to Kibuli area initially because they may have relatives there. Then, they will stay with their relatives while looking for employment but may finally get their own accomodation in the same area.

1:3 : 3. Transport Problem in Kampala

The problem of transport in Kampala is threefold in character. It is related to the routing system as well as the general shortage of public transport in terms of the number of buses. Thirdly, the problem of transport is characterised by congestion along some of the roads in the city. At the moment, shortage of public transport is the biggest problem facing Kampala residents. For example, there are only two buses serving the Kampala Industrial area. (See Map No. 11).

11 Solzbacher, R. Ibid

It is important to note here that these two buses do not adequately serve the whole of Kampala Industrial area. Consequently, most of the southern part of this Industrial area remains unserved, except by the 'Matatus' which charge more than buses¹².

Most of these matatus operate from the city centre along seventh street and along Old Port Bell road in the Kampala Industrial area. (See Map No. 11).

The second problem has been mainly due to the shortage of vehicles as far as public transport is concerned. The Uganda Transport Company (UTC), which was the main transport company charged with the responsibility of catering for the general public had more or less come to a standstill during the eight years of Military rule.

There is also a problem of congestion along some of the roads. This problem is expected to intensify in future. It is estimated that by the year 2000 AD, there will be 1.5 million people living in Kampala. (Figure 1). It was also expected that the economic growth of the city would put a higher population on an income level where they would be able to afford their own cars. This would therefore, result in a higher car density and coupled with the rapid growth of population, it will lead to an increase in the number of vehicles. This will definitely lead to problems of congestion. At the moment, such problems are common along the seventh street and Old Port Bell road in the Kampala Industrial area. (See Map 12). This is partly because of the heavy Commercial Vehicles, which use these roads.

12 Travelling by bus to the Kampala Industrial area from the city centre costs one shilling, while it costs five times as much in a Matatu.

1:3 :4. Health/Environmental Hazards

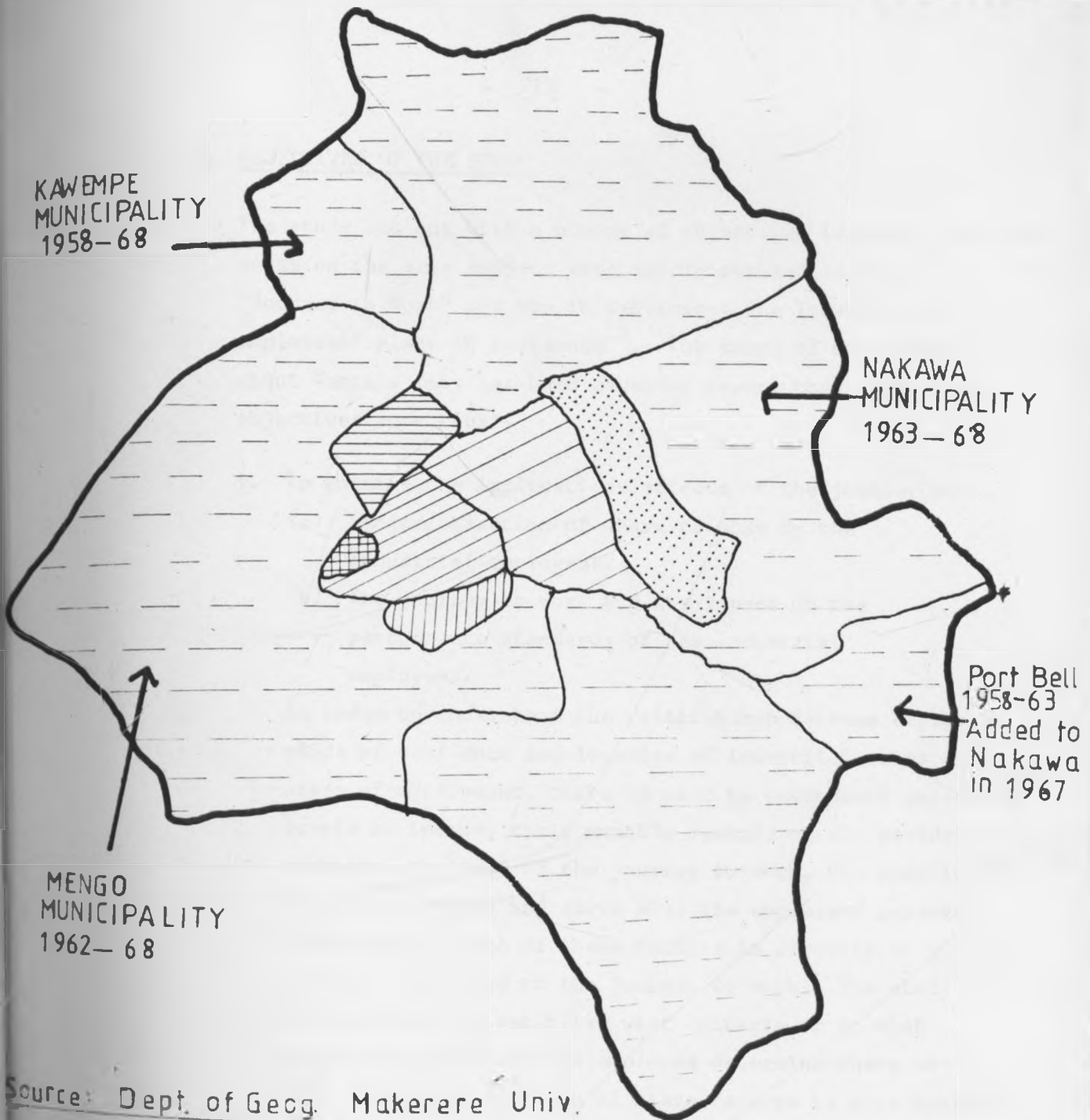
Since the study addresses itself to the relationship between Industrial sites and residential areas, it is also necessary to identify what effects the Industrial activities and effluents would have on the nearby residential areas. Some of these could be fire-outbreaks. Kampala Industrial area is the only area with all the petrol depots in the whole city. These are Caltex, Esso, Agip and Mobil. (Plate No. 1)

Secondly, it is important to know what environmental effluents are emanating from the industrial activities and their impact on the adjacent residential areas depending on the method of disposal used.

1:3 :5. Resources









This is a very acute problem the city council of Kampala is facing, both in terms of human resources as well as financial resources. The former is very significant as far as skilled manpower is concerned but the latter is another serious one in the sense that the city council is facing some problems in maintaining its services. In some cases, the Council has not been able to collect or recover costs of street improvement particularly where the tenure is still mailo-land. For example, inadequate resources have rendered Kibiira road (in the Kampala Industrial area) impassable as a result of leakage of an underground pipe which has not been repaired. (Map No. 12 and Plate No. 3).

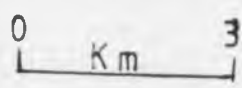
CHANGES IN ADMINISTRATIVE BOUNDARIES OF KAMPALA



Source: Dept. of Geog. Makerere Univ.

LEGEND (Additions)

-  1902
-  1906
-  1930
-  1938
-  1941
-  1952 Additional areas
-  1968 Incorporated
-  Boundary



MAP NO
4

1:4 OBJECTIVES OF THE STUDY

The study set out with a number of objectives in mind. Previous works on the same subject were mainly centred on the "Journey to Work" and how it determines the location of employees' place of residence¹³. The scope of this study about Kampala City has been extended beyond that. The main objectives were thus:-

1. To examine the implications/effects of the journey on:-
 - (a) Choice/Selection of where to stay by the Industrial employees.
 - (b) The journey to work and its impact on the performance standards of the Industrial employees.

In order to understand the relationship between employees place of residence and location of industrial sites as areas of employment, there is need to understand employees' levels of income, their monthly rentals of the residential premises, the cost of the journey to work, the duration in time and distance and above all, the employees' personal preferences. Each of these factors is directly or indirectly related to the journey to work. The study then attempts to establish what criteria or on what basis does an industrial employee determine where to stay and to assess which of these factors is more dominant as far as selection of a residential area is concerned.

2. To try and assess the implications of the journey to work and its relevance on traffic problems. Against this was incorporated in the Kampala Industrial area case study. The importance of this is that employees have to commute from their place of residence to their place of work at particular hours of the day, and this has a lot of

13 Lapin (1964) Structuring the Journey to Work.
University of Pennsylvania Press, Philadelphia Page 3-5

implications as far as traffic jermis are concerned.

3. Thirdly, to assess the factors behind the existing location of Industrial sites. At the moment, there are five major industrial sites (see Map No. 5) in Kampala city. Each one of these depicts a variety of factors behind its location. Some of these industrial sites are properly planned with proper layouts while some are not. The latter, therefore, implies a lot of complications as far as provision of infrastructure in future is concerned.
4. To identify the current factors behind the mushrooming up of slum areas near the Kampala Industrial area. These are namely Kibuli, Wabigalo and Namuwongo¹⁴.
- X 5. To examine the effects of environmental pollutants from the Industrial establishments onto the neighbouring residential areas. Reekie¹⁵ is of the opinion that towns and their inhabitants may be regarded as ecological systems. Thus, they exhibit patterns of arrangement, development and growth simily to that observed in natural ecosystems. Consequently, the pollution of town's residential areas particularly the discharge of toxic materials from Industrial processes should be given due consideration.

A principle now being adopted is that safe disposal of dangerous wastes should be emphasises, and if possible, such products should be concerted or utilised in some way.

14 Solzbacher, R. Op Cit.

15 Reekie, F. (1975) Background to Environmental Planning. Published by Edward Arnold, London
Page 114

Similarly, attention ought to be paid to other nuisances such as noise and smell from Industrial processes. Therefore, the criteria for location of an Industrial site must critically assess what environmental consequences the industrial wastes are going to impact on the nearby residential areas.

- ✓ 6. To find out and assess Government's role and the Industrialists' initiative and effectiveness in providing housing facilities for the industrial employees.
- ✓ 7. Lastly, to make policy proposals regarding future location of Industrial sites in relation to residential sites. Proposals to remedy the existing problems in the Kampala Industrial sites are also made.

1:5 DEFINITIONS OF TERMS USED

1. An Industrial employee in this context is taken as a person employed within factory premises in any of the Industrial areas in Kampala. This does not include the Managers or Directors or any other persons who may be having shares or interests in that particular business.
2. Journey to work is the journey an employee makes everyday from his place of residence to the place of work at particular hours of the day.
3. Private Mailo-land is land that is basically owned by individuals.
4. Freehold land is land that is vested in the hands of Institutions such as churches and schools.
5. Public land is land owned by Government either directly or indirectly under the umbrella of Kampala City Council.
6. 'Matatus' are the private vehicles which help to supplement the Bus services in the city of Kampala.

1:6 ASSUMPTIONS

A number of assumptions were made while undertaking this study. These were:-

- ✓ 1. Ideally, employees would like to live near their place of work in order to minimise travel costs.
- ✓ 2. Maximum distances employees are willing to commute from their place of residence to their place of work, vary depending on the mode of transport being used. In most cases, employees would be willing to travel any distance as long as transport is provided.
3. Industrial activities are likely to give off effluents which are not only detrimental to the health of the nearby residents but also likely to make the surroundings unpleasant.
4. That most of the Industrial employees are in the low-income bracket.

1:7 METHODOLOGY

The study was mainly based on data gathered from the Industrial survey that was carried out during the long vacation of the 1978/79 academic year. Secondly, a lot of information was obtained from Ministry of Housing and Public Buildings, Ministry of Power and Industry, Ministry of Planning and Economic Development, and the Department of Town and Country planning. Lastly, there was information from parastatal bodies such as National Housing Co-Operation and the Coffee Marketing Board.

The data from the Industrial survey was mainly based on those industrial establishments that were operating at the time of the survey.

As stated by the Minister of Finance in The Uganda Times,¹⁶ "we have a shattered economy. Our infrastructures are completely destroyed. Most of our industries are either closed or are working at one-third of the capacity". This was partly because of the mis-management of the country's economy during the eight years of military rule which left the country's economy in shambles but also due to looting which marked the aftermath of the Liberation war in the country.

There were two questionnaires. One was specifically for the industrialists and the second one was for the individual employees. The latter questionnaire mainly attempted to find out how much of their income industrial employees spend on the journey to work, and how this determines the choice of their place of residence. The former questionnaire attempts to establish the sort of activities that were going on in the various industrial establishments and the sort of environmental consequences which were likely to come from the various industrial activities.

After making a reconnaissance survey of all the establishments that were working the total number of employees came out as 4386. The number of establishments which were actually operating were 39. The interview on employees was meant to cover all the 39 establishments as an attempt to get a sample of answers from all the establishments that were operating. However, there were only ⁷ responses from employees of 31 establishments. It was not possible to get responses from the rest of the 8 establishments because either the Manager or the person in charge was not around to assist the author in administering the questionnaire.

16 Uganda Times, September 28th 1979.
Apparently this is the only Government Sponsored paper in Uganda.

A 7% of the number of employees for each of the 31 establishments was taken.

The interview covered all employees in the Industrial establishments with the exception of Managers or any other person who had interests or shares in the establishment. The individuals to be interviewed were picked upon in a systematic manner where and when a list of employees was available. However, this also depended on the nature of activities that would be going on in that particular establishment. There were such industrial premises such as Tea Blenders and Fishnet Manufacturers where almost everybody was working on the same floor and under the same roof. There were however, such establishments such as Coffee Marketing Board (see Plate No. 4) where employees were scattered in different sections and in different parts of the building complex, which made it almost impossible to carry out systematic sampling.

1:8 FORMAT OF THE STUDY

The study has been organised under six chapters, chapter one, which is basically an introduction gives the statement of the problem, the objectives of the study, the assumptions and the methodology used.

The second chapter covers related literature on the same subject. Chapter three deals with the background to the study area and the locational factors regarding Industrial and Residential sites. However, a theoretical background about locational factors is also given.

The fourth chapter deals with findings and problem identification based on Kampala Industrial area and its adjacent residential areas. Problems related to its location in relation to the surrounding residential areas are identified.

Chapter five deals with policy proposals and proposals specifically for the Kampala Industrial site and its surroundings. The last part is a summary of the findings, problems identified and proposals made.

1:5 LIMITATIONS TO THE STUDY

1. This study was done at a time when the country was still experiencing the effects of war. Uganda was a war-torn country and was still in turmoil. Consequently, a lot of establishments such as business and industries had to come to a stand-still, partly because of the breakdown in machinery, looting or shortage of technical skills. As a result of this, a number of establishments were closed down.
2. Lack of up-to-date information and the relevant maps. As a result of the war, it was not possible to conduct the population census in 1979 as had already been planned for. Thus, the study was mainly based on data derived from the 1969 census. The last population census in Uganda was conducted in January, 1980 but at the time of writing, the results had not yet been released.
3. Lastly, the general atmosphere in the country, particularly in Kampala, was still tense because of the war. This was a big constraint especially in the process of administering the questionnaire.

CHAPTER II

PLANNING FOR INDUSTRIAL LOCATION AND RELATED LITERATURE2:0 INTRODUCTION

In many cities, industrial activities do constitute one of the largest components of economic base. Secondly industrial activities do have a complex set of linkages with each other and other urban land-uses¹. It is therefore necessary that these linkages should be considered when determining Industrial Location.

The location of industrial sites is one of the factors responsible for generation of heavy traffic volumes in any urban setting because industrial employees have to commute from their homes to their places of work, twice or sometimes four times a day. This therefore implies a lot of traffic movements, depending on the relationship between the existing location of industrial sites and employees' place of residence. Besides this daily movement of industrial employees, there is the movement of both finished and unfinished goods to and from industrial areas.

Secondly, it is important that in selecting industrial sites, transport costs for industrial employees should be taken into account. It is therefore the duty of the physical planner in liason with other agencies that are concerned with location of both industrial sites and residential areas, that these considerations should be taken into account.

Thirdly, industrial establishments in an urban setting, are a major source of environmental contaminants, it is therefore necessary again that location of industrial sites in relation to residential areas should take into account means and ways of minimising or reducing such environmental problems

1. Claire, W.H. (1973) Handbook on Urban Planning Chapter 7

2:1 RELATIONSHIP BETWEEN INDUSTRIAL LOCATION AND RESIDENTIAL AREAS.

A number of theories regarding the relationship between industrial location and employees place of residence have been formulated. One of them is the "concentric zone-theory"². This was formulated by Burgess. The theory postulates that the city expands radially from the Central Business District (CBD). Next to the CBD is the downtown zone which normally consists of business and light manufacturing. The third zone is mainly inhabited by employees in the industries so that they may be within easy walking distances to their place of work. The fourth zone would be a residential area of high income people.

Thus, in his view, Burgess states that the city is represented as a series of concentric zones, and that the low-income employees will always try to locate nearest their place of work. Burgess however acknowledges that no city would conform perfectly to this idealised scheme. That there are a number of factors such as topography, rail, roads and even historical factors which do influence location of industry.

However, this theory tends to oversimplify the treatment of heavy industries. Moreover, the recent proliferation of work centres in the suburbs of cities has rendered Burgess' work inappropriate for describing contemporary distribution of business activities, industrial activities and even for that matter residential location. In Kampala for example, location of various land-uses differs very much from Burgess' concentric zones

2. Burton, K.J. (1976) Urban Economics. Published by MacMillan Press Limited, London, Pages 31-35.

2:1:1 The Multi-nucleated Centre Theory:

This was a theory about the location of different activities in cities, advanced by Chauncy Harris and Edward Ullman³. This theory recognises the existence of different work-oriented land-uses. It also gives consideration to new industrial satellite communities and then distinguishes between noxious and non-noxious industries. This theory thus appears to be more articulate as far as some of the current distributions of work-places are concerned with reference to Kampala city.

2: 2 SIGNIFICANCE OF JOURNEY TO WORK

Most of the previous studies regarding the relationship between location of industrial sites and employees place of residence, have tended to emphasise the journey to work in terms of cost and duration⁴. From 1900 onwards, Germany and Switzerland started carrying out intensive studies regarding the journey to work. In 1921 and later in 1951 Great Britain undertook extensive census studies regarding the journey to work. It was then being realised that the journey to work was of great significance as far as urban development was concerned. The part that the home to work relationship plays in an organisational structure of the city was recognised in the first report on plans for Birmingham city. Both social and economic costs of the journey to work were emphasised in this report.

