RURAL-RURAL MIGRATION AND POPULATION CHANGE: A STUDY OF THE KERICHO TEA ESTATES COMPLEX IN KENYA

By

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DECLARATION

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

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CONTENTS

ABSTRACT

This study explores the nature, pattern and implications for rural development of rural-rural migration which, unlike the rural-urban component, remains a relatively virgin area of internal migration research as well as analysis in contemporary Kenya. It focuses attention on Western Kenya which ranks as one of the principal out-migration areas in the country; and is, for once, a welcome distraction from the more often studied rural-urban migration from which some questionable insinuations about the former generally emanate. Western Kenya in the context used here comprises eight districts of the defunct Nyanza Province prior to 1962: Kisii, Kisumu, Siaya and South Nyanza which make up Nyanza Province; Bungoma, Busia and Kakamega which constitute Western Province; and Kericho District in Rift Valley Province.

In physical and human environmental contexts, Western Kenya is a most distinctive geographical cum population entity exhibiting some conspicuous environmental problems often generating out-migration with which the region is associated. Even within the region itself, rural-rural migration of considerable spatio-temporal significance occurs between these districts and the Kericho tea estates complex situated in the only in-migration district here. However, the longstanding dominance of the tea complex is increasingly being challenged by other emerging economic islands of development in the region, notably the fast mushrooming sugar industry which reflects economic renaissance envisaged in rural industrialisation programme.

Contemporary migration literature is replete with analysis of rural-urban migration at the expense of rural-rural migration which, together with the former, are representative of the present phase of the

"mobility transition". This hypothesis, attributed to Wilbur Zelinsky, enriches the "demographic transition theory" which confines itself to fertility - mortality changes, and, like the latter, shows the dichotomy of migration types between the developed and the developing countries. Literature reviewed suggests that analysis of rural-rural migration is long overdue.

Based on a sample survey of the Kericho tea estates complex, the study makes findings and draws conclusions that contrast appreciably with those with which students of migration are familiar in rural-urban migration studies. A total sample of 944 respondents was drawn from a stratified random sampling design comprising 585 males, the bulk of whom are heads of households, and 359 females, primarily married females aged 15-49 years. Statistical testing of these primary data, using analysis of variance and non-parametric tests such as t-test, suggest that no significant difference exists between the two blocks of tea estates - the Brooke Bond Liebig Kenya Limited (BBLK) and the African Highlands Produce Company (AHP), and that the data are both viable and dependable enough for making rational inferences about the entire migrant population. Besides, secondary data, mainly census data, have been included to supplement the foregoing and to facilitate some comparisons. By using appropriate statistical and demographic techniques, objective interpretation of the data has been obtained.

The migration field of this rural-rural migration process is basically threefold. First, the core is Western Kenya itself which constitutes the primary and most important source area of migrants. The dominance of farther than nearer districts, due to historical and other peculiar factors, defies conditions expected to be fulfilled by theoretical assumptions. Second, the

immediate fringes of this core, made up of contiguous districts in Rift Valley Province, mainly marginal areas where a hostile environment triggers out-migration. Third, a small but significant proportion of international migrants originate from neighbouring lacustrine Uganda and Tanzania and as far afield as Rwanda whose migrants outnumber those from the two countries. In the process of analysis, emphasis is placed on internal migrants, especially those from the core migration field.

Analysis of the determinants of rural-rural migration rarely corroborates the stereotyped findings of rural-urban migration studies. For example, a vicious circle of regionally significant "push" factors underscores the determinants relevant in the study area; distance, though as inversely related with migration as in rural-urban migration, has but a weak influence and, in isolated cases, is irrelevant; and non-economic factors, such as the presence of relatives/friends ensures both reliable information about job prospects as well as a ready refuge for prospective migrants. But the overriding impact of economic factors is ascertained. A number of applied migration models - spatial interaction and socio-economic types - are found to be more theoretically fascinating than empirically convincing. Therefore, the rural-rural migration model constructed here incorporates both some stereotyped and a new set of factors recognised in this study.

The study recognises that migration and aggregate population change have adverse consequences in out-migration areas compared to positive ones in the tea estates complex. This situation, it is argued, is likely to be altered by several measures for regulating adverse aspects of population change, amounting to either eliminating out-migration or encouraging intra-regional migration, or both.

The conclusion drawn from the study is that increasing attention should be directed to rural-rural migration in order to have a more complete insight of contemporary internal migration, and one likely to persist in the foreseeable future. Consequently, it is argued that a meaningful policy on migration must of necessity be formulated only after the stock and flows of this migration process are articulated in the context of rural development.

LIST OF FIGURES

LIST OF TABLES

PREFACE

In the developing world available literature on internal migration is replete with and evidences unabating analysis of rural-urban migration, generally misconstrued as all that internal migration involves. Consequently, rural-rural migration has remained relatively neglected in spite of being also a significant aspect of internal migration. In order to deviate from this long trodden research path and shed some light on the neglected but important area of research concern, the present study constitutes a welcome departure. It is intended among other things to form the basis for further research, primarily expected to explore various features of this virgin research area. Furthermore, its findings are likely to throw considerable light on traditional-modern sector links different from urban-rural links with which migration studies have been preoccupied.

Fieldwork for this study was spread over a period of one year during which both primary and secondary data were mounted. Primary data that constitute the cream of the study were collected between August 1978 and August 1979, with brief periods of discontinuity to accommodate the tea companies' operations in the study area. Secondary data are derived mainly from the 1969 census as well as office records; but the 1979 census data were ignored because they were not only still being processed, but were also provisional at the time of writing the study. However, some of the 1979 census data have been used whenever they help to clarify analysis.

Successful completion of this study is the culmination of efforts of various persons as well as institutions without whom my personal efforts would have been futile. While I am indebted to all of them, I can only, due to lack of space, acknowledge a few of them by name. I am

most grateful to all those involved in the tea industry in Kericho area: to the Executive Officer of the Kenya Tea Growers' Association for co-ordinating my fieldwork with the two companies' activities; and the two companies' staff, particularly Messrs Silas Nyaoke and Sam Lasoi of Brooke Bond Liebig Kenya Limited, Mr. William Kettienya of African Highlands Produce Company and the rank and file of the labour force amongst whom I worked successfully. Their understanding co-operation and devotion to answering lengthy questionnaires resulted in the success of fieldwork, availability of basic data and, consequently, the compilation of the study itself. Also instrumental in this phase were my research assistants whose untiring efforts weathered the cold, wet Kericho climate, often at its worst in the evenings when they were at work. Yet fieldwork would have not materialised without consistent financial support from both the Deans' Committee Research Grant and the Population Studies and Research Institute Grant of the University of Nairobi to which I am most grateful. I owe a special debt of gratitude to my supervisors, Professor Simeon H. Ominde, Director of Population Studies and Research Institute and Professor Roushdi A. Henin, Visiting Professor of Demography in the same institute, both of whom provided much intellectual stimulation and guidance during the preparation of this study. Their wise counsel, criticism and support went a long way in shaping the present work. I am also grateful to the Department of Geography, particularly its Chairman, Professor F. F. Ojany, for creating an atmosphere conducive for work and Dr. Mohammed Hasan for offering useful criticisms on my first draft. I wish to thank Messrs Michael Mwangi and Sam Okumu for their cartographic support cum advice and Mrs. Felgona A. Onunga for typing the final manuscript. Finally, I am most thankful to members of my family: Jenipher and Margaret for their warmth and encouragement during this gruelling undertaking; and my children Adhiambo, Were, Oucho Jr.,

Arika, Owandho and Otieno for foregoing outings during my immersion in writing up the study. Last but by no means least, I am indebted to my late mother, Agnes Owandho, for wishing me well in this work even in her death bed. But the foregoing are by no means responsible for any analytical shortcomings of this work, for which the author alone bears responsibility.

CHAPTER I

CHAPTER I

INTRODUCTION

Internal migration has been the most extensively studied component of population dynamics and certainly the one often considered in the context of a wide range of socio-economic phenomena which influence it and are in turn influenced by it. Nearly a century has now elapsed since the originator of modern migration study, E.G. Ravenstein, wrote his two classic papers on "the laws of migration" which have not only stood the test of time, but also remained the starting point of contemporary theoretical as well as empirical work on migration (Ravenstein, 1885; 1889). A cursory exploration into available literature will show an impressive stock of empirical research and studies; but migration theory has virtually been abandoned as students of migration continue to construct models hardly based on theory. It may be confessed at the out-set that in a study of this kind there has to be careful choice of issues to include within the frame of analysis, and that even those excluded may be equally, if not more important.