3. Button, K.J. Ibid. pages 31 - 35

4. Lapin, H.S. (1964) Structuring the Journey to Work, University of Pennsylvania Press, Philadelphia.

Liepman⁵ advocates the idea of regional patterns of distinct small-towns about a central nucleus, rather than unchecked formless sprawl emanating from the centre, in order to minimise the journey to work.

The Kampala Development Plan⁶ has followed more or less a similar strategy by having major industrial sites spread all over the town in order to minimise the journey to work.

Adams et al⁷, from their study at Cornell University, recommended that emphasis should be put on transportation of people to their place of work both cheaply and conveniently. That this was necessary because for the industrial employees, the effort expended will definitely affect their efficiency and consequently affect production in the industry.

2: 3 ENVIRONMENTAL POLLUTION AND ITS RELEVANCE TO INDUSTRIAL LOCATION.

Ebnezar Howard⁸ in his concept of the "Garden City of Tomorrow" suggests that industries would always have to be located at the periphery of the town, served by an encircling railway which would not enter the town. The idea behind Howard's concept of locating the industries at the periphery was to try and avoid the noise as a nuisance, both from the industrial activities and the railway itself.

-
5. Liepman (1944) The Journey to Work, Its Significance for Industrial Community Life. Oxford University Press, New York pages 1 - 3.
 6. Kampala Development Plan 1972, Government Printer, Entebbe.
 7. Adams, L.P. et al (1955) Community Patterns of Industrial Workers Cornell University Housing Centre. It was observed from this research that 3/4 of the employees resided within 10 miles. About 95% of the employees resided within a distance of 20 miles from their place of work.
 8. Howard, E. (1965) "The Garden City of Tomorrow"(Faber Publication)

In this way the inhabitants of the town would live in a pleasant atmosphere free from industrial pollution.

The concept of "The Garden City of Tomorrow" was used to plan the city of Letchworth but later on, other cities such as Welwyn and Frankfort-am-main in the Netherlands were planned on the same principal. In essence therefore, Howard was trying to minimise the possibility of environmental pollution by locating the industries away from residential area. The applicability of this concept in the Kampala situation would involve a lot of changes in that Kampala city is already in existence. A lot of changes and modification are therefore necessary before applying this concept in planning for any city that is already in existence.

2: 3: 1 Health/Environmental Implication of Noise

Noise pollution, usually referred to as unwanted sound is a dangerous community hazard⁹. Studies about effects of noise on human beings indicate that hearing loss occurs after a long time exposure to noise. Rosen et al in evaluating the Mabans' environment in the Sudan¹⁰ found that the Mabans had better hearing than samples of men and women of all age-groups in U.S.A. The study also revealed that hearing loss was related to heart diseases in that adequate blood supplies were necessary to maintain hearing in a noise-exposed environment.

On this basis, it was recommended that all employees in the U.S.A. noisy industries be forced to design and develop standards designed to protect their employees, such devices could be ear-defenders.

-
9. John. D. et al Community Noise and Hearing Loss (An article)
Modern Government, Protection of Man's Environment, August 1968
page 49.
 10. Rosen, S. et al Presbycusis of Relatively Noise Free Population
In the Sudan. 1962 Page 727 - 743

The largest single employer in the U.S.A. with a noisy environment is the U.S.A. Airforce. Thus not only affects the employees of the employees of the U.S.A. airforce but also the residents nearby. This is one aspect which highlights noise pollution as a healthy and environmental problem, though not necessarily from industrial activities.

In this respect, it is very important to note that industries are some of the major sources of noise. In most cases however, this noise may be more of a nuisance within the factory itself rather than outside. This is however an important consideration to be taken into account with regard to location of industries which are likely to produce noise.

2: 3: 2 Effects of Toxic-waste Products from Industrial Activities.

Burgess¹¹ asserts that a lot of hazards of working with toxic materials have been mainly associated with the release of air-borne contaminants from industrial establishments, by polluting the immediate work-place as well as the surrounding residential communities. Burgess identifies the various air-borne contaminants as dust, fumes, smoke, mists, gases and vapour. Burgess is thus of the opinion that these contaminants can be reduced by having a proper site location.

This therefore means that decision-making about plant location should take into account the level of the impact of air-borne contamination in the plant itself and its surroundings for the benefit of the employees and residents respectively. Burgess further suggests that in circumstances where there are a number of residential communities near an industrial site, it is necessary to carry out air and gas cleaning before releasing the gases into the atmosphere.

The significance of this consideration is very significant with regard to the Kampala situation. It is important to note here that all the industrial sites in Kampala are adjacent to residential areas.

11. Burgess, W.A. (1969) Control of Airborne Contaminants. (article) Modern Government Protection of Man's Environment page 37

Consequently, the chances of polluting these residential areas are many depending on the type of industrial activities that may be going on.

In East Africa, Mombasa town depicts a good example of environmental pollution as a result of a salt-factory which was not properly located¹². Several complaints have been raised by residents of Mombasa as well as several environmentalists and consequently the "National Environmental Secretariat" (NES) have argued that such an industry should never have been located in the centre of the town. That it should have been built away from other industries and residential areas. It has been estimated that damage from corrosion by salt-particles to the adjacent properties and vegetation is worth 10 million Kenyan Shillings. NES has also identified twelve other factories in Mombasa as pollutants and studies are being carried out regarding their future within the city of Mombasa.

This is an experience that planners as other agents responsible for location of such an industry should take into account in future planning for any of the East African towns.

2: 4 CONGESTION ON ROAD SERVING INDUSTRIAL AREAS.

The problem of congestion in most cities is a common and daily phenomenon. Wilfred Owen¹³ asserts that even where automobile is scarce, modern and traditional means of transport combine to create chaos and congestion. This is typical of Nairobi city at peak hours when cars, wheel-carts and cyclists pile up along Likoni Road in the Nairobi industrial area.

12. The Kenya Builder. Volume 3 No. 23 January 1980. page 25

13. Murin, W.J. (1971) Mass Transit Policy Published by D.C. Health and Co. page 1 - 3.

Both the industrialists and the Planning Department of Nairobi City Council have expressed their concern about the daily traffic jam in the Nairobi industrial area. The City Council of Nairobi is thus faced with the problem of congestion along Likoni Road. This is a problem that is basically due to the fact that Nairobi has got one major industrial area. All the industrial activities are thus concentrated in this area. Consequently, the existing road network cannot adequately accommodate all the traffic to & from the Nairobi industrial area, especially at peak hours.

It is on this basis that most Planners have advocated a policy of industrial dispersion, not only as a means of reducing length and duration of journey to work, but also traffic volumes along the major roads which serve industrial areas.

In summary then, this Chapter has tried to highlight some of the important considerations regarding relationship between location of industrial sites and residential areas with emphasis on industrial employees' place of residence. However, emphasis is also laid minimising industrial pollution effects on the surrounding residential areas.

-
14. East African Report on Trade and Industries.
January 1980 page 9.

CHAPTER III

BACKGROUND TO STUDY AREA

3:1 INTRODUCTION:

3:1:1 Historical

Kampala is the largest town in Uganda. It lies four miles from the Northern shore of Lake Victoria and twenty miles North of the Equator. (Map No.1). Kampala is a Luganda name meaning the hill of impala (a type of antelope), on which Captain Lugard first built his camp on arrival at Kabaka Mwanga's residence in 1890. Since then the town began to spread over the hills east of Captain Lugard's Fort. (Map No.4).

3:1:2 Physical:

Traditionally Kampala is said to be built on seven hills, although in actual fact, they are more than seven hills.¹ The main hills are Lugard's Fort which formed the first site of the town, Mengo hill formerly occupied by the palace of the Former Kabaka, Namirembe hill which is crowned by the Protestant Cathedral, Rubaga hill which is the Roman Catholic Headquarters in Uganda, Nakasero hill formerly the main European residential area, Makerere hill and Mulago hill where the main Government hospital is located. (Map No.11) other hills of importance include Kololo hill which has been developed as a residential area for whites and Asians and Kibuli hill which is the main centre for Moslems.

The town is mainly drained by Nakivubo river which passes through the centre of the city. The second biggest stream is Kayunga.

1. Mugor E.S. (1951) Relational Patterns of Kampala, pages 8 - 15

3:1:3 Climate:

The climate of the city is affected by four important features, namely nearness to the Equator, altitude of 3000 feet above sea-level, presence of huge waterbody i.e. Lake Victoria and lastly its location in the interior (Fig.2).

3:1:4 Economic :

The major commercial and economic growth of Kampala started wayback in 1900, when Asians began to open up shops on the lower slopes of Nakasero hill. With the successful introduction of cotton which became well-established in 1910, the economy of the city as well as the whole country was boosted. Coffee is yet another crop which has contributed significantly to the economic growth of the city. Thus, most of the industrial establishments in the city were agro-based. Some of these were cotton ginneries.

3:1:5 Population:

The population of the city has continued to grow since 1900 as a result of both migrations into the city as well as constant changes in the city boundary. The 1969 - Census revealed that Kampala was growing at a population growth rate of 7.7% per year.² This however is a relatively low figure compared to other cities in developed countries. It is estimated that with the present global trends of urbanisation, the city would have a population of 1.5 million people by the year 2000 A.D. (Fig.No.1).

Although Kampala was growing at a higher population growth rate compared to the over-all National population growth rate of 3.5% per annum, there were some towns in Uganda whose annual growth rates were even bigger than that of Kampala City. (Appendix iii).

2. Kampala Development Plan (1972)
Government Printer, Entebbe.

Mean Monthly Rainfall for Kampala

RAINFALL IN (mm)

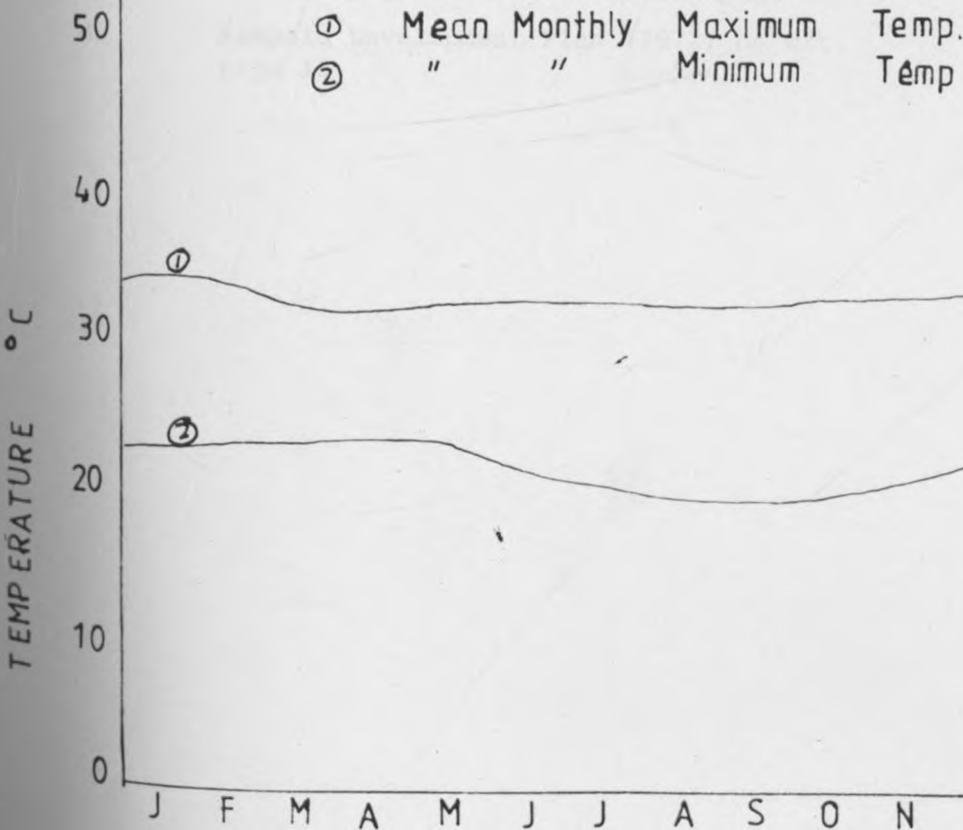
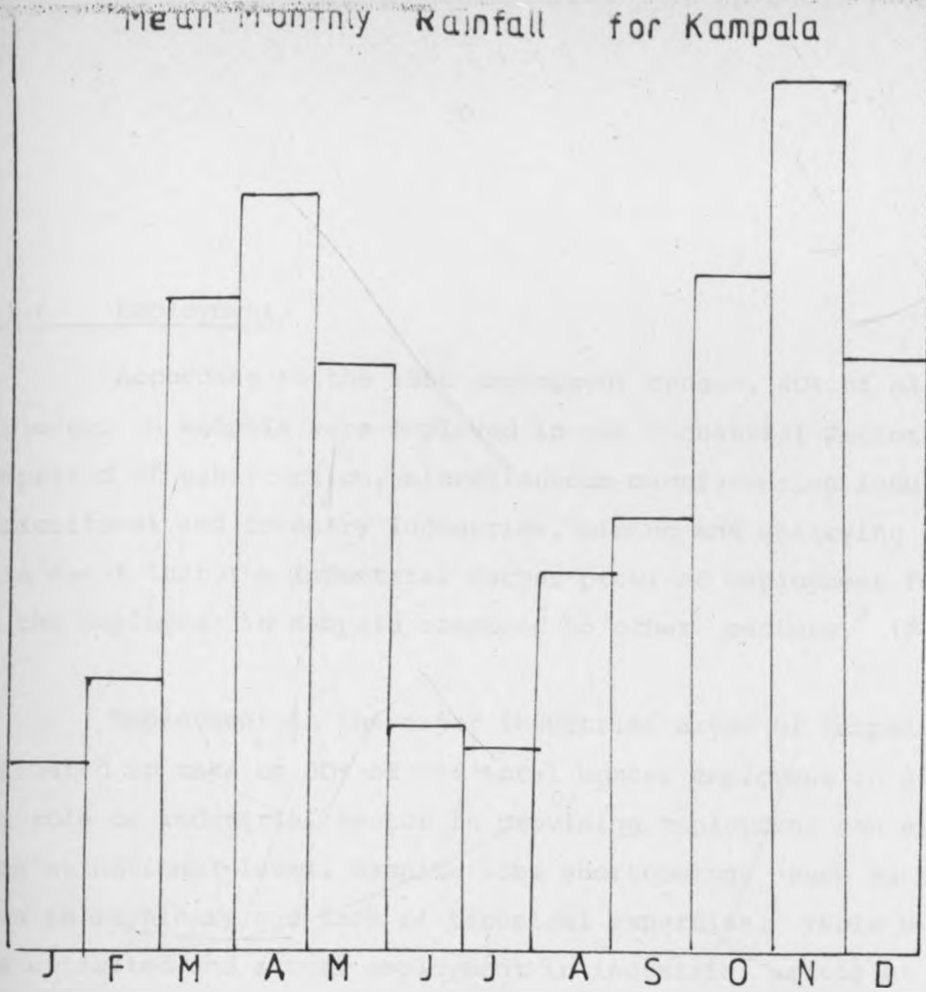


FIGURE NO. 2

Source: Atlas of Uganda (1967 Ed.)

3:1:6 Employment:

According to the 1966 employment census, 40% of all the employees in Kampala were employed in the Industrial Sector. This comprised of construction, miscellaneous manufacturing industries, agricultural and forestry industries, mining and quarrying industries. This meant that the Industrial Sector provided employment for most of the employees in Kampala compared to other sectors.³ (Figure 3)

Employment in the major industrial areas of Kampala was estimated to take up 30% of the total number employees in 1968.⁴ The role of industrial sector in providing employment can even be seen at National-level, despite some shortcomings such as breakdown in machinery and lack of technical expertise. Table No. 2 shows the estimated and actual employment in industrial sector at National Level.

-
3. Atlas of Uganda (1967) Edition page 67
 4. Kampala Development Plan (1972) op cit. page 15

ESTIMATED AND ACTUAL EMPLOYMENT IN THE
INDUSTRIAL SECTOR BETWEEN 1973 - 76 AT
NATIONAL LEVEL

YEAR	ESTIMATED	ACTUAL	DIFFERENCE	%
1973	1456	868	588	59.6
1974	1818	671	1147	36.7
1975	924	357	563	38.8
1976	1371	496	875	36.2
TOTAL	5,566	2,392	3,173	60.8

TABLE NO. 2

Source: Ministry of Industry and Power.
Report on Industries between 1973 - 1976.