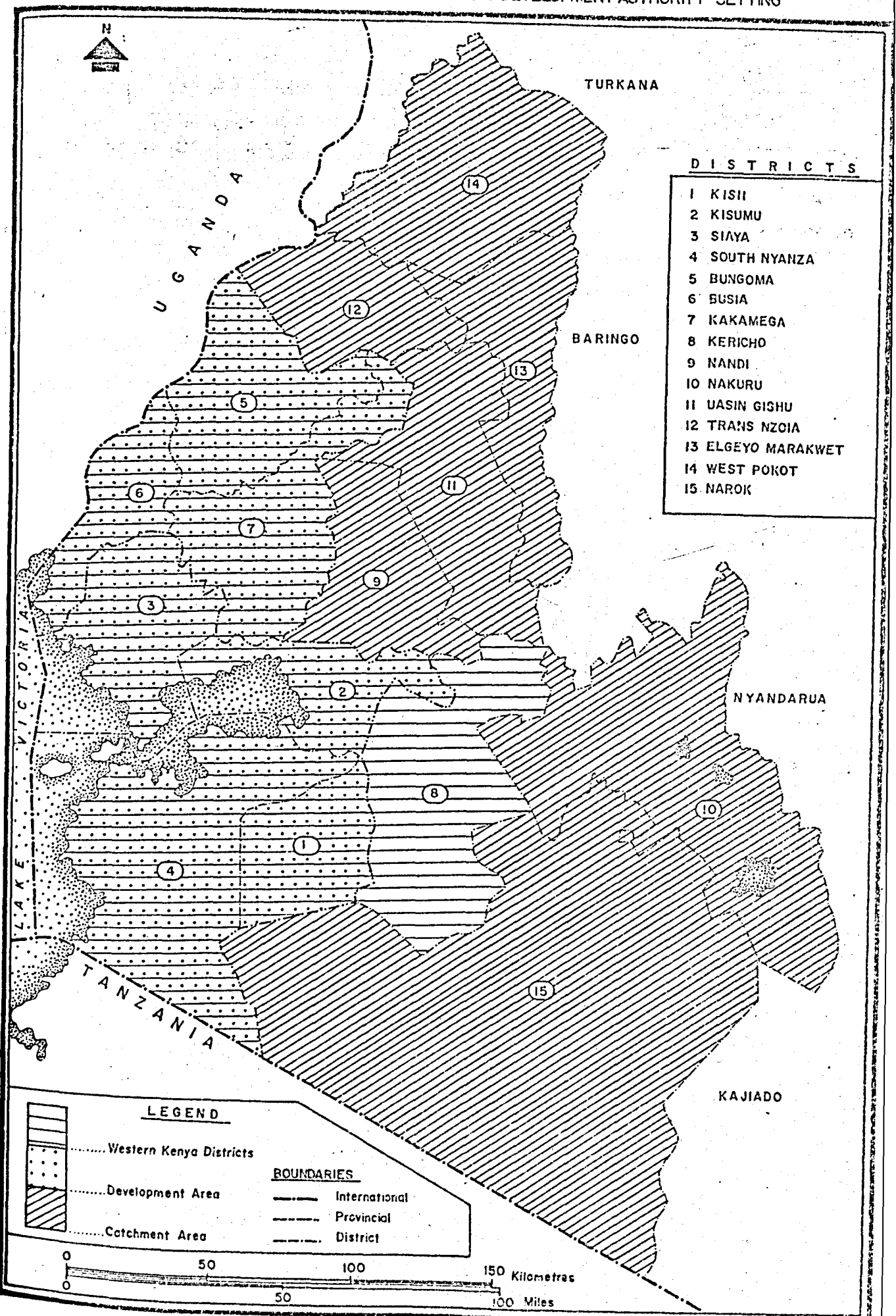
This opening chapter presents a bird's eye view of what the present study undertakes. It starts by shedding some light on the environmental background to the study area in Western Kenya. The background is instructive not only for depicting physical and human attributes of the environment thereby understanding its nature, endowments and constraints, but also for appreciating the process of rural-rural migration which has continued unabated since the introduction of dual economy in modern Kenya. Among other things, the first section of the chapter explains the origin and growth of the tea industry which has generated a consistently expanding volume of migration streams from the traditional

sector of economy, and discusses briefly the suitability of the area for this study. The second part of the chapter considers the nature and scope of the problem being studied. This includes a modest array of problem - centred issues ranging from a general statement of the problem itself through objectives, hypotheses, definitions as well as scope and limitations of the study to the structural organisation of the thesis itself. From the foregoing it may be realised that this opening chapter presents a broad overview of both the study area and the study problem.

1.1 ENVIRONMENTAL BACKGROUND TO THE STUDY AREA

In order to have insights into the study area it is necessary to portray the environmental background of Western Kenya of which it is only a small but distinctive part. Unless clearly defined and depending on the context in which it is applied, Western Kenya may be a very elastic geographical area. In popular usage, it is generally defined as the whole area west of Nakuru focussing on Kisumu of which it constitutes an elusive hinterland[1]. This is the context in which the area is defined within the framework of the Lake Basin Development Authority (LBDA) which encompasses several districts (Figure 1). Obviously, this is an ambitious definition which, while appropriate for the integrated and comprehensive development programmes envisaged in the region, does not suit the purposes of this study. In conventional definition and the one adopted in this study, Western Kenya covers the seven districts in the LBDA's "development area" together with Kericho district all of which formed the defunct Nyanza Province throughout the episode of colonial administration in Kenya (Figure 1). The present administrative boundaries of the

Fig.1 WESTERN KENYA IN THE LAKE BASIN DEVELOPMENT AUTHORITY SETTING



component districts were defined only a year before independence in 1963 and thereafter. They reflect the cultural outlook of Kenya's provinces in which single ethnic groups are predominant: the Luo in Nyanza, the Luhya in Western, the Kalenjin in Rift Valley, the Kikuyu in Central, the Kamba in Eastern, the Mijikenda in Coast and the Cushitic speakers in North Eastern. This is an important consideration in both cultural and ecological terms. Of the eight districts making up Western Kenya, only South Nyanza retained its boundaries at the time of boundary changes (Table 1.1). Neighbouring districts annexed portions of each other, Kericho losing equal proportions of its area to Kisii and Kisumu/Siaya Districts and Uasin Gishu Districts. Both Bungoma and Busia Districts emerged from the defunct Elgon Nyanza and North Nyanza Districts, the former gaining a sizeable chunk of the neighbouring Trans Nzoia District. Although Western Kenya accounts for only 4.5 percent of the total area of Kenya, it has a sizeable proportion of the country's population. The last two censuses show that it accounted for 35,9 percent in 1969 and 33.3 percent in 1979 of the total population.

1.1.1 Physical and Human Environment of Western Kenya

The configuration of economic and other activities which influence migration patterns in Western Kenya is a function of endowments and constraints of both physical and human environments. In discussing characteristics of physical and human environments, emphasis will be placed on the impact of the interplay of demographic variables and environmental conditions on migratory behaviour of the Western Kenya population. Salient features of the physical environment of Western Kenya that require analysis are physiographic framework, drainage system, pedological conditions, climatic regime and vegetation and ecological conditions. All these directly influence all human activities, ultimately engendering differential propensity to migrate.

Table 1.1 Area and Adjustments for District Boundary Changes (1962-1969) for Western Kenya Districts, 1980.

District	District Sizes[a]			Old Districts and Adjustments[b]
	Area in Sq. Km.	Percentage of Western Kenya Total	Rank	
Kisii	2,217	8.6	6	Kisii + (.02xKericho)
Kisumu	2,082	8.0	7	(.89xCentral Nyanza)+ (.04 x North Nyanza)+
Siaya	2,535	9.8	5	(.02 x Kericho)
South Nyanza	5,793	22.4	1	South Nyanza
NYANZA PROVINCE.	12,628	48.8		
Bungoma	3,046	11.8	4	Elgon Nyanza + (.09x North Nyanza)+(.12 x
Busia	1,680	6.5	8	Trans Nzoia)
Kakamega	3,558	13.8	3	(.86 x North Nyanza)+ (.11xCentral Nyanza)+ (.06 x Uasin Gishu).
WESTERN PROVINCE	8,276	32.0		
Kericho	4,948	19.1	2	(.87 x Kericho)
WESTERN KENYA	25,852	100.0		

Sources: (a) Extracted from available statistics: Kenya Population Census 1969.

(b) Extracted from Huntington, H. G. 1974, p. 152.

(a) The Physical Environment

The physiography of Western Kenya is dominated by the basic structural framework represented by two blocks of plateau of complex morphology which are separated by the Nyanza Rift Valley. It consists of five physiographic regions (Figure 2): the Nyanza Rift Zone and Lake Lowlands bordering the lake and lying at an altitude generally below 1,219 metres (4,000 feet), a region experiencing floods and drought conditions during wet and dry seasons respectively; the peneplain, often referred to as plateau ranging in altitude from 1,219 to 1,829 metres (4,000 to 6,000 feet); the Highlands comprising the residual erosion upland "massif" of Kisii Highlands and the volcanic Kericho Highlands, lying at 1,829 - 2,438 (6,000 - 8,000 feet), the highest point of this unit being Mount Elgon rising to 4,311 metres (14,140 feet) above sea level. Geormophologists hold that the peneplain is the remnant of sub-Miocene surface, the depression dividing it being occupied by the Lake Victoria (Ouma, 1971:30).

Draining the Lake Victoria Basin are several rivers (Figure 2). The "north catchment area" is drained by the Nzoia, Yala and Sio rivers which cause frequent floods in their flood plains, causing environmental constraints that sometimes trigger out-migration. Within the "south catchment area" are the rest of the rivers, among them the Nyando which is notorious for persistent floods rendering its flood plain inhospitable thereby intensifying the propensity to migrate. The multi-purpose potentiality of these rivers, once realised, will be instrumental in stabilising population and avoiding out-migration, a liability to the development of the area (Table 1.2).

Pedological pattern of Western Kenya is indicative of varying agricultural potential which has considerable influence on the carrying capacity of the land. This pattern

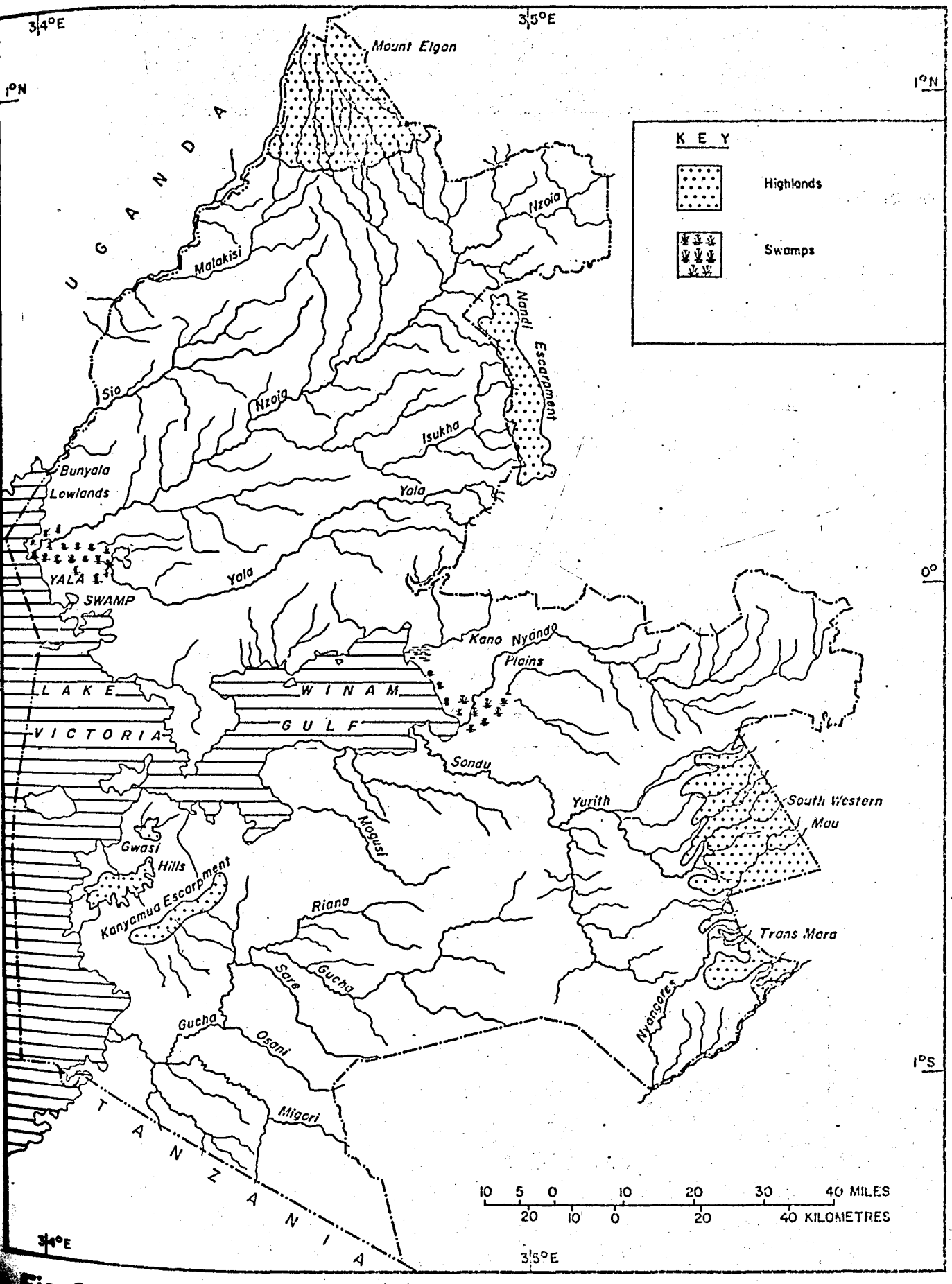


Fig. 2: PHYSIOGRAPHY AND DRAINAGE OF WESTERN KENYA.

may be best understood when considered in the context of the physiographic regions already discussed. Within the Nyanza Rift Zone and the Lake Lowlands, there are lithosols (shallow stony soils) and regosols characterised by alluvium; lacustrine deposits and peaty swamps, patched with well drained dark red friable clays; and dark red to red loamy sands (latosolic soils) of humid regions (Scott, 1969 95-105). Their limited agricultural potential, coupled with low and unreliable rainfall, is crucial in migrants' perception of adverse environmental conditions. On the gently undulating and level topography of the peneplain, there are soils with impeded drainage, such as dark brown clays (grumosolic soils) (Scott, 1969). Like the foregoing, these soils have limited agricultural potential despite receiving more rainfall. In the heavy rainfall highland areas, latosolic soils are predominant, ranging from dark red to loamy sands of sub-humid region found in much of Kakamega, Kisii and the whole of Kericho Districts where volcanic lavas have weathered into deep rich friable loams to the well drained dark brown loams (ando like soils) and reddish yellow sandy clay loams (latosolic soils) of humid region found in the immediate slopes of Mt. Elgon (Scott, 1969). Their high carrying capacity has resulted in considerable agricultural productivity (especially in Kakamega and Kisii Districts)but in the face of phenomenal population densities threatening the economic potential of these fertile areas.

The most controlling component of the physical environment is climate. Description of the Lake Victoria Basin climatic type as "modified equatorial climate", where there is no really dry season, masks significant discrepancies arising from the micro-relief regions (Ojany and Ogendo,1973 : 68). Both temperature and rainfall improve with altitude in the area. Kisumu town on the lake records the mean maximum temperature of 29.4^{o}C (84.9^{o}F)

Table 1.2 Some Characteristics of Major Rivers in Western Kenya.

Rivers	Length (Km.)	Basin Area (Sq. Km.)	Description
Nzoia	258	12,960	Flooding on Bunyala lowlands almost every long rainy season.
Yala	177	2,600	Enters the lake through a swamp now reclaimed for commercial farming.
Nyando		3,709	Causes frequent flooding on Kano Plains almost every long rainy season.
(Miriu)* Sondu	110	5,200	Relatively uneventful in terms of either endowments or constraints.
Kuja	89	5,200	Offers the greatest hydro-electricity potential in the area; also uneventful.
Mara	290	7,770	By far the largest river but drains into Lake Victoria through Tanzania Mainland.

*The Luo, using downstream water, call it Miriu and for the Kipsigis, using upstream waters, its name is Kipsonoi.

Source: Statistical information only - F.F. Ojany, 1971, Table 12(1), p.139.

decreasing to the mean minimum of 17.1°C (62.8°F) compared to Kericho in the highlands recording 24.0°C (75.2°F) and 11.1°C (52.0°F) in the hottest and coldest seasons respectively (Ojany and Ogendo, 1973 : 67). Moderate temperature conditions exist between the two extremes. Western Kenya is a high rainfall area with no appreciable dry periods but where two peaks may be distinguished, namely, the long rainy season in March-June and the short rainy season in August to September. Rainfall amounts increase with altitude (Figure 3). The heaviest rainfall occurs in the highlands, Kisii District receiving a mean annual rainfall of upto 2,032 millimetres (80 inches), followed by Kericho Highlands where 1,778 mm (70 inches) are received. Lower down, the peneplain receives amounts in the neighbourhood of 1,524 - 1,778 mm (60-70 inches) mostly recorded in Kakamega and Bungoma Districts. The rest of Western Kenya receives less than 1,270 mm (50 inches) with the immediate lakeshore areas where an all time low of 762 mm (30 inches) is typical. While in the lakeshore areas there is probability of receiving 508-762 mm (20-30 inches) and the peneplain 762-1, 270 mm (30-50 inches), this increases in the highlands to over 1,270 mm (50 inches) in four years out of five. Thus both rainfall probability and reliability are consistent with the mean annual totals; the higher the latter the greater the probability as well as reliability of rainfall occurrence[2]. The impact of climate on geomorphological conditions, soils and the economy of Western Kenya and its perceptible effects on the population cannot be overemphasised.