EMPLOYMENT BY SECTOR IN KAMPALA CITY-1966

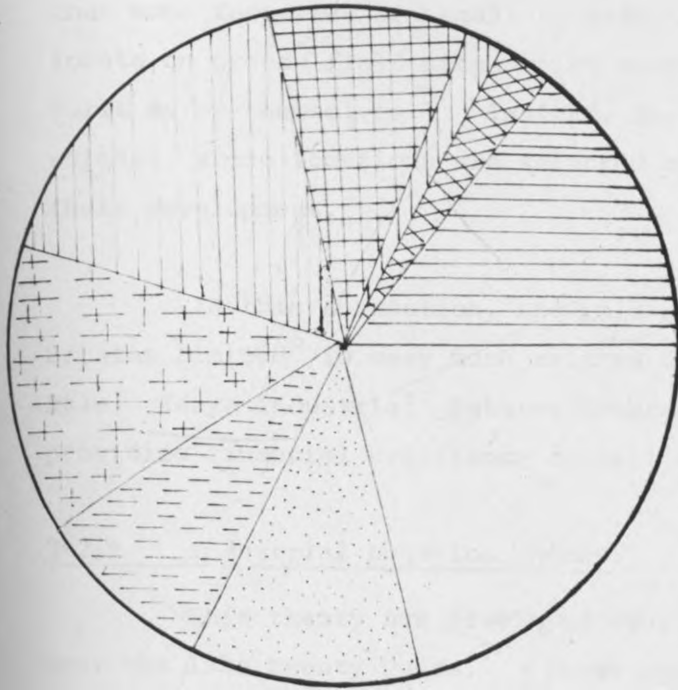
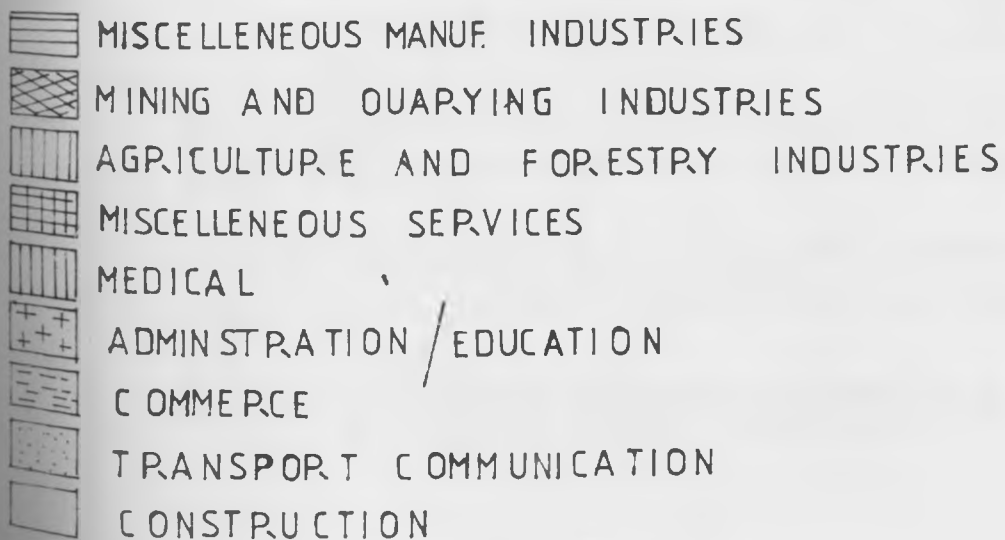


FIGURE NO. 3



Source: Atlas of Uganda 1967 (edition)

3:2 LOCATION OF INDUSTRIAL SITES

In order to examine the existing situation in Kampala regarding the Location of Industrial Sites, it is necessary to have a theoretical background regarding Industrial Location. Bale argues that some factories are small to medium sized and cannot afford to locate on green field sites which have been selected, cleared and built on by themselves.⁵ Instead, they have to locate on planned estates, whose locations are selected by agencies, responsible for their development.

In this connection, the role played by Kenya Industrial Estates Limited⁶ is very much related to the views expressed by Bale. Kenya Industrial Estates Programme has been responsible for providing financial assistance as well as industrial premises.

3:2:1 Industrial Location Theory:

This theory has developed over two contrasting directions over the last twenty years.⁷ These approaches are:

- (a) The classical distance minimisation approach, which is usually associated with the Weberian School of Thought. That entrepreneurs will try as much as possible to minimise the cost of transport and also take into account the locational inter-dependence and

5. Bale, J.R. (1977) Industrial Estate Development and Location in Post War Britain. Journal of Geographical Association, Volume 62 page 87

6. Kenya Industrial Estate Annual Report this is produced annually. Normally, it highlights the achievements of the Programme as well as the role it plays in assisting the small-scale entrepreneurs.

7. Keeble D (1976) Industrial Location and Planning in UK, Published by Methuen and Company Limited page 3.

and market area factors. However, some scholars such as Norcliffe⁸ have been dissatisfied with the Classical Industrial locational theory and argue that the major factors influencing the contemporary location of Industrial sites are:-

- (i) Infrastructure availability
- (ii) Internal and external economies of scale
- (iii) Linkage and contact patterns.

The existing situation of Industrial Location in Kampala is basically related to the above factors in the sense that Kampala city, being the capital of the country had all these facilities.

- (b) The second approach is the Behavioural approach. It is more recent than the classical distance - minimisation approach. It looks at the firm not as an optimising rational decision-making unit but rather having conflicting goals, limited knowledge as well as control of the environment. That a firm is also characterised by irrationality of perception and behaviour. Both the classical and the behavioural approaches do give an insight in the real World Industrial Location patterns. The behavioural approach in particular has given more insight in the sense that it relies on actual firm surveys for testing.

8. Norcliffe G.B. (1975) A Theory of Manufacturing Places
pages 29 - 52.

However, it is difficult to explain the present location patterns of Industrial Sites in Kampala basing specifically on anyone of these approaches. The applicability of any of these approaches in explaining the existing situation depends on the agents responsible for development of industrial sites or industrial estates. In most developing and underdeveloped countries the agents for developing industrial estates have been identified as:

- (i) Private Industrial Estate developers. These will normally operate on either small-scale or large-scale levels and are usually profit-making.
- (ii) The local authorities such as the District Development Committees.
- (iii) Government owned Estates. Such estates however present an intervention in the free-market supply of Estates and consequently invalidates Norcliffe's theory of Manufacturing Places.⁹

The criteria used in establishing such Government estates are usually related to:

- (a) Employment needs of an area.
 - (b) Good Communications
 - (c) Attractiveness to Industry
 - (d) Availability of Land.
- (iv) Town Planning Officers - Their role in providing Industrial Estates or Sites by zoning is particularly significant in new towns when formulating the total development plans of these towns. Post-war town planners were of the opinion that Industrial Sites should be segregated from other urban land uses. Today, Planners advocate dispersed type of Industrial

9. Norcliffe. Ibid.

Estates so as to reduce commuting distances and over-concentration of traffic at peak hours in one area of the town.

The existing location of Industrial Sites in Kampala is there as a result of zoning by Planners. However, a number of factors such as communications, nearness to residential areas and availability of infrastructural facilities have been taken into account, while zoning these sites for industrial purposes.

3:2:2 Existing situation in Kampala:

Industrial development in Kampala city has been identified in five major zones (see map No.5) However, industrial development was first concentrated in the south-east parts of the city along Kampala-Jinja railways line.¹⁰ There are altogether five major industrial zones in Kampala City.

ZONE I

This is the zone known as Kampala Industrial Area (Map No.5) It is the area in which all the field survey was conducted. The growth of this Industrial Area started near the City Centre, gradually spreading in the Easterly direction.

Kampala Industrial Area covers an area of 400 acres. Development of this area is more intense near the City Centre and decreases towards the Eastern direction. Most of the area has now been developed and there is little room for further expansion. The apparent traffic congestion in some parts of the Industrial area is mainly as a result of the width of the roads. (see Plate No. 8)

10. Sydney Litherland (1966) Location of Industry in Kampala - Mengo Region. A study carried out by a UN Mission.

The area is surrounded by a number of residential areas ranging from low-income to medium-income and high-income residential areas. To the South of the Industrial Area, there is the high-density low-income residential area of Kibuli, Wabigalo and Namwongo. To the East, the area is bounded by medium income residential area of Bugolobi. To the West and North, the area is bounded by the City Centre, the high-income residential areas of Nakasero and the low-income residential areas of Nakasero and Kiswa. (Map No.10).

Development of this area as an Industrial Site was favoured by a number of factors. These will be highlighted in Section 3:2:3 of this chapter.

ZONE II

Industrial development in this zone is mainly concentrated at Port Bell. This is mainly because of Port facilities. However, most of the Port facilities were not functioning at the time of the study. The second major locational factor in this area was the abundant supplies of water.

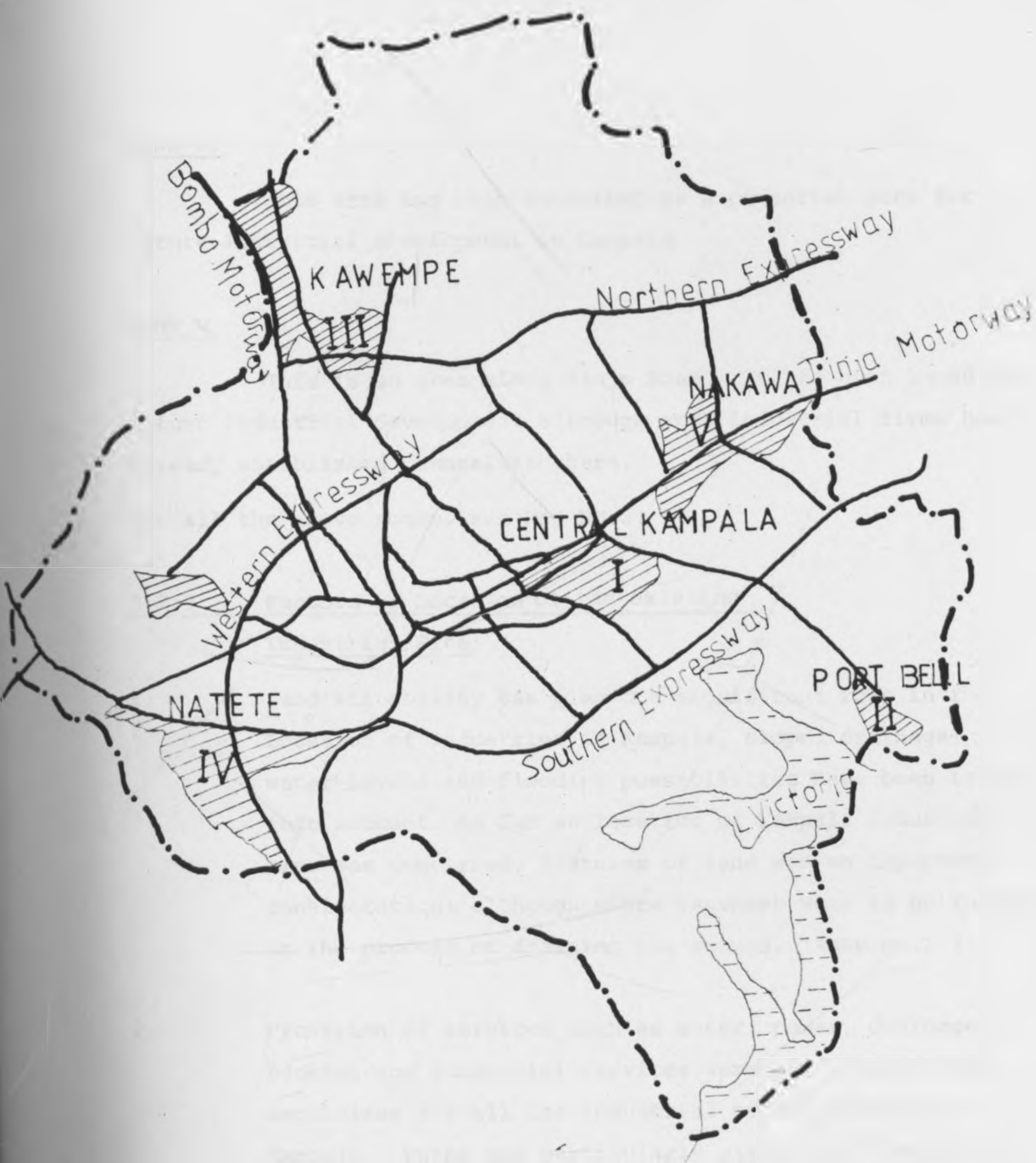
This area has however been found to be associated with a number of problems viz:

- (i) Lack of essential services such as sewerage reticulation as this area is not connected to the main sewer which serves Kampala.
- (ii) The area is too small to warrant provision of primary distribution of roads.
- (iii) The area is too small to provide employment for residential development.

ZONE III

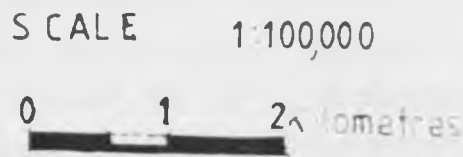
This is the Kawempe Industrial area and most of the establishments are mainly for processing agricultural products and the rest are workshops.

KAMPALA CITY MAJOR INDUSTRIAL SITES



Source: Town Planning Dept, Uganda

LEGEND	
	INDUSTRIAL SITES
	CITY BOUNDARY
	MAJOR ROADS
	ZONES



BYARUGA SA - SENDERE
 DEPT OF URBAN AND REGIONAL PLANNING
 MA PLANNING
 UNIV OF NAIROBI
 1979/80

MAP NO
 5

ZONE IV

This area has been earmarked as a potential area for future Industrial development in Kampala.

ZONE V

This is an area along Jinja Road. It has been zoned for future Industrial development although some industrial firms have already established themselves there.

For all the above zones, see Map No.5.

3:2:3 Factors of Location of the existingIndustrial Site:

1. Land suitability has played a significant role in the Location of Industries in Kampala, slope, drainage, water-levels and flooding possibilities have been taken into account. As far as location of Kampala Industrial area was concerned, flatness of land was an important consideration, although extra expenses were to be incurred in the process of draining the swamps. (Map No.7).
2. Provision of services such as water, power, drainage, banking and commercial services were all necessary pre-requisites for all the industrial establishments in Kampala. Water was particularly significant especially where such industries as breweries need large quantities of water. Thus, the breweries had to be located near Lake Victoria (i.e. at Port Bell). Similarly electricity plays a very significant role as it is the main source of power used in most of the Industrial establishments.

Drainage services are also considered as an essential element in the process of Industrial Location. In this

respect, the Nakivubo Channel plays a significant role as far as most of the industrial wastes in the Kampala Industrial area are concerned. The lack of some of these services is reflected more when one compares the location of various industries in some towns of Uganda.¹³

(See Table No.3) Consequently, 146 out of the 225 industries licenced between 1973 and 1976 in the whole of Uganda, were located in Kampala City.

3. Location of Industrial Areas close to high-density residential areas. Most of these high-density residential areas are the same areas where low-income people live. This is so in order to minimise distances between place of work and place of residence.

-
13. Report on New Industries Between 1973 - 1976.
Ministry of Industry and Power. December 1977.

LOCATION OF INDUSTRIES IN MAJOR TOWNS

YEAR	TOTAL				
	1973	1974	1975	1976	
(Licences) Issued	79	68	31	47	225
1. Kampala	32	60	24	30	146
2. Mbale	13	1	6	1	14
3. Jinja	6	1	1	1	9
4. Soroti	4	-	1	1	6
5. Tororo	1	-	1	2	4
6. Masaka	-	1	2	1	4
7. Mbarara	-	-	-	3	3
8. Wobulenzi	-	1	-	2	3
9. Arua	-	1	-	2	3
10. Kabale	1	-	-	-	2
11. Mubende	1	-	-	1	2
12. Kamuli	1	-	-	1	2
13. Lukaya	-	-	1	1	2
14. Lira	-	-	-	1	1
15. Kitgum	-	-	-	1	1
16. Sebei	-	1	-	-	1
17. Masindi	1	-	1	-	1

TABLE NO.3

Source: *Ministry of Industry and Power
(Report on new Industries Between 1973-1976)



PLATE 9 Some of the Industrial Establishments.



PLATE 10 Jinja Road. One of the roads serving Kampala Industrial Area.

4. Transport:

This has been a major influencing factor, particularly in the case of Kampala Industrial Area. Accessibility, provision of railway sidings for off-loading and loading purposes were major consideration especially as Uganda is mainly dependent on imported goods. Thus, one of the major reasons Kampala Industrial Area developed and grew where it is was because of the railway line. (see Map 10).

5. Market Factor:

This is a significant consideration because in order for some Industrial establishments to be able to operate economically there is need to take into account that there is adequate market to absorb the products.¹⁴ Kampala being the capital of Uganda, and with a population growth rate of 7.7% per annum according to the 1969-Census, was a potential market as far as those industries which are market-oriented are concerned. Such industries include food-processing, furniture making, beverages metal-industries such as agricultural hoes, bakeries and printing.

3:3 LOCATION OF RESIDENTIAL AREAS

In order to examine factors affecting residential locations in Kampala it is necessary first of all to look into the historical theories of residential location in urban settings so as to examine the present relationship between industrial areas and residential areas.

14. Greenhut ML (1966) Plant Location in Theory and Practice, University Press of Carolina. Pages 2 - 4.

3:3:1 Background to Residential Location Theories:

1. Housing Filtration Theory:

Sociologists and Planners have used the 'housing filtration theory' to determine the location of residences for various income-groups. That the location of households with different incomes would be determined by the patterns of growth of the city in the past.¹⁵ Consequently, the high-income group would tend to move away from the City Centre to the suburbs as the city grows, and as the transportation facilities are improved.

The houses near the city centre would in turn be taken up by the low-income groups whose desire is to live near their place of work. New York city depicts a good example of the housing filtration theory. Consequently most of the high-income people who work in New York live outside the boundaries of the Metropolis. Consequently New York has been facing some financial problems because most of these high-income people do not pay their taxes the Metropolitan. Similarly, most of the high-income people in Kampala tend to live away from the City Centre though not outside the town's boundaries.

2. The Sector Theory:

This was a theory formulated by Hoyt.¹⁶ He made the following observations although he tends to

-
15. Evans, A.W. (1973) The Economics of Residential Location; Published By MacMillan Press Ltd., London page 5.
16. Button K.J. (1976) Urban Economics. Published by MacMillan Press Ltd. Pages 31 - 35.

to put more emphasis on locational tendencies of one segment of residences i.e. the high-grade residential areas. This theory postulates that:

- (i) High-grade residential areas tend to locate along fastest existing routes.
- (ii) That the growth of high-rent neighbourhood continues in the same direction for a long time.
- (iii) That high rent zones will tend to grow towards high-ground, free from the risk of floods and malaria. This is typical of Kampala City with regard to the high-income residential areas.
- (iv) That such high-grade residential areas will tend to grow from a given point of origin following established lines towards the homes of the community leaders. There is a big relationship between the location of Ministerial houses and the surrounding residential premises in Kempala.

3. Trade-off Theories of residential Location:

These stipulate that instead of regarding the location of a household as being determined by the availability of housing, the household was assumed to find its optimal location relative to the centre of the City, by trading off travel costs (which are a function of distance from the centre), against housing costs which normally decrease with distance from the centre.