Elements of the physical environment just considered as well as human factors have acted in combination to create three broad ecological zones (Figure 3). These are the Savannah (Combretum - Hyparrhenia) area where scattered Tree Grassland, or, more precisely, Low Tree-High Grass, is predominant; the High Rainfall Savannah (Acacia - Combretum) zone covering much of the peneplain; and the Kikuyu/Star

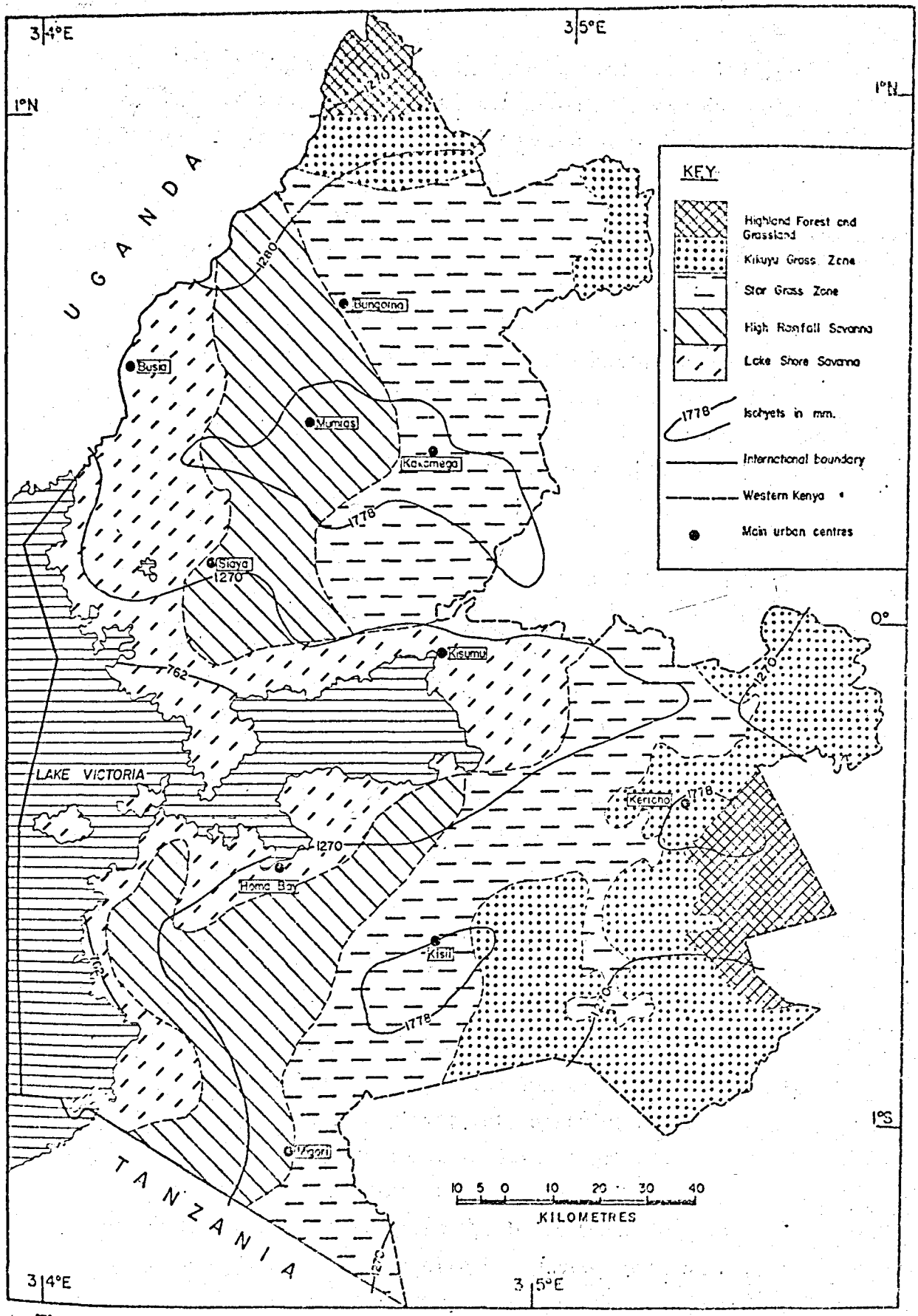


Fig.3: MEAN ANNUAL RAINFALL AND ECOLOGICAL ZONES IN WESTERN KENYA DISTRICTS

Grass zones which have promising agricultural potential[3]. The first and most extensive of these zones is paradoxically the least economically viable and consequently the one where population is most prone to migration.

(b) The Human Environment

Analysis of environmental background would be incomplete without some insights into the human environment. Apart from the demographic background already presented, the "cultural landscape", embodying a host of human activities is also discussed, identifying those aspects that are involved in the migration process.

In demographic terms, the boundaries of Western Kenya include the Lake Victoria Basin population cluster one of the most distinctive population regions in Kenya[4]. Some important aspects of demographic trends and population density as well as change are closely associated with population redistribution in general and migration in particular (Table 1.3). Population densities have to be seen within the framework of both the proportion of arable land which, though abundant, is burdened with rapidly increasing population vis-a-vis diminishing per capita high-potential land shown in brackets: South Nyanza (0.9), Busia (0.8), Kericho (0.8), Bungoma (0.7), Kisumu and Siaya (0.6), Kakamega (0.4) and Kisii (0.3)[5]. It can be seen that districts with fertile land, excepting Kericho, have the lowest per capita high-potential land, a situation likely to worsen in the next few years; yet, district densities mask the extremes at locational levels (Figure 4). As population densities continue to increase rapidly in an essentially limited area, given the local technological advancements in the face of unlikely boundary extensions, pockets of population pressure which have emerged are expected to exacerbate causing widespread population redistribution

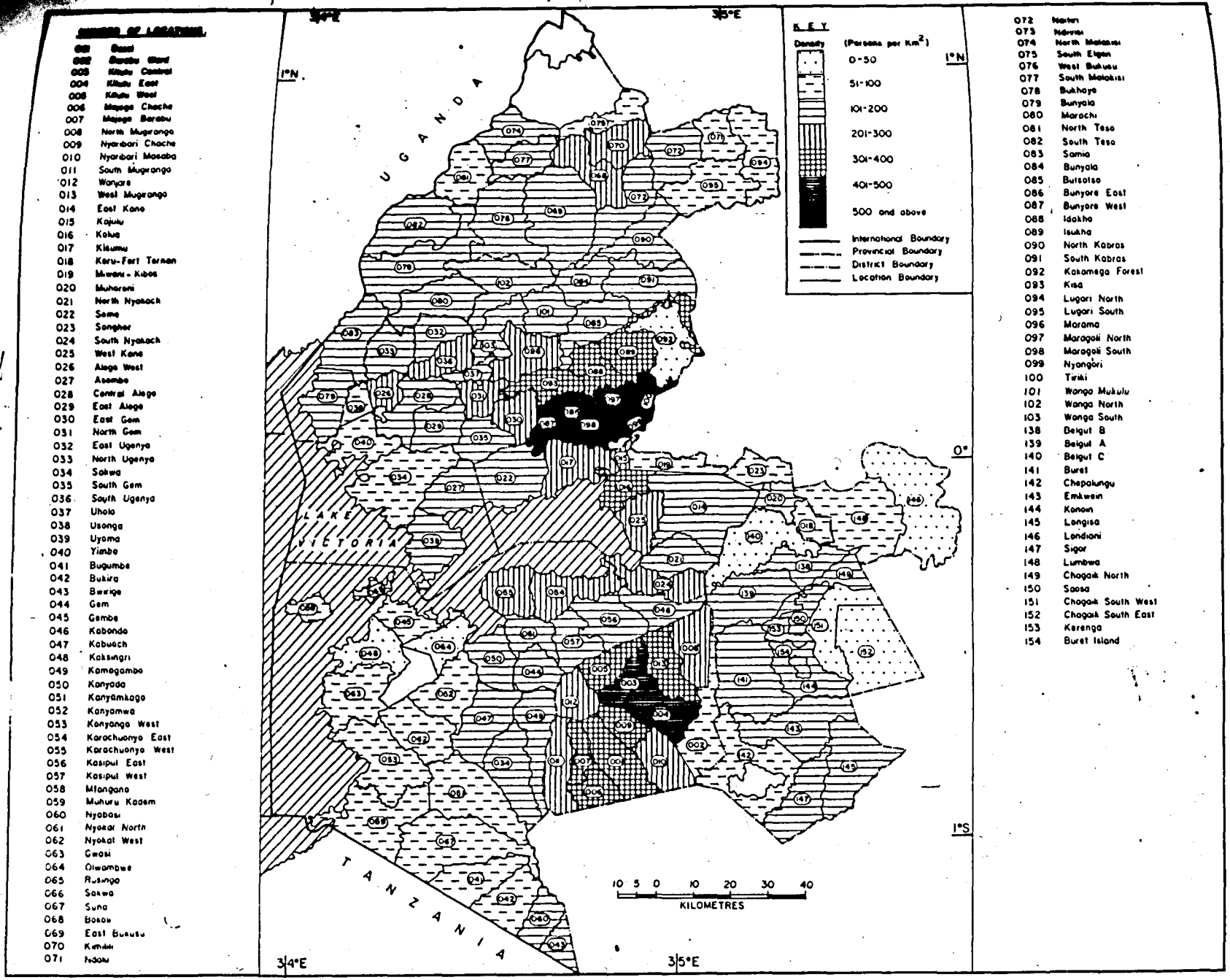


Fig. 4: POPULATION DENSITY IN ADMINISTATIVE LOCATIONS IN WESTERN KENYA (FROM 1969 POPULATION CENSUS)

in which the volume of migration streams would increase correspondingly. Along the lakeshore where ecologically unfavourable areas are less densely settled, out-migration is triggered by a different set of factors. Responsiveness of Western Kenya population to conditions that compensate ecological hostility and the prevalence of an adverse"demographic quotient" is a feature that will recur in different parts of this study[6]. As an index of population-resource relationship, the concept is crucial in the analysis of resource development in an area inhabited by population prone to out-migration.

Culturally, the population of Western Kenya exhibits some very interesting features. There are two broad indigenous linguistic groups exclusively inhabiting districts of their own (Figure 5). The first group comprises the Lacustrine (Western) Bantu, namely, the Luhya living in Western Province; the Kisii who inhabit the district with a similar name and; the Kuria in Nyanza Province. Second, a diversified group of Nilotic peoples: the Lacustrine Nilotes who are exclusively Luo inhabiting the largest chunk of Nyanza Province; the Kalenjin - speaking group of Highland Nilotes who include the Kipsigis of Kericho District and the Sabaot on the slopes of Mt. Elgon in Bungoma District; and the Teso (Plain Nilotes) in Busia District of Western Province. In 1969, the Luo and the Luhya, who are among the most spatially distributed peoples due to their migratory behaviour, accounted for nearly 70 percent of all these linguistic groups in Western Kenya. Ranking third and fourth respectively to them are the Kisii and the Kipsigis who over the years have exhibited and continue to exhibit low propensities to migrate outside their traditional habitat. The rest are numerically insignificant and generally sedentary. Thus there is very close relationship between both physical and human environments where a dichotomous cultural landscape has been created.

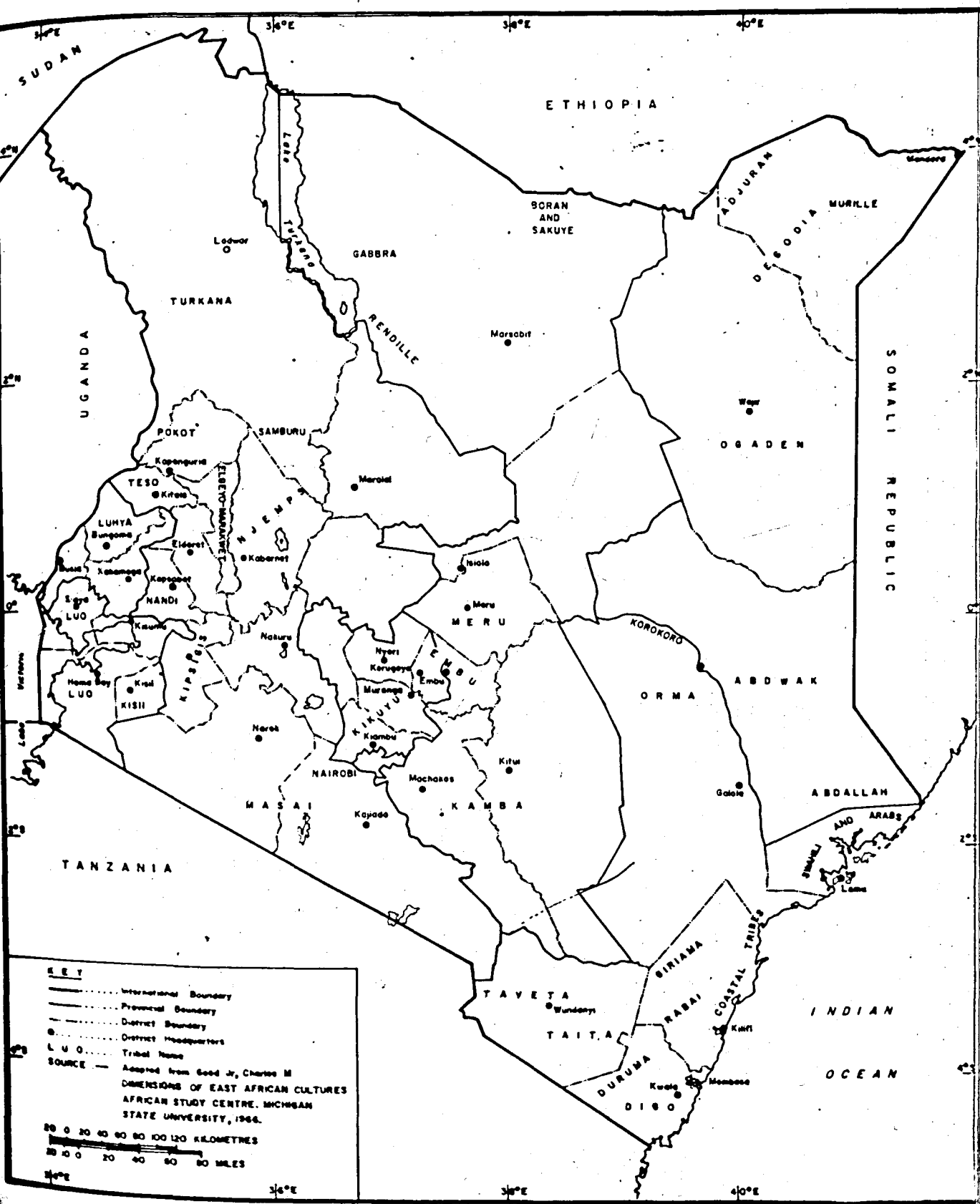


Fig.5. TRIBAL UNITS AND NAMES IN KENYA.

Table 1.3 Population Size, Distribution, Density and Change in Western Kenya Districts, 1969 - 1989

District	Area in Sq. Km.	Population ('000) [abc]			Population Density (persons/Km^2) [abc]		Change in Percent [abc]	
		1969	1979 [d]	1989 [e]	1969	1979 [d]	1969-79	1979-89
Kisii	2,217	675	867	1388	304	391	28.4	60.1
Kisumu	2.082	401	480	863	192	231	19.7	79.8
Siaya	2,535	383	472	768	151	186	23.2	62.7
South Nyanza	5,793	663	815	1418	114	141	22.9	74.0
NYANZA PROVINCE	12,628	2122	2634	4437	168	209	24.1	68.5
Bungoma	3,046	345	503	799	113	165	45.8	58.8
Busia	1,680	200	300	398	119	179	50.0	32.7
Kakamega	3,558	783	1033	1696	220	290	31.9	64.2
WESTERN PROVINCE	8,276	1328	1836	2893	161	222	38.3	57.6
Kericho	4,948	479	635	1036	97	128	32.6	63.1
WESTERN KENYA	25,852	3929	5105	8366	152	197	29.9	63.9
Percent of Kenya.	4.5	35.9	33.3	42.3				

Table 1.3 Continued...

Sources: (a) Republic of Kenya: Population Census 1969, Vol. I, Table 1 (1970), pp. 1-2.

(b) Provisional results of 1979 census published in The Daily Nation, November 27, 1979, p.1.

(c) Population Studies and Research Institute: Population Profiles for the Districts of Kenya, PSRI, University of Nairobi (Monograph), nd.

(d) Provisional census figures have been used to compute provisional density for districts whose sizes remained constant in the period 1969-79.

(e) Projected population for 1989 and decennial change in the period 1979-89 are based on low projections where it is assumed that
(a) there will be no change in fertility, and
(b) a steady decline in mortality would give rise to further rise in life expectancy for both sexes from 43 years in 1969 to 53 years in 1980.

(c) The Cultural Landscape

Throughout history, human societies have consistently influenced and been influenced by environmental processes resulting in conditions as we see them today. Consequently, the pristine environment has changed into the "cultural landscape" which denotes a transformed landscape due to the role of man in changing the face of the earth (Sauer, 1956). Aspects of this include the emergence of secondary vegetation and ecological conditions where the original ones have been altered or destroyed; the rise of large-scale plantation system of agriculture in what was a jungle before; the creation

of urban centres and their inherent infrastructure where rural communities predominated before, and so on. (Figure 6). The significance of cultural landscape of Western Kenya may now be highlighted.

A major feature in this tropical environment is plantation agriculture. This is mainly a function of the contact of European and indigenous societies both of which, at its inception, exchanged some positive artefacts which helped in shaping it (Lebon, 1966 : 148). A dichotomous agricultural economy is evident, represented by commercial farming of the modern sector on the one hand, and subsistence farming of the traditional sector on the other. In the former, two major belts of crop cultures consist of tea plantations on the highlands extending from Nandi Hills in the north-east through Kericho Highlands to Kisii Highlands in the South-West; and extensive sugar farms forming isolated belts in the Miwani - Chemelil - Muhoroni and Awendo areas of Nyanza Province and Mumias - Nzoia area in Western Province. Other commercial crops include coffee, bananas, pulses, pyrethrum, macadamia nuts, passion fruit and, on the lowlands, cotton. Both tea and sugar cane plantations have been heavily dependent upon cheap and readily available labour from subsistence farming districts, especially those along the lakeshore. But between the two tea plantations have longer history and thus have had more entrenched influence in traditional reservoirs of cheap labour. These areas produce economically less rewarding crops such as maize, sorghum, white millet, groundnuts, pulses and root crops. Thus within time and space there have developed migration streams between these two interdependent areas whose proximity to each other probably causes certain aspects of inter-dependence to persist.