This is not necessarily the case as studies about land values tend to go up at the periphery of the urban area.¹⁷ In this connection, several authors have represented the households choice of location as its solution between spacious living and easy access. Edgar¹⁸ et al considers incomes as the key factors in the choice of residential location. Thus they argue that the high-income group use their superior purchasing power to buy residences in low-density residential areas but at the cost of long journeys to work. However, this preference of high-income groups choosing where and how to stay can only be stretched to a certain limit.

Firey¹⁹ views the choice of location of a residence in a socio-economic context. He argues that such sentiments as loyalty, a feeling of belonging and purposefulness which go beyond the allocation of space will ultimately determine the choice of location of residences. This is typical of the former Asian residential quarters in Kampala. It is also typical of the slum areas in Kampala because that is where most of the new migrants to the city first come to live, usually with their relatives.²⁰

3:3:2 Factors behind the existing location of Residential areas in Kampala

Like in most cities, residential patterns in Kampala City can be explained in dimensions of social differentiation, as well as in terms of physical differentiation. The former mainly accounts

-
18. Edgar, M; Hover, Vernon, R; The Anatomy of a Metropolis Harvard Univ. Press 1959 page 127 - 153.
19. Firey, W. (1947) Land-use in Central Boston. Harvard University Press pages 323 - 40
20. Solisbacher, Seminar Papers on Housing problems in Uganda.

for spatial patterning of residential areas. The following are the major factors which have influenced residential location in the City of Kampala.

1. The influence of relief has been a major factor in influencing residential locations especially for a city like Kampala which was formerly a colonial city. Consequently, the high-income group, who were also policy-makers tended to prefer higher grounds typical of British towns so as to avoid risks of flood and malaria. Thus, hill-tops such as Nakasero, Kololo developed as high-income residential areas while the lower areas of the city such as Kamwokya developed as middle and low-income residential areas²¹ (Maps No.2 and 7)
2. Symbolic significance of neighbouring Land-uses. Nakasero hill depicts a good example because of the location of the Presidential lodge on this hill. The neighbouring area has inevitably developed as high-grade residential area. Similarly, Bugolobi area with a lot of Government houses for senior officers, has also developed as a high-grade residential area. Muyenga area though unplanned, has also developed as a high-income residential area because a lot of rich people have built there good houses. However, it is often referred to as a "high-grade slum" (see map. 2)
3. Land-ownership:
The influence of this factor plays a significant role as far as the general development of the city is concerned. 49% of the land within Kampala City Council boundaries is under private tenure.²² Consequently, there have been delays in the development of certain areas such as Kibuli slum and Wandegeya slum.

21. Solzbacher (1969) Ibid.

22. Kampala Development Plan (1972) op.cit.

Lack of restriction on land development in these areas has led to low-status or low-income development as well as rapid deterioration in residential standards. However, these areas continue to provide accommodation for the low-income groups who constitute 80% of the city's total population.

4. Social and economic factors:

These are factors which are again related to land-ownership. The fact that there exists industrial areas in Kampala City (Map 5) means that there are employment opportunities for the low-income group. Consequently, there has been a lot of rural-urban migration which has contributed to the high population growth rate of Kampala.

However, the absence of efficient public transport as well as public housing in Kampala has meant that this increasing urban population would have to be accommodated where rents are cheap. It has already been noted in chapter one that there is little provision of housing facilities for the low-income group by the Government. Most of the Industrial employees, who are usually the low-income people, rent rooms houses built by private landlords. Hence, most of the new migrants will easily find accommodation in such high-density areas. It has become very difficult to control densities on privately owned land. Consequently, the private landlords who are at the same time the developers have taken advantage of this situation by putting up more single-roomed structures to cater for the low-income group.

CONCLUSION

This Chapter gives background information to the study area. Emphasis is laid on the main factors regarding the location of industrial areas and residential areas. In essence, it has been found out that the existing location of industrial areas and residential areas is a result of a combination of several factors.

FINDINGS AND PROBLEM IDENTIFICATION4:0 Introduction:

The findings presented in this study and the problems identified are based on information obtained during the industrial survey in the case study area (see Map No.10). The analysis of data was done manually.

4:11 Type of Accommodation for the employees:

Information obtained from the study area (i.e. Kampala Industrial area) indicates that most of the employees were renting private houses or rooms because of inadequacy of institutional or Government houses. Thus more than half of the employees interviewed were renting. These were 57.8%. 18.3% of the employees interviewed were staying in their own personal houses. 14.7% of the employees were staying with relatives and the rest 9.3% were given free-housing or they were given subsidised housing (Table No.4) and (Figure No.3).

It is therefore clear from these findings that industrial employees were faced with a problem of finding their own accommodation, and in most cases, this was by renting privately owned houses or rooms.

TYPE OF ACCOMMODATION

	No. of People	Percentage
Renting	171	57.8%
Owner-occupied	54	18.3%
Subsidised Housing	14	4.6%
Staying with Relatives	42	14.2%
Free-housing	14	4.7%
TOTAL	295	100.00%

TABLE NO.4

Source: Survey (Appendix i)

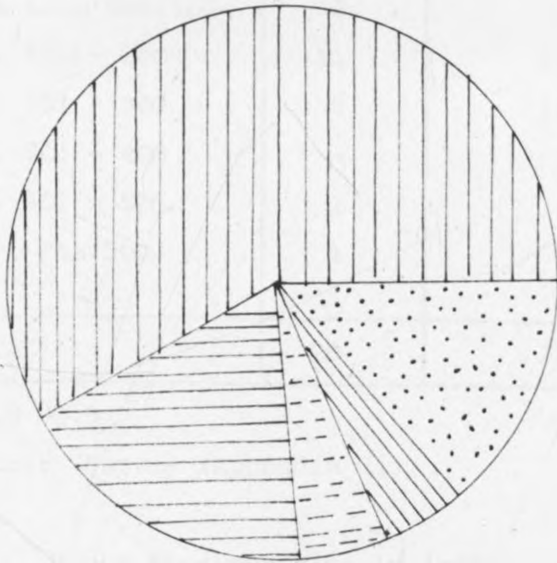
4:12 Place of residence in relation to place of Work:

It was found that only 34.5% of the interviewed employees who were working in the Kampala Industrial Area were staying in the adjacent residential areas of Kibuli, Kiswa Wabigalo and Bugolobi (see Map No. 11) 65.5% of the employees interviewed were therefore staying elsewhere other than the adjacent residential areas. It was further revealed that only 24.7% of the employees interviewed were staying in the nearby medium and low-income residential areas of Kibuli, Kiswa and Wabigalo.

A comparison of the rents in the various residential areas indicates that despite the fact 65.5% of the employees interviewed were staying in residential areas other than those adjacent to the Kampala Industrial area the rents in areas adjacent to Kampala Industrial Area were still lower. For example only two respondents were paying more than Shs.500/- for their accommodation within those areas adjacent to the Kampala Industrial Area. (Table No.5). This may be attributed to the fact that most of the employees in Kampala come from upcountry areas. When they arrive, they first stay with their relatives while they look for jobs and even when they will move away from where they first stayed.¹

-
1. Solzbacher R (1969) The Slum Problem in Uganda
Seminar Papers published by Milton Obote Foundation.

TYPE OF ACCOMODATION



LEGEND






-  RENTING
-  OWNER OCCUPIED
-  SUBSIDISED
-  FREE HOUSING
-  STAYING WITH RELATIVES

FIGURE NO 4

COMPARISON OF RENTS IN THE VARIOUS RESIDENTIAL
AREAS AROUND KAMPALA INDUSTRIAL AREA:

No. of People

Rent per Month	Kiswa	Kibuli/Wabigalo	Bugolobi	Elsewhere
Less than Shs.100	2	7	-	8
Shs. 101 - 200	11	12	3	34
Shs. 201 - 300	5	11	-	40
Shs. 301 - 400	-	1	2	19
Shs. 401 - 500	1	1	-	3
Above Shs.500	1	1	-	9
(TOTAL)	20	33	5	113

TABLE NO.5

Source: Survey (Appendix (i))

These findings clearly indicate that employees in the Kampala Industrial Area do not necessarily reside nearest their place of work. It also gives an indication that the growth of Kibuli Slum is not necessarily to provide/cater for employees in the Kampala Industrial Area, but rather due to lack of planning.² It is important to note here that Kibuli area was not incorporated in the Kampala Planning area until 1968. (see Map No. 4).

Secondly the fact that Kibuli slum is within easy walking distance to the City Centre means that even those low-income people working in the City Centre are likely to find their accommodation here.

Evidence that people do not necessarily stay near their place of work is shown by a similar study, which was carried out in Fife, a county in Scotland. This study revealed that changing

2. Jackson, N.A. (1968): Surveys for Town and Country Planning Published by Hutchinson and Co. Limited, page 158.

journey to work patterns are due more to changing distribution of employment.³ The Fife study reveals that in 1961, 36.6% of the economically active population was actually working outside the country, indicating willingness to travel long distances. In 1971, this willingness increased to 38.2%

From the information obtained from the survey, it was revealed that there was a general 'outcry' from the employees near the place of work as expressed by one of the employees. "I am working in the go-downs of Coffee-Marketing Board, I wish the Government could provide me with a nearby residential unit as I am disabled".⁴

4:13 Mode of Travel:

Despite the fact that over half of the people interviewed had a distance of more than 8 kilometers to travel per day (i.e. to and fro), only 40.4% could afford to use public transport (buses and taxis). 6.4% of the interviewed employees were using their own private cars. Only 12.2% of those interviewed were provided with company's transport.

Data obtained from the survey indicates that tendency to use public increases with journey to work. (See Table No. 6) and Figure No.5 Secondly, the findings reveal that the greatest proportion of industrial employees (i.e. 40.4%) use public transport.

3. Michael, B. (1979) Scottish Geographical Magazine
Changing Journey to work in Fife in 1961 - 71
page 45 - 59
4. During the survey, a number of respondents were willing to give their own feelings about the general shortage of housing facilities in Kampala.

DISTANCE TRAVELLED VIS-A-VIS MODE OF TRAVEL

Distance travelled (single journey)	Private Car		Public Transport		Transport Provided		Cycling		Foot	
	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 1 KM	3	1.0	-	-	4	1.3	-	-	45	15.3
1 - 2 Km	4	1.2	20	6.7	7	2.3	7	2.3	20	6.7
3 - 4 Km	6	2.1	40	13.7	13	4.4	9	3.0	19	6.4
Over 4 KM	6	2.1	59	20.0	12	4.2	12	4.2	9	3.0
(TOTALS)	19	6.4	119	40.4	36	12.2	28	9.5	93	31.5

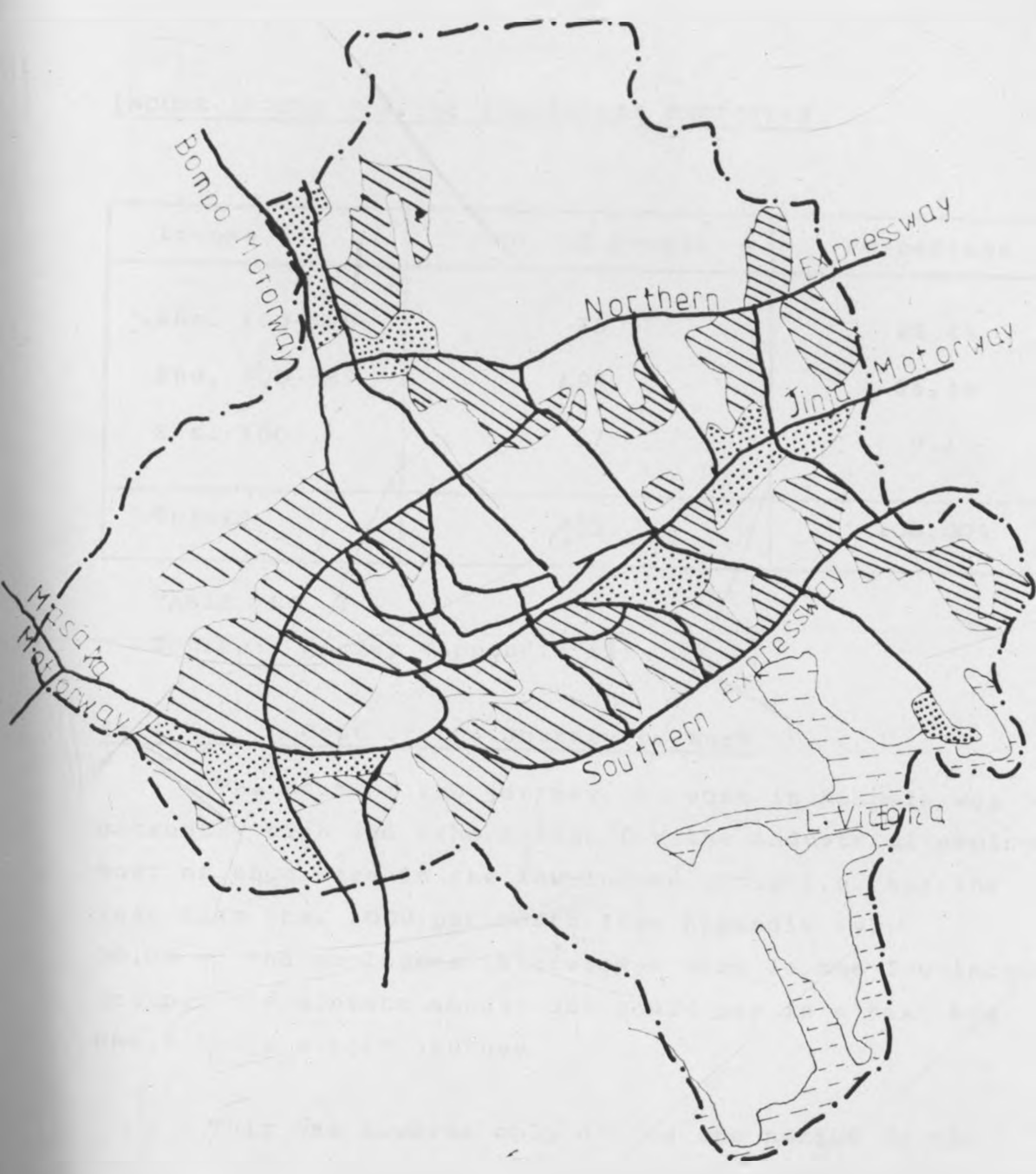
TABLE NO.6

Source: Survey (Appendix i)

The only industrial establishments which were providing free transport for their employees were Uganda Manufacturers and also Pepsi-Cola, Uganda Limited, The former Company disclosed that making of fishnets was a time-demanding job and therefore production could only be efficient if the employees arrive at their place of work in time. Hence, the company found it necessary to provide its employees with free transport.





It was also disclosed that even those who were using public transport could not actually afford to do it everyday throughout the whole month. In essence then, the problem of transport for the industrial employees was very acute, both in terms of the general shortage of public vehicles as well as cost of the journey because of the income problems, as most of the industrial employees are in the low-income group. (see Table No. 7).

KAMPALA CITY RELATIONSHIP BETWEEN MAJOR INDUSTRIAL SITES AND HIGH, MEDIUM HIGH RESIDENTIAL AREAS

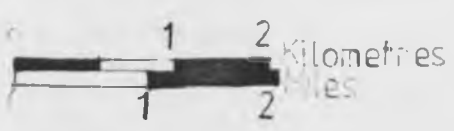


Source: Town Planning Dept, Uganda

LEGEND

-  INDUSTRIAL
-  RESIDENTIAL
-  MOTORWAY EXPRESSWAY
-  (Proposed) BOUNDARY

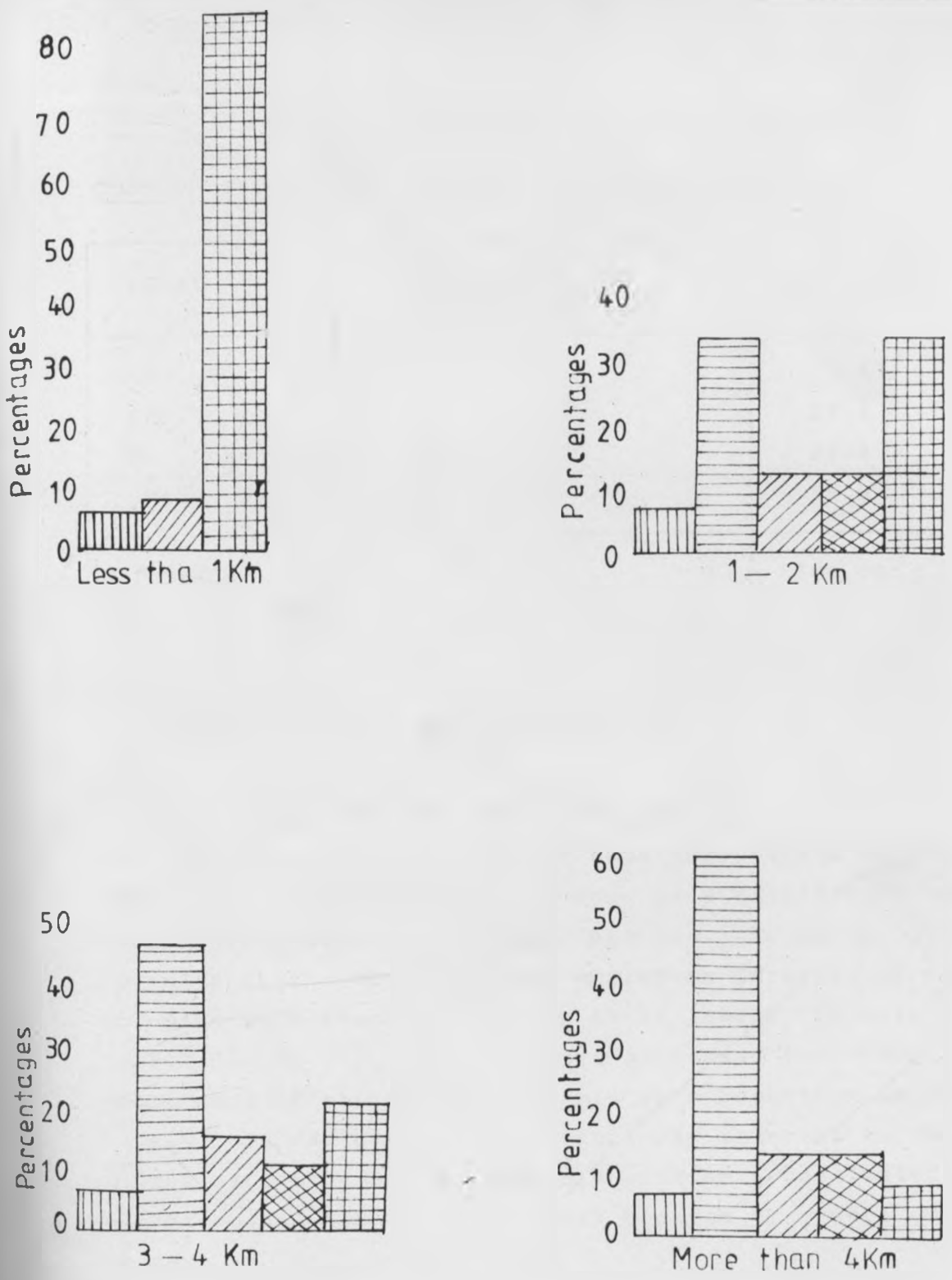
SCALE 1:100,000



BYARUGABA SENDERE
DEPT OF URBAN AND REGIONAL PLANNING
MA PLANNING
1979 - 80

MAP NO.
6

COMPARISON OF MODES TRAVEL WITH DISTANCES TRAVELLED



- LEGEND
- ▤ PRIVATE CAR
 - ▥ PUBLIC TRANSPORT
 - ▧ TRANSPORT PROVIDED
 - ▨ CYCLING
 - ▩ FOOT

FIGURE NO.5

Source : Survey

N:B Percentages based on No. of respondents from various classes of commuting distances

COST OF THE JOURNEY TO WORK (Single Journey)

Cost	No. of people paying the amount	Percentage
Shs. 5	10	3.4
Shs.10	37	12.6
More than Shs.10	72	24.4
Nil	176	59.6
(TOTALS)	295	100.00

TABLE NO.8

Source: Survey (see Appendix (i))

4.15 Duration of the Journey to Work

The survey indicated that more than a half of the people interviewed had to commute a distance of more than 8 kilometres (to and fro) per day. Secondly, it was revealed that over 50% of the employees interviewed were spending more than one hour on their journey to work (see Table No.10). The managers expressed their concern about some of their employees who were reporting on duty late. This was a problem particularly inherent in the Coffee Marketing Board and this problem necessitated the use of casual labour (employees) because they were cheaper to pay.