Contemporaneous urbanisation in Kenya and Western Kenya for that matter shows an interesting paradox. Although urban areas account for only a minor proportion of urban/rural

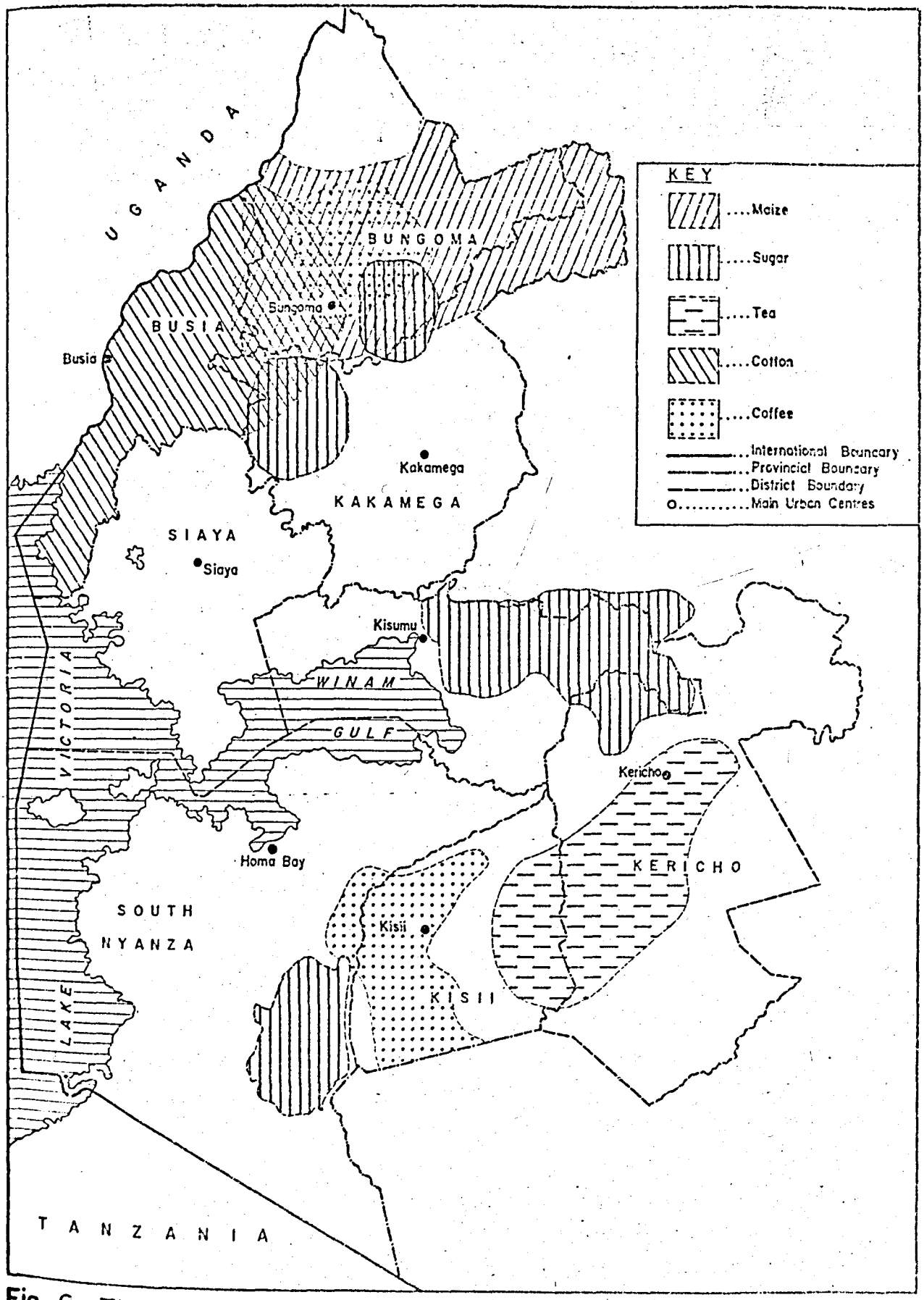


Fig. 6. THE CULTURAL LANDSCAPE OF WESTERN KENYA DISTRICTS.

population distribution, their rate of growth is distinctively rapid. This is attributable to Kenya's position in the "demographic" and "migration transitions" whereby high fertility generally cancelled by declining mortality results in a fast natural increase, causing the preponderance of youthful population which is by far the most migratory age-group and engendering considerable rural-urban migration which has been partly responsible for rapid urbanisation[7]. At the apex of urban hierarchy in Western Kenya is Kisumu town whose increase of popualtion from 32,431 in 1969 to the provisional 1979 census count of 150,000 represents an annual growth rate of 16.6 percent or intercensal change of 78.3 percent. Next to it in the hierarchy are Kericho whose population increased from 10,144 in 1969 to 30,000 in 1979 representing an annual increase of 11.5 percent or inter-censal change of 66.2 percent; Kakamega which increased from a mere 6,244 in 1969 to 32,000 in 1979 and thus grew at an annual rate of 17.8 percent or a change of 10.5 percent and Kisii whose increase from 6,080 in 1969 to 31,000 represents an annual growth rate of 17.7 percent or intercensal change of 80.4 percent. These dramatic growth rates and population changes are due to both migration and boundary extensions. The thriving rural industrial towns such as Webuye and the sugar towns also experienced phenomenal population growth. At the base of the hierarchy are smaller towns, with 1969 population shown in brackets: Bungoma (4,401), Homa Bay (3,252), Londiani (2,994), Kipkelion (2,577) and Migori (2,066).

This process of urbanisation is due mainly to rural-urban migration which is in keeping with the phase of "migration transition" in the developing countries. As spatial physical planning among other things undertakes to create more "growth centres" that would organise regional economy and encourage intra-regional mobility in which human resources would benefit the region of provenance, extra-regional migration streams could be dammed at their origins without any coercive measures for solving the problem.

1.1.2 The Study Area in Western Kenya Setting

In the preceding section the environmental background has been too comprehensive to throw enough light on the study area itself. The present section highlights those features of the study area that have only been scratched over, identifying those peculiar to it within the wider setting of Western Kenya.

The study area is the Kericho tea estates complex extending on all sides of Kericho town, the major focus of the tea industry in Western Kenya (Figure 7). It is a homogeneous expanse of tea growing area where plantations form an extensive green carpet only dotted in places with factories and housing units built for the labour force. The complex comprises several components: the field department which consists of tea estates where the bulk of unskilled labour force is engaged; a separate unit of factories processing tea leaves plucked from tea farms and in which skilled and semi-skilled manpower is employed; and the administrative unit consisting of sub-units facilitating general administration, providing medical services and incorporating technical services including engineering and applied research. (Table 1.4).

The Brooke Bond Liebig Kenya (BBLK), a name most associated with Kenyan tea, claims a larger share of each of the three operational units. However, this does not necessarily explain differential sizes of these units. Also, the dominance of tea estates, on which other units must of necessity depend, suggests their importance as the major source of employment opportunities particularly for cheap, unskilled labour within the study area. This fact is of considerable significance because the main thrust of this study is unskilled labour encountered in both tea estates and factories which underscore the labour-intensiveness of the tea industry. It is important to stress that the administrative/technical unit

Fig.7 LOCATION AND EXTENT OF KERICHO TEA ESTATES COMPLEX

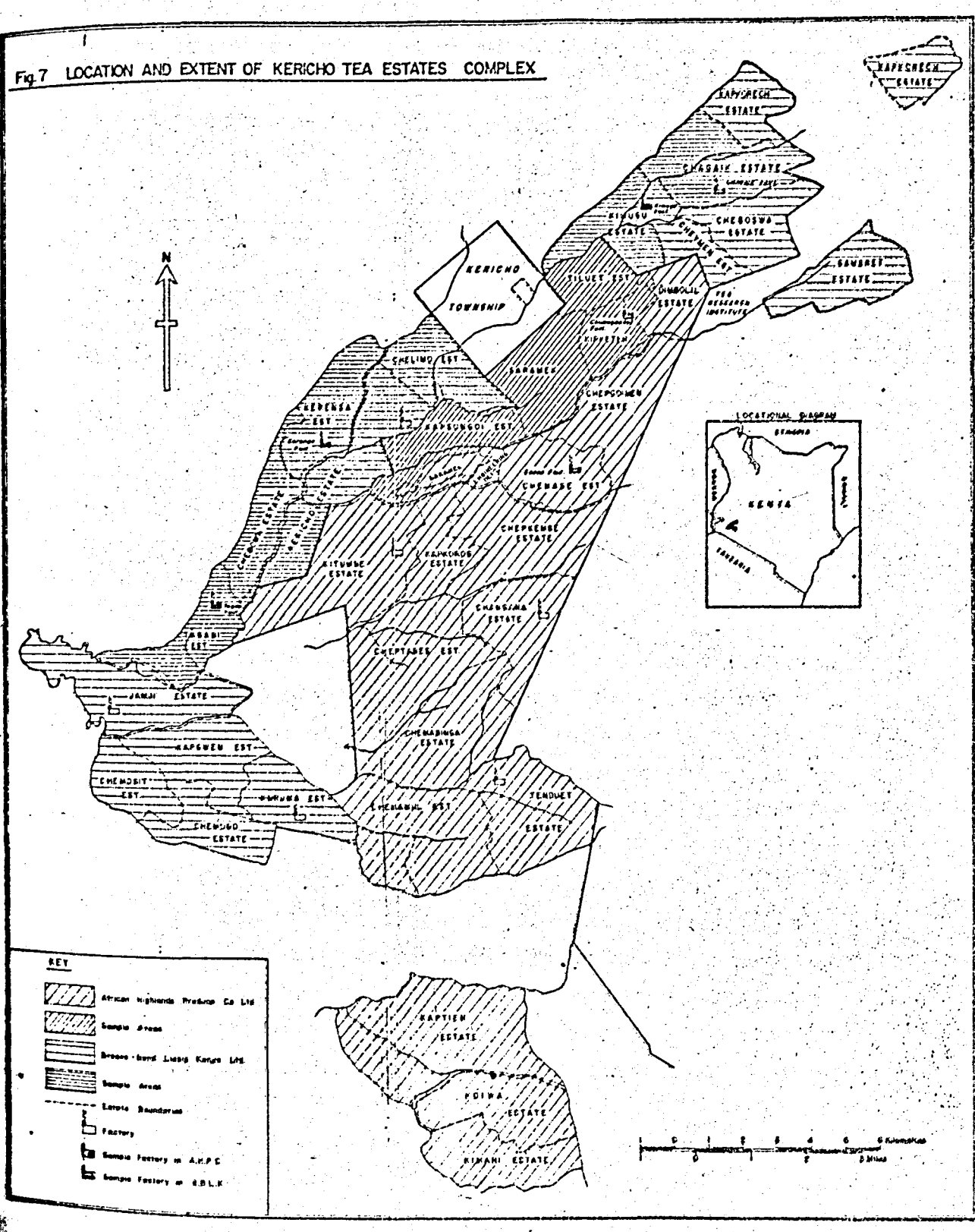


Table 1.4 - Distribution of Operational Units of the Tea Industry in Kericho Tea Estates Complex, 1977-79.

Operational Unit	Distribution by Tea Company (Number)		
	Brooke Bond Liebig Kenya (BBLK)	African Highlands Produce (AHP)	Both BBLK and AHP.
Estates	22	17	39
Factories	10	6	16
Administrative/ Technical	6	4	10

is dominated by generally skilled population, largely similar to those encountered in rural-urban migration with which this study is not concerned.

The mosaic of tea estates, factories, villages and ancilliary services in the heart of formerly thickly forested area constitutes one of the most distinctive features of cultural landscape in the country and, indeed, conspicuously so in Western Kenya. It is situated on the Westernmost extension of the Kenya Highlands (formerly the "White Highlands") in the heart of Kipsigisland which was alienated from the indigenous population during the colonial period for purposes of instituting a "mobilised periphery" within the broader framework of "centre-periphery" model of development[8]. It is bordered on the east by the Mau forests which coalesce north-westwards with the Londiani forests; on the north and north-west by a mixed farming area where the rapidly expanding sugar belt now encroaches on formerly subsistence farming area as well as "Scheduled Area"; and on the south by the densely populated Kisii district and the more marginal Narok district. As discussed earlier

(Figure 3), it is a high rainfall area which receives mean annual rainfall of 1,778 mm (70 inches) or more, well distributed throughout the year coupled with very rich volcanic soils which produce both food and cash crops in great quantities. The area is similar to Kisii district but for its lower population densities, more distinctive development of extensive tea plantations and more attractiveness to migrant labour, being a modern sector of the economy. Within the Rift Valley alone the Kericho Tea Estates complex accounts for about 70 percent of the total acreage under tea. Smaller tea growing areas are found in Nandi, Nakuru and Trans Nzoia districts as well as Londiani-Kipkelion area in Kericho district itself. But it is difficult to determine the actual size of the study area because of fluctuations from time to time of tea acreages, and because increasing portions of the area formerly reserved for tea are now being occupied by newly introduced crops such as cinchona. Adjoining this commercial tea growing complex is the tea growing area under small-scale farming which exhibits substantially different characteristics as a study of the undertaking reveals (Odingo, 1973). Among the major contrasts are employment opportunities, scientific and technological inputs, amount of yields and stages of tea processing where the study area excels the adjoining small-scale farming areas. Although more than 2,500 square kilometres around Kericho is ecologically suitable for tea, only the study area has earned undisputed reputation in the tea industry throughout Kenya.

1.1.3 Origin and Growth of Tea Industry in the Area.

Both origin and growth of the tea industry must not be explained in the context of colonisation and its inherent features alone[9]. Admittedly, the instruments of colonial administration played a crucial role in the alienation of the area for plantation agriculture. But its emergence as the most important tea producing area in Western Kenya and,

indeed, the whole country must also be seen in the light of favourable ecological conditions vis-a-vis the abundant reservoir of cheap and regular labour in the immediate vicinity. The second factor is particularly an important element of this labour-intensive industry.

The physical environment of Kericho Highlands already underlined is most conducive for tea production. Among the tropical plantation crops, tea and coffee grow best in the moderate altitudes in the range of 1,219-1,829 metres (4,000-6,000 feet), the former growing at higher altitudes because among other things it can withstand frost. Tea also performs well with a mean annual rainfall of 1,524 - 1,778 mm (60-70 inches) well distributed throughout the year, coupled with invariably cool temperatures. The rule rather than the exception in Kericho area is cool and wet climate all the year round without any appreciable dry spells hence its suitability for tea and other tropical crops now patching spaces on the carpeted green scenery and avoiding a mono-crop economy in the area.

The origin of tea industry in Kericho area is the result of a combination of processes escalated by colonial activities. These include a series of Crown Land Ordinances passed in Kenya to systematise alienation of land from the African population; the desire of multi-national tea companies already established in Asian colonial dependencies to expand in tropical Africa, in this case Kenya, in a bid to meet the growing demand of tea in both "home" and world markets; and the braving of an unfamiliar environment by replicating here experiments carried out in other parts of Kenya. Each of these three factors played an important role in origin and subsequent growth of tea industry in the study area.

During the colonial period a series of Crown Lands Ordinances were passed in Kenya to change land tenure systems and to formalise the transfer of land ownership from the indigenous population to the settler farmers who were a cog in the wheel of colonisation. Among those with farreaching repercussions was that promulgated in 1915 which among other things extended the lease of alienated land from a period of 99 to 999 years. Through this relatively perpetual process, the study area was alienated from the Kipsigis who, like their neighbouring kinsmen the Nandi, undertook forced migration elsewhere in the vicinity (Ellis, 1976). Results of this Ordinance began to show in the 1920's when the Kipsigis occupied only 2149 square kilometres (830 square miles) of the total land area of Kericho District of 4186 square kilometres (1617 square miles), or 51.3 percent of the total area (Kenya National Archives, 1928). That the rest 48.7 percent of the area was alienated land explains the setting up of a strategy for subsequent land alienation.

At the time a series of Crown Lands Ordinance were being implemented, established tea companies in British dependencies in Asia were showing considerable interest in Kenya as another potential tea producing area. The incentive for this venture at that time in history was inadequate supply of tea from producing areas in South-east Asia which accordingly inflated its demand in the world market. In an unfamiliar environment, the process of tea production could not be undertaken before viable experiments were made and suitable area identified accordingly. The first ever experiment in Kenya was carried out in Limuru area near Nairobi during the period 1903-1908 where it became evident that tea was suitable, and that it could be tried out in other parts of the country with similar ecology. In Kericho area, the first experiment was carried out by the local District Commissioner, H. B. Partington, just

before the first decade of this century elapsed (Kenya National Archives, 1917). Another experiment was made by a settler farmer, Captain Barclay, in 1912 from seeds imported from Sri Lanka. These and other experiments were very successful and greatly attracted some entrepreneurs as well as companies. In the wake of World War I or 1914 - 1918, several European settlers arrived in the area and immediately embarked on further experiments in tea production. By 1924 one of these post-war arrivals used seeds from both Captain Barclay and from Assam in India and China to develop a fifty-acre tea estate on which he built a small factory for processing tea leaves (Osoro, 1979 : 37-38). Soon tea estates emerged in the present Jamji and Chemosit estates and also in Buret giving rise to the formation of Buret Tea Company Limited. A firm foundation had already been laid on which a strong economic edifice was subsequently constructed making the study area an important techno-scientific breakthrough in a tropical environment. Before such achievements were ever made, tropical lands had been regarded as impregnable to scientific and technological innovations attempted by the industrialised nations.