The long duration of the journey to work is due to the fact that very few of the employees working in the Kampala industrial area do not necessarily reside in the adjacent residential area.

PLACES OF RESIDENCE FOR THE EMPLOYEES
IN KAMPALA INDUSTRIAL AREA

PLACE	NO. OF PEOPLE	%
Kibuli	38	12.8%
Kiswa	23	7.8%
Wabigalo	12	4.1%
Bugolobi	29	9.8%
Elsewhere	139	65.5%
TOTALS	295	100.00

TABLE NO.9

Source: Survey (Appendix i)

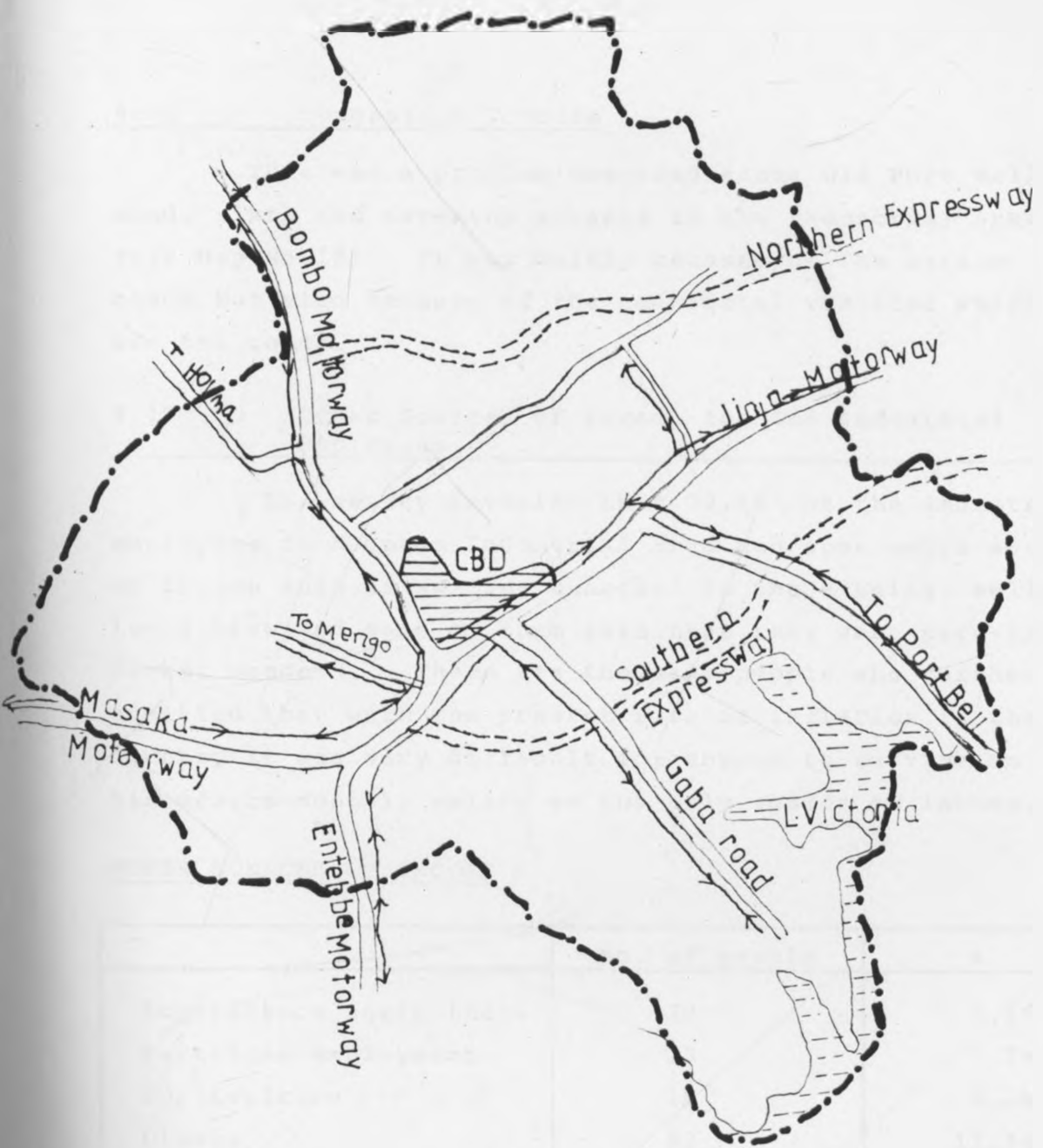
DURATION OF THE JOURNEY TO WORK

Time Consumed on Single Journey to work	No. of Employees	Percentage
0 - 30	78	26
31 - 60	121	41.5
More than 1 hour	96	32.5
TOTALS	295	100.00%

TABLE NO.10

Source: Survey (Appendix (i))

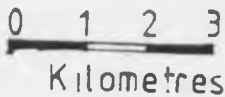
KAMPALA CITY: EXISTING BUS ROUTES



LEGEND

- EXISTING BUS ROUTES
- PROPOSED MOTORWAY
- PROPOSED EXPRESSWAY
- CITY CENTRE

Scale:



MAP NO. 8



BYARUGABA -SENDERE
 DEPT. OF URBAN AND REGIONAL
 PLANNING
 UNIV OF NAIROBI
 M.A. PLANNING
 1980

4:16 Congestion Problem

This was a problem observed along Old Port Bell Road, sixth and seventh streets in the Industrial Area (see Map No.12). It was mainly because of the narrow roads but also because of the commercial vehicles which use the roads.

4:17 Other Sources of Income for the Industrial Employees

The survey revealed that 32.6% of the industrial employees in Kampala Industrial area had some extra source of income such as selling charcoal in the evening, selling local brew and some of them said that they were part-time market vendors.⁵ These are the same people who further admitted that with the present rate of inflation in the country it was very difficult for anyone to survive on his meagre monthly salary as the only source of income.

OTHER SOURCES OF INCOME

	No. of people	%
Subsistence Agriculture	22	7.4%
Part-time employment	23	7.7%
Horticulture	18	6.2%
Others	33	11.3%
None	199	67.4%
(TOTALS	295	100.00%

TABLE NO.11

Source: Survey⁵ (Appendix I)

-
5. It is unlikely that some of the employees did respond to this question genuinely. They probably thought that the exercise was meant to determine their real incomes and then later on raise the taxes.

4:16 Congestion Problem

This was a problem observed along Old Port Bell Road, sixth and seventh streets in the Industrial Area (see Map No.12). It was mainly because of the narrow roads but also because of the commercial vehicles which use the roads.

4:17 Other Sources of Income for the Industrial Employees

The survey revealed that 32.6% of the industrial employees in Kampala Industrial area had some extra source of income such as selling charcoal in the evening, selling local brew and some of them said that they were part-time market vendors.⁵ These are the same people who further admitted that with the present rate of inflation in the country it was very difficult for anyone to survive on his meagre monthly salary as the only source of income.

OTHER SOURCES OF INCOME

	No. of people	%
Subsistence Agriculture	22	7.4%
Part-time employment	23	7.7%
Horticulture	18	6.2%
Others	33	11.3%
None	199	67.4%
(TOTALS	295	100.00%

TABLE NO.11

Source: Survey (Appendix I)

5. It is unlikely that some of the employees did respond to this question genuinely. They probably thought that the exercise was meant to determine their real incomes and then later on raise the taxes.

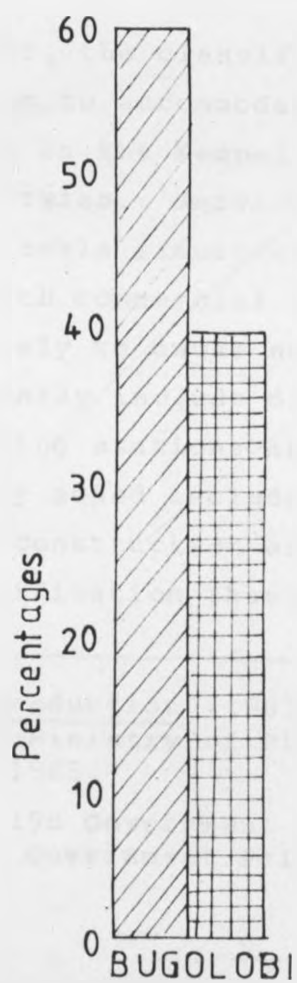
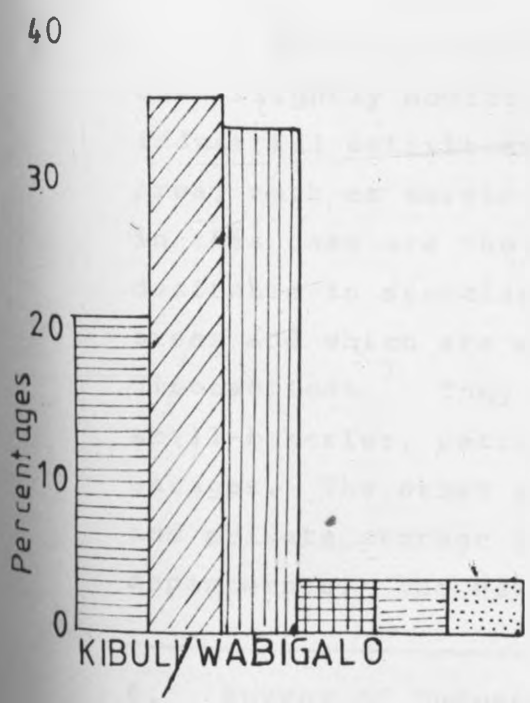
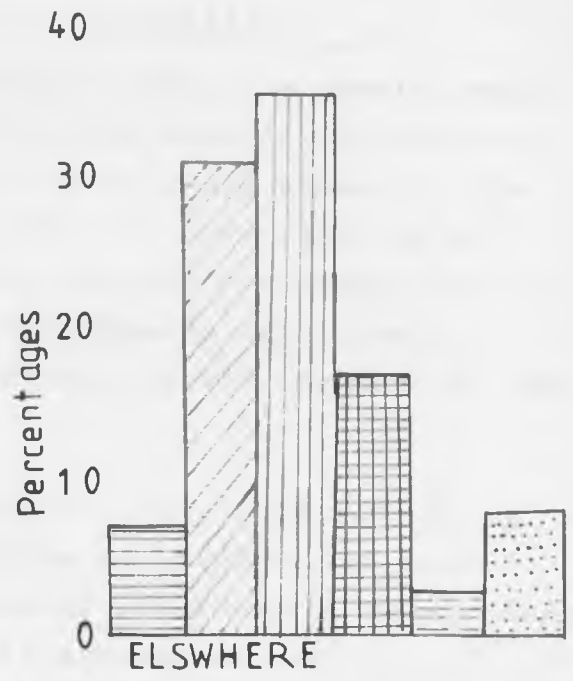
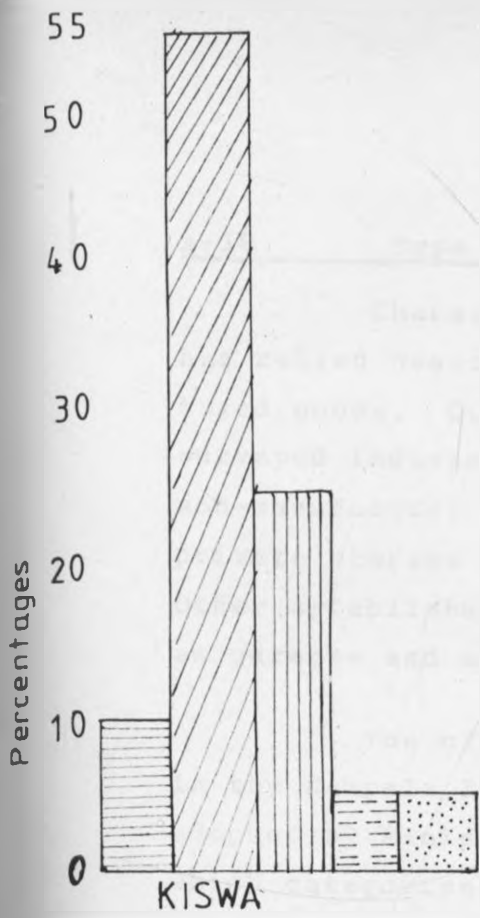


FIGURE NO 7

Source : Survey

- Less than Shs 100
- Shs 101 - 200
- " 201 - 300
- " 301 - 400
- " 401 - 500
- Above Shs 500

4:18 Type of Industrial Activities:

Characteristically, Uganda is a country which has relied heavily on imports for most of its manufactured goods. Consequently, quite a big number of the surveyed industrial establishments were taken up by non-manufacturing activities such as Government and private storage yards and maintenance departments. Other establishments were mainly service industries such as garages and offices.

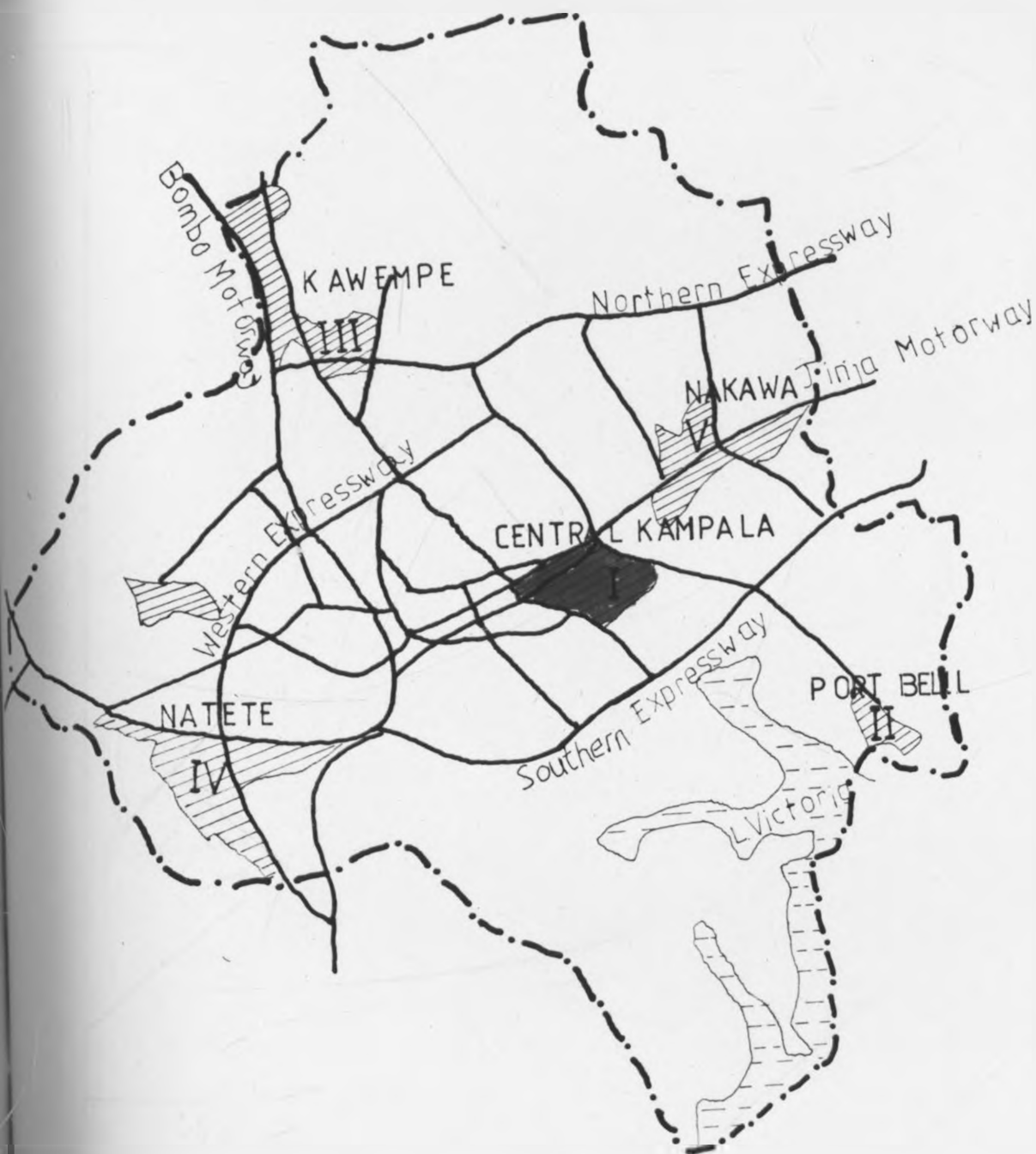
The classification of industrial activities in the Kampala Industrial Area is based on the method adopted by Ministry of Planning and Economic Development, which categorises industrial activities as:⁶

- (a) Mining including quarrying
- (b) Manufacturing industries including electricity
- (c) Processing of Agricultural products.





In this study however, the classification has been slightly modified so as to accommodate all the industrial activities found in the Kampala Industrial Area, such as service industries. Service industries in this case are the small-scale industries which are desirable in association with commercial and residential areas and which are not likely to cause nuisance or distractions.⁷ They frequently include dry-cleaners, small-bakeries, petrol-filling stations and sometimes garages. The other category added includes Government and private storage yards, construction and assembling departments. The new classification thus adopted is:

-
- 6. Survey of Industrial Production (1963), Published by Statistics Division of Ministry of Planning and Community Development 1965.
 - 7. Factories Act Chapter 198 Government of Uganda (Revised Edition 1964) Government Printer, Entebbe.

KAMPALA CITY MAJOR INDUSTRIAL SITES




Source: Town Planning Dept. Uganda

- LEGEND**
-  INDUSTRIAL SITES
 -  CITY BOUNDARY
 -  MAJOR ROADS
 -  ZONES (Study area)

SCALE 1:100,000

0 1 2 Kilometres




W. KARUGA BA-SENDERE
 DEPT OF URBAN AND REGIONAL PLANNING
 UTA PLANNING
 UNIV OF NAIROBI
 1979/80

MAP NO
9

Type of Industrial Activity	Example	No. of Establishments
Manufacturing	Uganda Garments Ltd	10
Processing	Coffee Marketing Board	11
Service	Garages	8
Construction/ Storage/Assembling	National Housing Corporation	10
	TOTAL	39

TABLE NO. 12

Source: Survey (Appendix (ii))

4:19 Industrial Wastes and their impact on the environment

The study also reveals that out of the industrial establishments that were operating at the time of the survey, more than 50% of them were producing solid harmless wastes (see Plate 5). Most of this solid harmless waste would be disposed of by open dumping and later on taken to the main dumping ground by the respective establishment or by the City Council.

The second largest component of industrial waste was in liquid form and most of this was discharged in the Nakivubo Channel (Plate No.6) or main sewer. Since most of the residents downstream were not using the water for drinking purposes, the effects were not likely to have any health implications.

The only industrial wastes which were being recycled were those from Casements (Africa) Limited most of them were metal-cuttings and they were being recycled by the East African Aluminium Works to make "sufurac".

TYPE OF INDUSTRIAL WASTE

Type	No.of establishments
Liquid wastes (harmless)	4
Solid wastes (harmful)	-
Liquid wastes (harmful)	7
Solid wastes (harmless)	22
Obnoxious gases	1
Not applicable	5
Total	39

TABLE NO.13

Source: Survey (Appendix ii)

4:20 NOISE AND SMELL

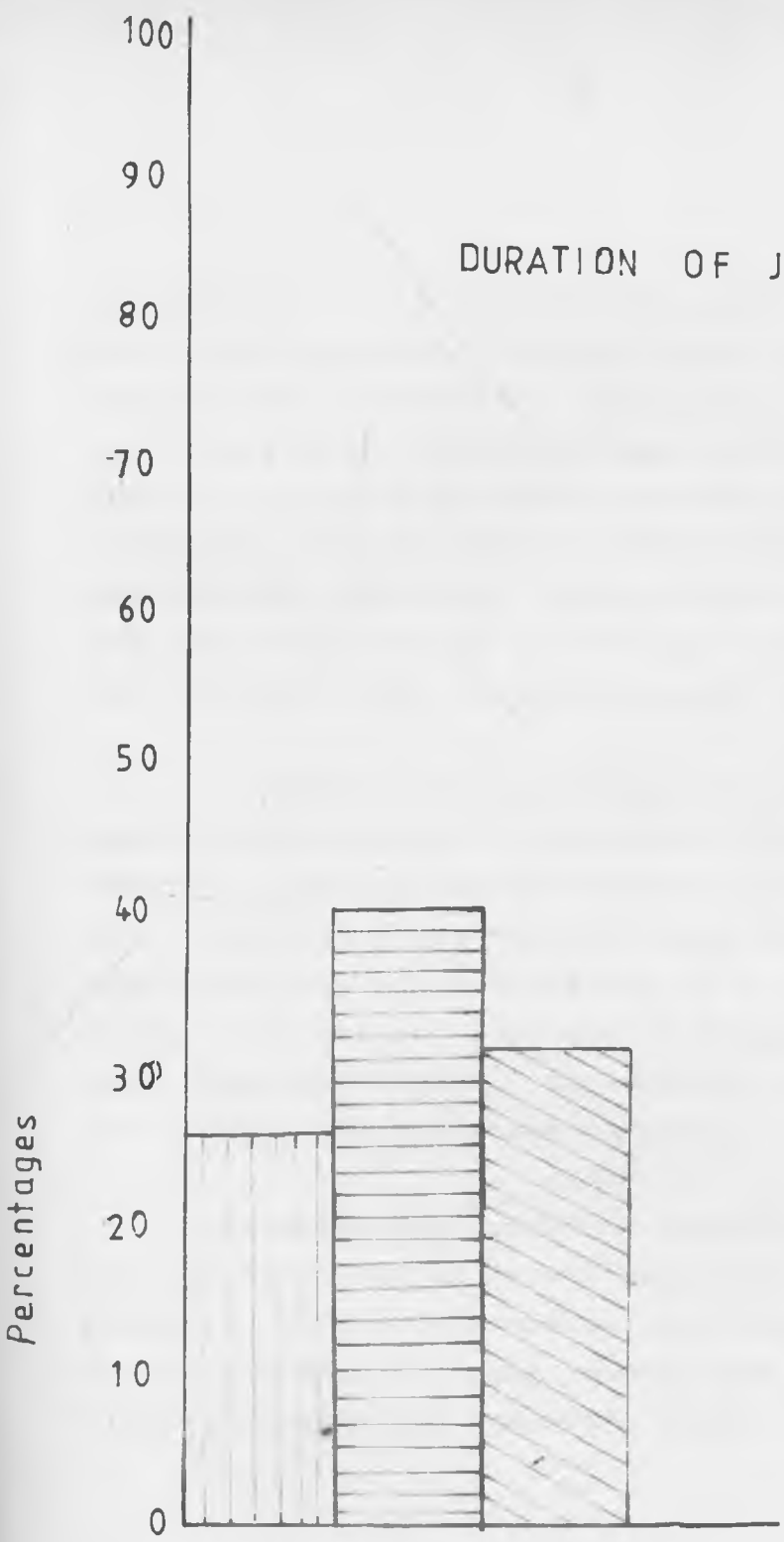
As far as noise problem was concerned it was only noticeable with those residential areas near the Coffee Marketing Board because of the heavy trucks which come to carry away the coffee. Secondly, the other source of noise which was likely to disturb the nearby residents was the railway (see Map 10).

Smell as a nuisance from all the surveyed industrial establishments was not so much of a problem. The only source of smell was the sewage treatment plant which is also located within the middle of Kampala industrial area. (Map. No. 10). Noise and smell were only noticeable within the industrial premises themselves rather than outside.

4:21 SUMMARY

There was a general feeling of dissatisfaction amongst the employees for lack of several facilities such as transport and institutional housing. Those establishments which were operating at the time of the survey tried

DURATION OF JOURNEY TO WORK



LEGEND




-  Percentage of employees taking 0-30 Minutes
-  " " " " 31-60 Minutes
-  " " " " More than 1 hour

FIGURE NO 8

to compensate/neutralise this general outcry by offering attractive salaries, usually higher than the Governments lowest scale of Shs.250/- per month. In essence then, the lowest paid industrial employee still earns much more than the lowest Government paid employee. Despite the relatively high salaries for the industrial employees it was unlikely that they could possibly maintain themselves and their families on such meagre income. This is because the cost of living in Uganda almost doubled.

Secondly, it was found that most of the industrial employees who work in the Kampala Industrial Area were not staying in the nearby residential areas. Yet, a comparison of the rents paid by the interviewed industrial workers indicates that rents elsewhere (i.e. those residential areas which are not adjacent to Kampala Industrial Area were sometimes higher. In addition to this these employees had to meet their transport costs.

Finally, the growth of Kampala Industrial Area has not had a lot of impact regarding environmental pollution of the surrounding residential areas. However, it has manifested itself towards the continued growth of Kibuli, Wabigalo and Namuwongo slums.



PLATE 3 Kibiira Road in Kampala Industrial Area.
Impassable because of leakage of under-



PLATE 4 Coffee Marketing Board Industrial Area.



PLATE 5 Open Dumping in Kampala Industrial Area.



PLATE 6 Nakivubo Channel. One of the outlets of Industrial effluents.

PRESENT POLICIES AND PROPOSALS

5:0 INTRODUCTION

This chapter sets out to make proposals based on the findings and problems which were identified during the Field Survey. Some of the proposals are however based on the existing information regarding policy issues. Since most of the field data was obtained from Kampala Industrial area (Map No.10) most of the short-term proposals will be specifically relevant to this area and its surrounding residential areas. However, some of the proposals do not necessarily refer to Kampala Industrial area but also to all the other industrial areas. It is hoped that some of the proposals will be easily and readily incorporated in the current Rehabilitation and Reconstruction Programme, which the country is undertaking now (1980).

In making these proposals, it is envisaged that the existing Government policies regarding industrial location and housing need to be modified and revised in order to meet the needs of the people as well as ensuring a healthy and pleasant environment of the city. These proposals are made bearing in mind that industries do play a significant role in providing employment for the low-income people. It was noted that 80% of the employees in Kampala were in the low-income group according to 1969 Census.

Finally, the proposals are made bearing in mind that as development goes on, the nature of industrial activities will continue to be diversified and inevitably, some of the industrial establishments may have environmental implications. Consequently, the location of such industries in relation to residential areas may have to be given special attention. This is an important planning aspect in the sense that the present Kampala Development Plan advocates the location of industrial sites adjacent to high density areas. In this respect then, it is necessary to have a review of the current industrial and housing policies in Uganda.

5:1 INDUSTRIAL POLICY

The present industrial sites in Kampala have been chosen on the basis of a number of factors viz:

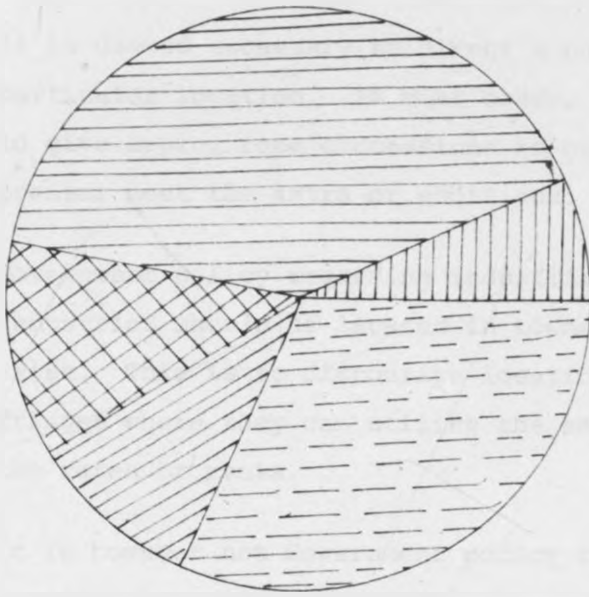
1. Good Transport Linkage. It is for this reason that all major industrial areas should be located close to the future primary roads.
2. Location of major industrial areas close to high density residential areas. Most of these high density residential areas are the areas where low-income people live. These are also mainly the people who work in industries.
3. Location of industrial areas in different parts of the city. Evidence from countries such as Kenya show that creation of large industrial estates leads to tremendous congestion problems.
4. Location of industries on flat land
Modern large-scale industries require flat land. However, availability of flatland in Kampala is a constraint. Perfect flat sites are in Kampala because it is built on a number of hills. The only abundantly flat areas are the swamps, which are badly drained so that substantial amounts of money would have to be spent on drainage.

5: 1: 1 The Industrial Charter:¹

This is basically the backbone of the Government's Industrial policy. It is primarily concerned with promotion of "industrial development" and investment more than the "Location of Industries". In this respect therefore, Government would appear to give little consideration regarding the significance and implications of location of industrial sites, and most significantly its relationship to employees' place of residence.

-
1. The Industrial Location Charter, Ministry of Planning and Economic Development

MODES OF TRAVEL FOR INDUSTRIAL EMPLOYEES



LEGEND






-  PRIVATE CAR
-  PUBLIC TRANSPORT
-  TRANSPORT PROVIDED
-  CYCLING
-  FOOT

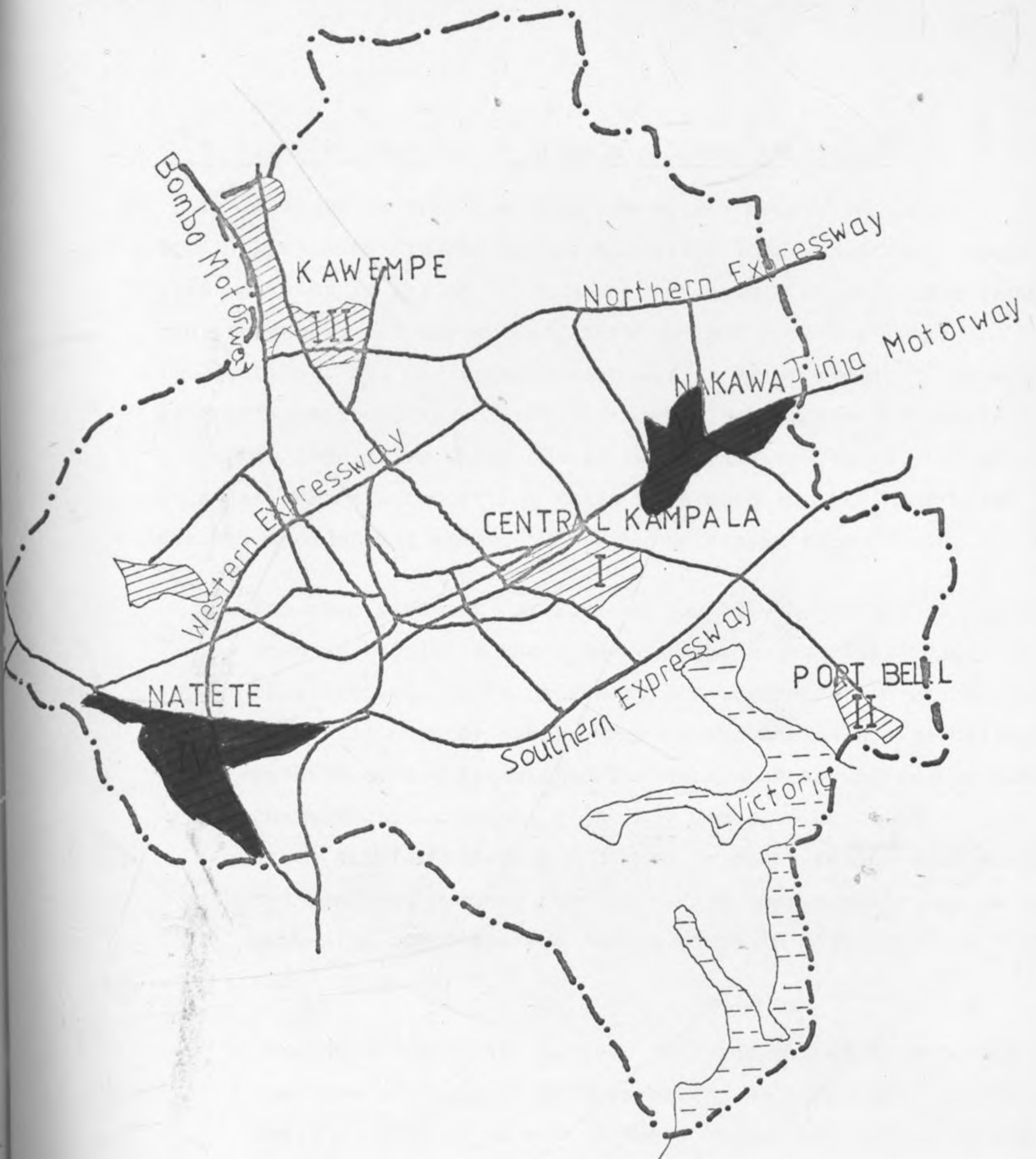
FIGURE NO.6

Source : Survey





However, Government does not disassociate itself completely from industrial location especially where and when the project is a big one and if Government has shares in that project. Thus the Government realises that there may be cases where:

1. It is deemed necessary to direct a particular industry to a particular location. In most cases, the Government has had to give appropriate concessions in order to assist the entrepreneur meet the extra or additional expenses.
2. Government policy regarding industrial location is that industries should be located in towns where basic services exist. This is to discourage location of industries on town fringes where they can utilise the services and yet not pay the rates or rents.
3. It is however not Government policy to direct industries to specific locations. The entrepreneurs/industrialists are free to choose their own locations according to their own and economic studies.

KAMPALA CITY MAJOR INDUSTRIAL SITES



Source: Town Planning Dept, Uganda

	INDUSTRIAL SITES
	CITY BOUNDARY
	MAJOR ROADS
	ZONES WHOSE LAYOUTS TO BE PREPARED

SCALE 1:100,000
 0 1 2 Kilometres

Uganda BA-SENDERE
 DEPT OF URBAN AND REGIONAL PLANNING
 OF NAIROBI
 19/80

MAP
 13

5: 2 PLANNING APPROACH TO INDUSTRIAL LOCATION POLICY:

It is apparent that the existing policy about industrial location does not in any way prohibit the location of any industrial activity in any of the areas which have been zoned for industrial purposes. At the moment, this may not pose environmental implications, but for future planning, it is necessary to draw a line between those industries which should be located on these sites and those industries which should not be located there. It should be noted that all industrial areas have been located near high-density residential areas. Thus there is need to:

1. Ensure a pleasant environment for all the inhabitants of the town particularly those nearest the industrial areas. In this respect, it is necessary for Government to enact industrial zoning provisions, whereby industries are permitted, prohibited and restricted to certain areas subject to the characteristic amount of noise, odour, vibrations or any other similar nuisance. A case in point is the salt plant in the heart of Mombasa town which has consequently caused environmental pollution and damage worth 10 million Kenya Shillings².

Threshold, which are subject to quantitative measurement could be established on this basis, no industrial establishment would be allowed to exceed these thresholds. For example, noise in a particular industry would not have to exceed a given "decibel level"³ at a certain distance from the origin. Similarly, smoke must not exceed a stated threshold on a Rigelmann Scale⁴, which is the main device usually used to measure it.

-
2. The Kenya Builder. Vol 3 No. 23 Jan. 1980
 3. This is the System used for Measuring Noise.
 4. This is a 'garget' used for measuring smoke.

Planners in liason with community workers, technical personnel should give special attention to these environmental hazards such as noise so that in those places where people live careful engineering techniques could be applied to overcome this problem. A similar case of such a problem has been overcome by having a night club located in the midst of a high density residential area⁵. The technology, design and materials used have helped to minimise the noise factor as an environmental nuisance.

Fortunately, most of the industrial establishments in Kampala industrial area have not posed problems of environmental pollution such as noise or smoke except within themselves. Nevertheless, it would still be necessary to carry out air and gas cleaning before releasing them into the atmosphere.

2. Secondly, it is suggested that Government should relax its requirements regarding industrial location within the boundaries of towns rather than on the fringes of the town. While the Government views this as a means of recouping costs which have been incurred in providing services, such requirements should only be imposed or should apply as long as the industrial establishment in question has got no environmental polluting waste products. It is suggested that such industries which are likely to have environmental pollutants such as tanning industries, should be advised and encouraged to locate on the fringe of the town or even further away.
3. Thirdly, it is proposed that the Government should not just allow entrepreneurs/industrialists to choose their own location in accordance with their own economic/feasibility studies.

5. Susana Night Club is located in the middle of a high-density residential area in Kampala.

This is because entrepreneurs are basically profit-making oriented and consequently they are not likely to give consideration to the social and economic costs which are incurred by the industrial employees.

It has been revealed from the findings (Chapter 4) that 65.5% of the industrial employees do not actually stay near their place of work. As a result, this leads to long hours of travel and strain for industrial employees which will in turn affect their performance standards. These are some of the issues that the entrepreneur may not take into account when choosing a location site for their industries.

4. Lastly, dispersal of industrial areas in all parts of the town should be encouraged. This would therefore mean that the economic theory of industrial location ought not to be the gauge of an industrial location policy.

Kampala Development Plan⁶ has adopted the industrial decentralisation strategy as a means of reducing commuting distances. Secondly, dispersal of industrial sites in a town would help to ensure distribution of employment opportunities which have always been the central theme of Government Development Programme⁷. This does not only apply to Kampala city but also to other towns in the country.

The implementation of this industrial dispersal policy depends on two major factors, namely:

6. Kampala Development Plan (1972) Government Printer, Entebbe.

7. *ibid*



PLATE 7 Buffer Zone. To be preserved.

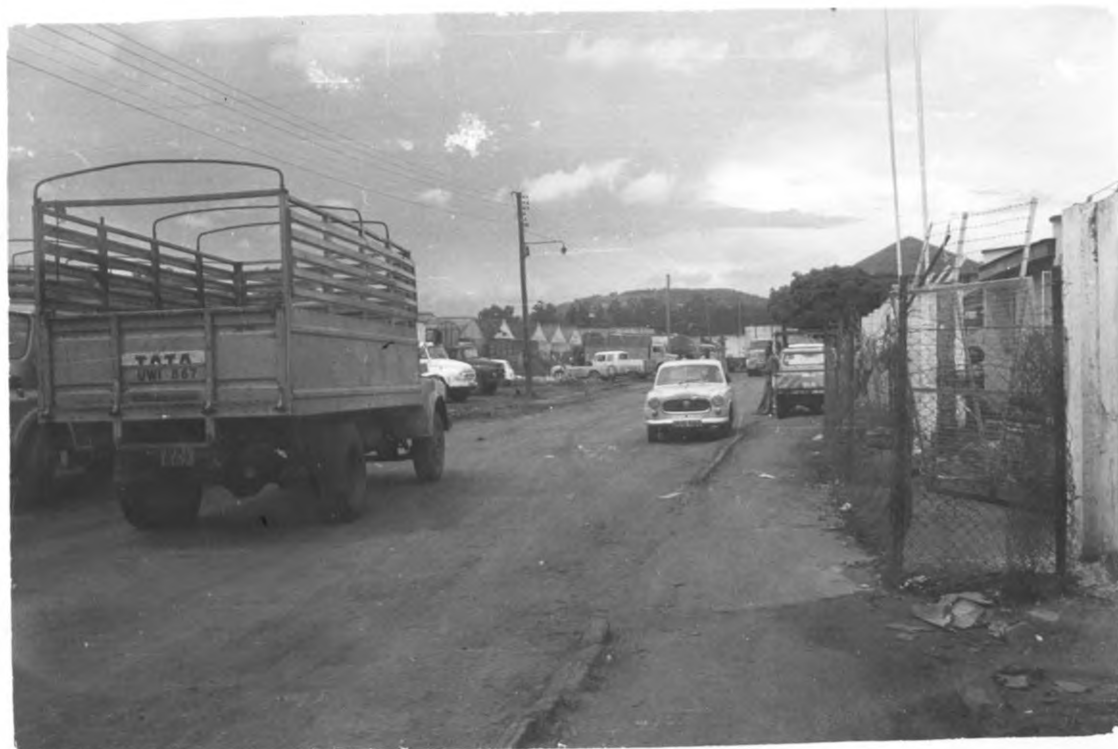


PLATE 8 Congestion along Seventh Street in Kampala Industrial Area.

- a) Although a number of sites in Kampala city have been earmarked for Industrial Development purposes in the present Kampala Development Plan, there is need to prepare detailed layouts for those sites whose detailed layouts have not yet been prepared (Map 13). This should be treated as a matter of urgency as there is no more room for industrial expansion in the present Kampala industrial area.
- b) There is need for Government to acquire land which has been zoned for industrial purposes from the private landlords.

5: 3 PROPOSALS FOR KAMPALA INDUSTRIAL AREA AND ITS ENVIRONS

The following proposals are made in light of the identified problems in Kampala Industrial area. However, some of them may not necessarily refer to Kampala Industrial area alone but to other industrial areas in the city. The agencies to implement these proposals would be Kampala City Council in liason with Ministry of Transport and Communications and Ministry of Housing and Public Buildings.

Short-Term Proposals:

1. There is need to revise the routing system of buses serving the Kampala industrial area. The existing bus routing system does not serve the industrial area adequately (Map 11.) It is thus suggested that there should be a bus operating along old Port Bell road - Fifth Street - Seventh Street, especially at peak hours in order to serve employees in this southern part of the industrial area. At the moment, only 'Matatutus' operate along Seventh Street and these are unpopular because they are expensive.
2. It has been observed that there is a problem of congestion along Old Port Bell road and Seventh Street because of the heavy commercial vehicles using these roads. It is therefore suggested the Sixth Street and Seventh Street be turned into

- a) Although a number of sites in Kampala city have been earmarked for Industrial Development purposes in the present Kampala Development Plan, there is need to prepare detailed layouts for those sites whose detailed layouts have not yet been prepared (Map 13). This should be treated as a matter of urgency as there is no more room for industrial expansion in the present Kampala industrial area.
- b) There is need for Government to acquire land which has been zoned for industrial purposes from the private landlords.

5: 3 PROPOSALS FOR KAMPALA INDUSTRIAL AREA AND ITS ENVIRONS

The following proposals are made in light of the identified problems in Kampala Industrial area. However, some of them may not necessarily refer to Kampala Industrial area alone but to other industrial areas in the city. The agencies to implement these proposals would be Kampala City Council in liason with Ministry of Transport and Communications and Ministry of Housing and Public Buildings.

Short-Term Proposals:

1. There is need to revise the routing system of buses serving the Kampala industrial area. The existing bus routing system does not serve the industrial area adequately (Map 11.) It is thus suggested that there should be a bus operating along old Port Bell road - Fifth Street - Seventh Street, especially at peak hours in order to serve employees in this southern part of the industrial area. At the moment, only 'Matatutus' operate along Seventh Street and these are unpopular because they are expensive.
2. It has been observed that there is a problem of congestion along Old Port Bell road and Seventh Street because of the heavy commercial vehicles using these roads. It is therefore suggested the Sixth Street and Seventh Street be turned into

- a) Although a number of sites in Kampala city have been earmarked for Industrial Development purposes in the present Kampala Development Plan, there is need to prepare detailed layouts for those sites whose detailed layouts have not yet been prepared (Map 13). This should be treated as a matter of urgency as there is no more room for industrial expansion in the present Kampala industrial area.
- b) There is need for Government to acquire land which has been zoned for industrial purposes from the private landlords.

5: 3 PROPOSALS FOR KAMPALA INDUSTRIAL AREA AND ITS ENVIRONS

The following proposals are made in light of the identified problems in Kampala Industrial area. However, some of them may not necessarily refer to Kampala Industrial area alone but to other industrial areas in the city. The agencies to implement these proposals would be Kampala City Council in liason with Ministry of Transport and Communications and Ministry of Housing and Public Buildings.

Short-Term Proposals:

1. There is need to revise the routing system of buses serving the Kampala industrial area. The existing bus routing system does not serve the industrial area adequately (Map 11.) It is thus suggested that there should be a bus operating along old Port Bell road - Fifth Street - Seventh Street, especially at peak hours in order to serve employees in this southern part of the industrial area. At the moment, only 'Matatutus' operate along Seventh Street and these are unpopular because they are expensive.
2. It has been observed that there is a problem of congestion along Old Port Bell road and Seventh Street because of the heavy commercial vehicles using these roads. It is therefore suggested the Sixth Street and Seventh Street be turned into

a one-way traffic system. The Sixth Street will be used as access while Seventh Street will be used as egress. This will help to minimise congestion and consequently, reduce delays for those people using these routes (Map14).

3. It was also observed that the Buffer zone which runs along Hunter road, separating the residential areas of Bugolobi from Kampala industrial area was being encroached upon. It is therefore proposed that strict measures be taken in order to preserve this buffer zone. Despite the fact that the Town Planning Board has not granted any planning permission, development has taken place on some of this zone. Besides, applications have been launched to establish industries on the same buffer zone (Map 11)

Constraint:

The major constraint here is that the enforcement machinery which is Kampala City Council seems to have relaxed their policies as far as the importance of buffer zones is concerned. Consequently, development has been allowed despite the fact that encroachment on this buffer zone has been rejected from the physical planning point of view.

4. It is suggested that a buffer zone be created separating the residential areas of Kibuli, Wabigalo and Namuwongo from the industrial area. This will also enable to create a pleasant environment for residents in these areas (see Map14).

Long-Term Proposals:

5. It is proposed that Ministry of Labour in liason with Ministry of Industry and Power, should assist the industrial employees to set up "Trade Unions" for Industrial Employee". This should be done not only for Kampala Industrial area but also for the remaining four major industrial areas in the city. It is envisaged that with such an organisation the industrial employees

will have a platform from where they can air their view. Similarly, they can use this platform to fight for their rights, such as proper housing facilities.

6. Finally, it is proposed that the Ministry of Labour organises extension service course for the industrialists. Emphasis in such courses ought to be given to the relationship between the employer and the employee. The advantages of providing certain facilities such as transport, housing to industrial employees must be highlighted. In so doing, the working atmosphere for the industrial employees will be more conducive. This will not only act as a psychological incentive but will also create a favourable working atmosphere for the industrial employee.
7. It is proposed that Government acquire land in Kibuli area and build there low-income houses. These will not only serve the employees in Kampala industrial area but also those low-income people who work in the City Centre. The advantage with this is that rents will be Government controlled. (see 5:4)

5: 4 HOUSING POLICY

The major goals of the housing policy in Uganda at the moment are to improve the housing conditions in the country to encourage as many Ugandans as possible to own their own houses. In order to achieve these goals the strategies to be adopted would be as follows:

1. Government to ensure that a proportionate part of its domestic resources are invested in housing.
2. General Mobilisation of Funds from various sources to be invested in the housing industry..
3. Revitalisation of the building and construction industry.
4. Encouragement of various agencies to invest in Housing Development.

5. Government to review the rent-control act.
6. Government to provide funds to urban authorities so as to enable them to provide low-income housing in their areas of Jurisdiction.
7. Provision of facilities such as roads, electricity, sewer in those areas which are unplanned either with the cooperation of private land-owners or by compulsory acquisition of land (see Map 11).
8. Counteract, Social and Physical disintegration in urban areas by Government pursuing a policy of slum improvement rather than wholesale development.

5: 4: 1 Observations:

1. Despite this policy of increasing the housing stock, the shortage of housing remains as an acute problem particularly in urban areas, such as Kampala. Consequently, this shortage forces rents up. As such, stores, kitchens and garages in low cost housing areas are inhabited though not originally intended for occupation.
2. It is apparent that the private land-lords continue to provide the largest proportion of low-cost housing. More than 50% of the interviewed industrial employees were staying in rented houses or rooms, built by private landlords. (Chapter IV, Figure 4).

5: 5 PLANNING APPROACH TO HOUSING POLICY:

It has been established from the survey that most of the industrial employees in Kampala are in the low-income. Most of these industrial employees live in the low-income residential areas. While the present Kampala Development Plan has attempted to minimise journey to work by locating industrial sites near high-density residential areas, it has also been found that industrial employees do not necessarily live near their place of residence and consequently, they often spend a lot of money on transport and housing. While most industrial employees would like to stay near their place of work, it is not always possible because of various reasons. Sometimes, they don't readily find accommodation near their place of work. Others may prefer to stay with their relatives and others may prefer to stay in their own houses which are often located away from their place of work. The later group is a small proportion since most of the employees come from upcountry⁸.

In view of this:

1. It is proposed that Government should step in and rectify the situation by introducing rent-control measures, particularly for the benefit of the low-income people. It is necessary that Government should arrest the situation by controlling the rents either directly or indirectly. In order to tackle this a number of alternatives are suggested:

- a) For Government to control rents in the private sector directly, a number of short-comings are likely to arise. Firstly, demand for housing is constantly rising because of the inherent shortage of housing in Kampala. Consequently, the rent will be dictated by this demand. Yet it has been observed that the private sector provides most of the low-cost housing.

-
3. Solsbacher (1969) Seminar papers on housing problems in Uganda. Solsbacher presented a paper entitled "The Slum Problem", with emphasis on Kibuli.

Secondly, the enforcement machinery to be used in controlling rents in the private sector is bound to have problems. It is very difficult to establish how much rent the landlord charges his tenants, because it is usually an entirely mutual agreement between the tenant and the land-lord.

- b) The second approach would be for the Government to increase housing stock for the low-income. This would be a more feasible alternative as it would now be much easier to control the rents. However, lack of funds would be the main constraint here. The Government should therefore seek loans from International agencies such as CDC (Commonwealth Development Corporation) on behalf of Kampala City Council.

Such a programme of providing low-cost housing for low-income group could be undertaken in Kibuli area (Map 14).

However, since land is privately owned here, the land-lords should not be evicted outright. They should be allowed to stay. However, the rest of the land other than that occupied by their houses should be acquired by Government. Detailed layouts for low-cost housing should be prepared and then council should construct low-cost housing there. Priority in allocation of these houses should be given to industrial employees in Kampala industrial areas. This could be done through "Trade Union of Kampala Industrial Area Employee" as suggested in Section (5:3) of this Chapter.

- c) Site and service scheme could be another alternative to adopt but it also has its short-comings. Site and service is a scheme basically intended to provide basic services to areas which may be unplanned or areas which are going to be developed as residential areas. However, it is unlikely that the low-income people are likely to afford putting up houses as per required standards. It is therefore likely that site and service schemes will be to the advantage of the private market. Consequently, such an alternative leaves nothing to be desired about by the low-income or the industrial employees unless the Government institutes a scheme to provide loans to low-income group.

SUMMARY AND CONCLUSION.

The purpose of this study was basically to examine the relationship between location of industrial sites and residential areas, with particular emphasis on industrial employees' place of residence. This was done bearing in mind that Kampala is a city faced with a number of problems viz: The Land-tenure which restricts the growth of the city, the shortage of housing facilities particularly in the low-income group, inadequate transportation facilities, inadequate resources and unplanned development.

The major objectives of the study were mainly to examine the factors behind the location of existing industrial sites in Kampala, to assess the factors affecting the choice of place of residence for industrial employees to examine Government's role in providing institutional houses for industrial employees, to investigate environmental implication on to the neighbouring residential areas as a result of industrial activities and finally to make some proposals as to how some of these problems can be tackled from the planning point of view.

It was revealed from the findings that in actual fact, industrial employees in Kampala do not necessarily stay near their place of residence,
 That there is no provision of institutional houses by Government for industrial employees,
 That most of the low-cost housing in Kampala is provided by the private sector and consequently it becomes difficult to control rents in this sector,
 That the nature of industrial activities in Kampala industrial area does not pose environmental pollution problems at the moment and that public transportation services around Kampala Industrial area do not adequately serve the area.

In order to alleviate these problems, a number of proposals are made. First, that the Government should make an attempt to provide low-cost housing particularly around the major industrial areas.

- That the Government should revise and modify the present rent-control act especially with regard to the private sector,
- That the Ministry of Labour in liaison with Ministry of Industry and Power should set up industrial employees trade unions in order to care for industrial employees' interests,
- That there is need to intensify public transport not only around Kampala industrial area, but also all over the city with emphasis on major routes leading to major industrial areas,
- That in order to ensure a pleasant environment, the buffer zone separating Kampala industrial area from the nearby residential areas should be preserved,
- That there is need for Government to revise and modify the present industrial policy,
- That for future planning purposes there is need to establish thresholds regarding some environmental nuisances such as noise, smoke and smell and that in order to implement some of these proposals, it is necessary for Government to change the present Land Tenure System.

It is further suggested that some of these proposals need immediate attention. In this connection, it is suggested that some of the short-term proposals could be taken care of under the present reconstruction and rehabilitation programme.

Conclusion and Policy-Implications:

The location of industrial estates or sites and their relationship to employees' place of residence is an important aspect of the structure and dynamics of any city. In some cities, congestion has been caused by patterns of job concentration or simply having one large industrial estate in a large town. This has often resulted into long hours of travel and strain.

The emerging pattern in the city of Kampala regarding the relationship between industrial sites and employees place of residence raises some important policy questions. Since one of the main aims behind the

dispersal of industrial area has been to reduce the journey to work such a strategy seems to have little success with regard to the existing situation in Kampala. Evidence of this is that most of the employees in Kampala industrial area do not necessarily stay near their place of work. This is because some of the industrial employees may prefer to be near in their own houses which may be located away from their place of work. Others may not readily find accommodation near their place of work or even others may not find employment near their place of residence. This therefore implies that industrial dispersion per se does not necessarily reduce the journey to work.

The journey to work can only be minimised by more careful planning of industrial sites in relation to residential areas. Special attention ought to be paid to the transportation system of the city. It is also important to note at this juncture that industrial dispersion policy can achieve its goals if only agencies such as Kampala City Council and National Housing Corporation are revitalised, with emphasis on low-cost housing. These are some of the issues that require special attention in future planning for Kampala.

BIBLIOGRAPHY

BOOKS:

1. ADAMS, L.P. et al (1955) Commuting Patterns of Industrial Workers.
2. BUTTON, K.J. (1976) Urban Economics; Published by MacMillan Limited, London.
3. CLAIRE, W.H. (Editor) (1973) Handbook on Urban Planning.
4. EDGAR, M. et al The Anatomy of a Metropolis Published By Havard Univ. Press.
5. EVANS, A.W. (1973) The Economics of Residential Location, Published By MacMillan Press Ltd. London.
6. GREENHUT, M.L. (1966) Plant Location in Theory and Practice, University Press of Carolina.
7. HOWARD, E. (1965) The Garden City of Tomorrow. (Faber Publication)
8. JACKSON, N.A. (1968) Survey for Town and Country Planning, Published By Hutchinson and Company Limited.
9. KEEBLE, D. (1976) Industrial Location and Planning in U.K. Published By Methuen and Company Ltd.
10. LAPIN (1964) Structuring the Journey to Work. Univ. of Pennsylvania Press, Philadelphia.
11. LIEPMAN (1944) The Journey to Work its Significance for Industrial Community Life. Oxford University Press, New York.
12. MURIN, W.J. (1971) Mass Transit Policy. Published By D.C. Health and Company.
13. MUGOR, E.S. (1951) Relational Patterns of Kampala.
14. NORCLIFFE, G.B. (1975) A Theory of Manufacturing Places
15. REEKIE, F. (1975) Background to Environmental Planning, Published By Edward Arnold, London
16. WEST, W.H. (1969) The Transformation of Land Tenure in Buganda Since 1896, Published By African Studiecetrum, Cambridge University.

JOURNALS.

1. BALE, J.R. (1977) Industrial Estate Development and Location in Post-War Britain.
Journal of Geographical Association.
2. MICHAEL, B. (1979) Changing Journey to Work Patterns in Life in 1961 - 1971, Scottish Geographical Magazines
3. JOHN, D. et al (1968) Community Noise and Hearing Loss, Journal of Modern Government Protection of Man's Environment.
4. BURGESS, W.A. (1969) ibid

GOVERNMENT PUBLICATIONS

1. Kampala Development Plan (1972) Government Printer; Entebbe.
2. Land Policy, Kampala Master Plan (1970)
3. Land Reform Decree (1975) Govt. Printer, Entebbe.
4. Housing Policy in Uganda (1978) Unpublished.
5. Uganda Times September 28th 1979.
6. Location of Industry in Kampala - Mengo Region (1966) by Sydney Litherland, U.N. Mission
7. Survey of Industrial Production - Statistics Division, Ministry of Planning (1978)
8. Factories ACT, Revised Edition (1964)

MONTHLY AND ANNUAL PUBLICATIONS:

1. Kenya Industrial Estates Annual Report 1976/77.
2. The Kenya Builder, Monthly Publication, January 1980.
3. East African Report on Trade and Industry, January 1980.

O T H E R S:

1. Atlas of Uganda, 1967 (Edition)
2. Housing Problems in Uganda Seminar Papers at Makerere University, Articles by Solsbacher.

APPENDIX (i)

M.A. PLANNING
D U R P
INDIVIDUAL SURVEY QUESTIONNAIRE

INTERVIEW NO.
D A T E.

1. Place or residence
 - a) Bugolobi
 - b) Kibuli
 - c) Wabigalo/Namwongo
 - d) Kiswa
 - e) Elsewhere
2. Mode of travel to place of work
 - a) Personal car
 - b) Public Transport/Taxi/Bus
 - c) Cycling
 - d) Foot
 - e) Transport provided
3. Cost of journey to work
 - a) Sh.5.
 - b) Shs.10.
 - c) More than Shs.10.
 - d) N i l
4. Distance travelled per day
 - a) Less than 1 Km.
 - b) 1 - 2 Km.
 - c) 3 - 4 Km.
 - d) More than 4 Km.
5. Accommodation
 - a) Owner-occupied
 - b) Renting
 - c) Free housing
 - d) Subsidised housing
 - e) Staying with relatives.
6. Rent per month
 - a) Less than Sh. 100.
 - b) Shs.100 - 199
 - c) Shs.200 - 299
 - d) Shs.300 - 399
 - e) Shs.400 - 499
 - f) Above Shs.500

APPENDIX (i)

continued.....

7. Salary per month

- a) Shs. 100 - 299
- b) Shs. 300 - 499
- c) Shs. 500 - 699
- d) Shs. 700 - 899
- e) Shs. 900 - 999
- f) Above Shs. 1,000.

8. Other sources of income

- a) Subsistence agriculture
- b) Part-time employment
- c) Horticulture
- d) None

9. Duration of journey to work

- a) 0 - 30 minutes
- b) 31 - 60 minutes
- c) More than 60 minutes

APPENDIX (ii)

M.A. PLANNING

D U R P

SURVEY QUESTIONNAIRE FOR THE INDUSTRIALISTS:

INTERVIEW NO

D A T E

1. Nature of industrial activity within the building.
 - a) Service
 - b) Assembling
 - c) Processing
 - d) Manufacturing
 - e) Construction/Store

2. Power used.
 - a) Gas
 - b) Coal
 - c) Diesel
 - d) Electricity

3. Industrial wastes.
 - a) Solid wastes (harmless)
 - b) Solid wastes (harmful)
 - c) Liquid wastes (harmless)
 - d) Liquid wastes (harmful)
 - e) Obnoxious gases

4. Waste disposal method
 - a) Discharged in the rivers/streams
 - b) Chimney
 - c) Uncontrolled
 - d) Open-dumping
 - e) Re-cycling

5. Impact of industrial effluents on the nearby residential areas.
 - a) Complaints about noise, smell, etc.
 - b) Any diseases.

6. Measures for control of environmental pollution:
 - a) Buffer zones
 - b) Others.

APPENDIX (ii)

continued.....

8. No of employees in the establishment.

9. Fringe benefits for the employees

a) Free medical facilities

b) Free housing

c) Free transport

d) Attractive salaries

APPENDIX (iii)

COMPARATIVE GROWTH RATES OF URBAN POPULATION IN UGANDA

TOWN	1959 POPULATION	1969 POPULATION	ANNUAL GROWTH RATES
Kampala	1 57,800	330,700	7.7%
Entebbe	21,096	10,941	6.8%
Mubende	11,877	6,004	12.3%
Mukono	450	3,458	22.5%
Mityana	803	2,263	10.9%
Masaka	4,782	12,987	10.5%
Jinja/Bugembe/Njeru	56,429	99,393	5.8%
Mbale	13,569	23,544	5.7%
Tororo	6,365	15,977	9.6%
Soroti	6,645	12,398	6.4%
Gulu	4,770	18,170	14.3%
Lira	2,929	7,340	9.6%
Kitugum	3,454	3,242	0.6%
Moroto	2,082	5,488	10.2%
Arua	4,645	10,837	8.8%
Moyo	2,009	2,656	2.8%
Fort Portal	1,564	8,278	-
Kasese	1,564	7,213	16.5%
Masindi	1,571	5,221	12.8%
Mbarara	3,844	16,078	15.5%
Kabale	11,239	10,919	0.3%

Source: Uganda National Report for
Habitat Conferences on Human
Settlement

APPENDIX (iv)

STRUCTURE OF INCOME GROUPS

Incomes per month in U.Shillings	Sub-group	Income group
Under 300	A Very Low	Low Income
300 - 499	B Low	
500 - 699	C Low	
700 - 999	D Low	
1000 - 1499	E Lower-Middle	Middle Income
1500 - 1999	F Lower-Middle	
2000 - 2499	G Upper-Middle	
2500 - 2999	H Upper-Middle	
3000 - 3999	I High	High Income
4000 - 4999	J High	
5000 - 5999	K Higher	
6000 and over	L Higher	

Source: Prepared by Ministry of Housing and
Public Building (1978)

APPENDIX (v)

RESIDENTIAL DENSITIES - KAMPALA DEVELOPMENT PLAN 1972

Density	Minimum Density		Maximum Density	
	Persons per hectare	Persons per hectare	Persons per hectare	Persons per hectare
Low	-	-	30	12
Medium-Low	30	12	75	30
Medium	75	30	150	60
Medium-High	150	60	250	100
High	250	100	-	-

Source: Kampala Development Plan (1972)

APPENDIX (vi)

ESTABLISHMENTS WHICH WERE OPERATING

AT THE TIME OF INTERVIEW

NAME OF ESTABLISHMENT	NO OF EMPLOYEES
1. Transocean Store	4
2. National Housing Co-operation Workshop	306
3. Gailey Roberts Workshop	138
4. Uganda Oxygen Limited	63
5. McKenzie Electromec Uganda Ltd.	10
6. Uganda Motor-Cooperation/Farm Machinery Distributors	50
7. Dairy Co-operation	187
8. Wigglesworth Workshop	20
9. Uganda Food Products	15
10. Kampala Industrial Furniture Service	5
11. U G I L	400
12. Standard Joinery Workshop	8
13. Frozen Foods Ltd.	7
14. River Nile Tea Company	17
15. Robbialac Paints	7
16. Uganda Chibuku Ltd.	10
17. Uganda Bottles Ltd.	5
18. Ministry of Internal Affairs/Workshop	1
19. Casements (Africa Ltd)	13
20. United Carbide Ltd.	65
21. Coffee Marketing Board	1,400
22. Uganda Fishnet Manufacturers	252
23. National Tobacco Co-operation	320
24. Uganda Meat Packers	70
25. East African Aluminium Works	7
26. Wico City Saw-Mills	15
27. Nile Beer	4
28. Uganda Blanket Manufacturers	3
29. Pepsi Cola Uganda Ltd.	57

APPENDIX (vi)

continued....

NAME OF ESTABLISHMENT	NO OF EMPLOYEES
30. Uganda Bati Limited	5
31. Multi-Engineering Works	15
32. Favourite Furniture Manufacturers	18
33. Victoria Engineering Works	21
34. Westo Mengo Growers Foffee Factory	2
35. E. African Furnishing House Workshop	5
36. Ministry of Works/Housing Workshop	400
37. Tea Blenders Uganda Ltd.	140
38. Uganda Bata Shoe Company	307
39. Fiat Garage	14
TOTAL	4,386

APPENDIX (vii)

ESTABLISHMENTS WHOSE EMPLOYEES RESPONDED

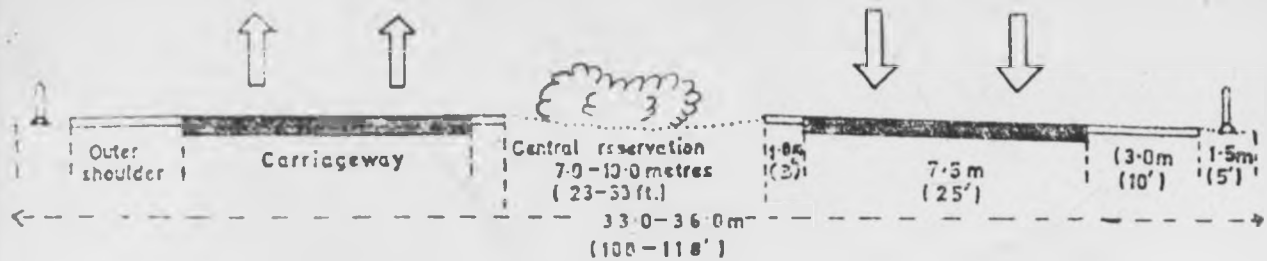
NAME OF ESTABLISHMENT	NO OF EMPLOYEES
1. Coffee Marketing Board	1,400
2. Casements Africa Ltd.	13
3. Uganda Bata Shoe Company	307
4. Uganda Fishnet Manufacturers	252
5. Uganda Meat Packers	70
6. National Tobacco Company	320
7. East African Aluminium Works	7
8. Multi-Engineering Works	15
9. Wood Industries Cooperation	15
10. McKenzie Electromec Uganda Ltd.	10
11. Wigglesworth	20
12. Frozen Foods	7
13. River Nile Tea Company	17
14. Standard Joinery	8
15. Uganda Food Products	15
16. Gailey and Roberts	138
17. National Housing Cooperation	306
18. Transocean Store	4
19. Dairy Cooperation	187
20. U G I L	400
21. Farm Machinery Distributors.	50
22. Uganda Chibuku Ltd.	10
23. Pepsi Cola Ugnada Ltd.	4
24. Uganda Bati Ltd.	57
25. Victoria Engineering Works	5
26. Blenders Uganda Ltd.	21
27. Ministry of Works/Housing Workshop	140
28. African Furnishing House	400

APPENDIX (vii)

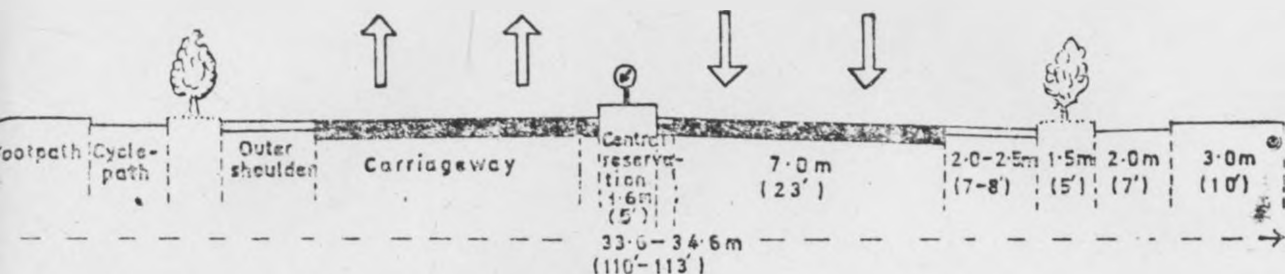
continued...

NAME OF ESTABLISHMENT	NO OF EMPLOYEES
29. Favourite Furniture Manufacturers	5
30. Uganda Blanket Manufacturers	3
31. West Mengo Cooperative Grower	2
TOTAL	4,226

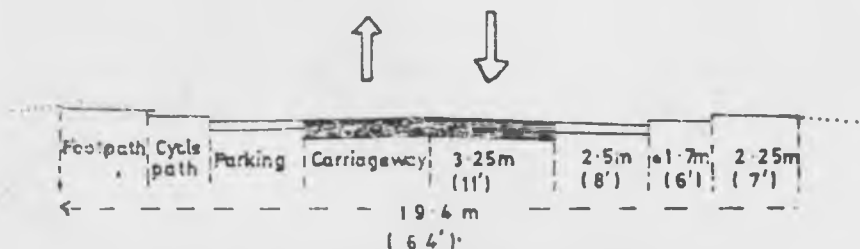
UNIVERSITY OF NAIROBI
LIBRARY



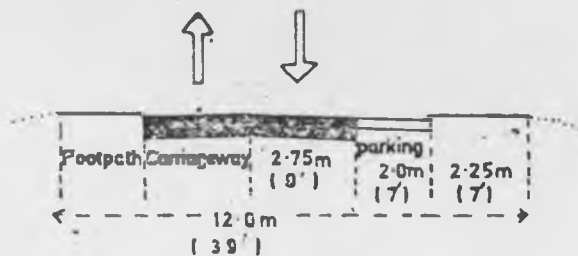
(a) MOTORWAY



(b) EXPRESSWAY



(c) MAJOR 2LANE HIGHWAY



(d) ACCESS ROAD

N.B. Most Primary Distributors will be built to Motorway or Expressway standard.
Most District Distributors will be built to Major Highway (2 or 4 lane) standard.

EXAMPLES OF STANDARDS OF ROAD CONSTRUCTION (cross sections)