The emergence of the Kericho tea estates complex, however, had to await the efforts of the two tea companies whose names remain imprinted on agricultural revolution of the area. In 1916, a Director of Brooke Bond India Limited, a firm that was already selling tea in Kenya, visited Limuru where the first experiment in tea growing had been successful. This further evidenced the interest in expanding production in the country. Already in 1915 the War Council of East Africa Protectorate had proposed a scheme whereby ex-servicemen were to be attracted from Britain to become agricultural settlers in the former. Among the advantages of this scheme which was implemented in the wake of the War in 1918 was that it constituted unemployment relief for Britain

whose ailing economy was experiencing great difficulties in absorbing an influx of unemployed ex-servicemen. For this purpose, a large chunk of land amounting to 25,000 acres (11,111 hectares) was soon set aside for the development of the British East Africa Disabled Officers Colony (BEADOC). An influx of prospective settlers arrived during 1919-20 embarking immediately on flax growing. Subsequently, the Kenya Tea Company was formed to develop land bought from the BEADOC. Another company to make an impact in Kericho area was James Finlay and Company Limited which was incorporated in Glasgow, Scotland. In 1924, an official of the parent company's Indian subsidiary was instructed to explore possibilities of growing tea in the country. His favourable report encouraged further investigations intended to remove any more doubts. These subsequent reports were equally favourable inducing James Finlay and Company Limited to purchase some 20,000 acres (8,889 hectares) of the former BEADOC land (Osoro, 1979 : 44-47). Immediately, the African Highlands Produce Company (AHP) was formed and, like its counterpart, the Brooke Bond group, has remained in operation since its inception. Both these multi-national corporations are headquartered in Britain. With their enormous capital and entrepreneurial capacities they bought off the BEADOC, undertook systematic expansion of their acquisitions and developed the tea industry to its present state. But this was not without the migrant labour force that was and remains crucial input in the enterprise.

1.1.4 Suitability of the Study Area for the Present Study.

The pattern of intra-regional migration in Western Kenya underscores the importance of the study area as a net in-migration area. Rempel's study gives a vivid picture for all districts in Kenya which reveals a contrast of Kericho with other contiguous districts that feature as

out-migration areas (Rempel, 1977). Emphasis is placed on migration of male population, chosen specifically because, unlike females, they are more migratory and often rank as heads of migrant households (Table 1.5). It is evident that more than half of migrants in Kericho district are born in Nyanza Province where Kisumu, Kisii and South Nyanza in the order in which they come are the principal source areas. Kakamega district ranks fourth being the major source in Western Province of males migrating to Kericho. Although this pattern explains the position of Kericho district, it may safely be assumed that within it the tea estates complex is the chief destination. Another striking feature revealed in the table is the absence of population exchange between South Nyanza and Busia which may be ascribed to prohibitive distance between them; and between Kisii and Busia the former is the net recipient of migrants. Detailed analysis of this from the survey data is deferred to Chapter IV.

The foregoing preempts the suitability of the study area for a rural-rural migration study. Although recognised as an important economic node in Western Kenya where in-migration has been postulated, the Kericho tea estates complex has never been subjected to a demographic study leave alone a crude migration study. There has been longstanding oversight of rural-rural migration as the rural-urban component continues to attract the attention of scholars with varying disciplinary backgrounds. Analysis of lifetime migration in Kenya for the intercensal period, 1962-1969, has shown that major destinations of migration streams are Nairobi, Coast and Rift Valley. The first two destinations are the major urban centres, especially Nairobi and Mombasa to which rural-urban migrants gravitate; and the commercial farming areas, including the study area, where rural-rural migrants end up. Indeed, migration to these areas has become another form of rite de passage, especially

Table 1.5 Male Migration for each District in Western Kenya by District, 1969

(Percent)

Birth place	Destination									
	Nyanza	Kisii	Kisumu	Siaya	South Nyanza	Western	Bungoma	Busia	Kakamega	Kericho
NYANZA PROVINCE	23.7	6.7	39.9	28.4	27.0	13.9	4.0	13.6	26.6	56.5
Kisii	3.6		10.4	1.2	3.1	1.0	0.5	-	2.3	18.2
Kisumu	8.7	1.4		20.2	17.9	4.5	1.8	2.7	9.2	19.8
Siaya	6.5	0.7	19.1		5.4	7.1	1.3	11.0	11.9	2.6
South Nyanza	4.2	4.0	9.4	6.5		1.2	0.5	-	2.8	15.1
WESTERN PROVINCE	10.4	4.0	4.0	24.2	23.5	18.4	11.5	25.2	22.5	15.4
Bungoma	0.7	0.3	2.2	0.6	0.1	3.4		8.9	4.0	0.4
Busia	2.6	0.3	3.4	15.0		6.2	3.4		13.9	0.3
Kakamega	6.8	3.2	18.4	7.8	1.9	7.0	7.7	16.1		14.6
Kericho	2.2	2.6	1.4	2.0	2.4	0.8	0.5		1.6	

Source: H. Rempel, 1977, Appendix C (see references).

a socio-economic one, which must of necessity be fulfilled within one's life-cycle.

Suitability of the study area for this rural-rural migration is underlined by several reasons. First, the area has for a long time been the single major economic island to which population movements have naturally gravitated before undertaking long-distance or stepwise migration elsewhere in the country. Other economic islands, such as the rapidly expanding sugar belts now creating a most distinctive cultural landscape in Western Kenya and rural industrial nodes such as Webuye, are but recent developments originating only since independence. Second, the area, due to the longstanding dominance of Kericho tea estates, presents an opportunity to shed some light on rural-rural migration which has remained a neglected aspect of internal migration in Kenya. From 1969 census data it is evident that the highest proportion of lifetime migrants consists of rural-rural migrants (about 40 percent) compared to that of rural-urban migrants (about 33 percent), urban-rural (about 24 percent) and urban-urban migrants (a mere 4 percent) (World Bank, 1980 : 32). Thus persistent oversight of rural-rural migration studies whose findings could be of considerable interest to students of migration, policy makers, regional planners and a host of other persons, is grossly inconsistent with the process of internal migration obtaining in contemporary Kenya. The study area is an appropriate choice as a case study of intra-rural population redistribution engendered among other things by the past development trends and anticipating the effects of current regional planning strategies. Finally, the empirical and theoretical pictures that will emerge from the present study will ideally complement rural-urban migration studies. The emergent comprehensive picture of internal migration would open avenues for more scientific analyses of the phenomenon, for instance, a more meaningful

model of labour migration and employment in a rural setting. This fact will be appreciated in the final part of the chapter which explains the problem of study.

1.2 NATURE AND SCOPE OF THE PROBLEM

1.2.1 Statement of Problem.

The three components of population dynamics, namely, fertility, mortality and migration are crucial in demographic studies because they influence trends in population structure as well as change. Migration, the most widely studied of the trio, has attracted a broad and consistently expanding group of scholars in social, physical and biological sciences. Geographers are particularly concerned with spatio-temporal analysis of migration investigating among other things the matrix of determinants, a host of consequences and ingredients of the process itself. Their broad approach is instrumental in incisive analysis adopted by demographers at a more refined level. In Africa where the waves of colonialism swept pre-colonial aspects of social, political and economic history, contemporary study of migration becomes imperative on two grounds. First, that African societies have undergone different periods as well as patterns of colonisation and in the process changing patterns, motivations andconsequences of migration suggests that the conceptual framework of migration in the continent defies Western theories based, as they are, on Western experience. Second, in spite of distinctive and identifiable phases of African history - precolonial, colonial and post-colonial era - migration in the continent assumes a considerable measure of diversity and continuity (Adepoju, 1977 : 210). Although it is difficult to confine oneself to any particular line of analysis that does not take cognisance of analytical perspectives of other disciplines, it is imperative to have minimal disciplinary bias but at the same time borrow from other disciplines, even in a small way.

Since the present pattern of population in modern Africa is a function of population movements that are deeply rooted in pre-colonial times but that have persisted through the colonial era to the post-colonial period, it is important that it be explained in spatio-temporal perspective. Pre-colonial migrations in the continent which involved waves of diverse ethno-linguistic groups bound together by a common bond, for example, a desire for acquiring more land for settlement, fleeing of hostile neighbours or aspiring for territoriality, rocked the fabric of communal solidarity. They were halted during the colonial era by the colonial administration which ushered in an interesting paradox. While on the one hand it halted massive and geographically extensive movements which were considered detrimental to the fabric of colonial administration, on the other it altered the patterns of and gave impetus to migration by creating a new socio-economic environment firmly embedded to a new political superstructure. Thus while pre-colonial migrations were motivated by a gamut of factors affecting the body politic and involved groups moving in waves, colonial-period migrations were more economically motivated and involved individuals rather than groups (Hance, 1970 : 131). Yet all colonial-period migrations were not necessarily economically inspired as most students of migration readily argue. There were notable cases in East Africa (Ellis, 1976) and in West Africa (Asiwaju, 1976) during colonial rule where migration was in fact a revolt to subjugation. However, this is but one tint of this chameleonic phenomenon at a period in time when other non-administrative factors must have acted in concert with recognisable administrative conditions to generate migration. Post-colonial migrations are a legacy, indeed like many other legacies of the colonial period, whose influence is currently felt but whose origins are rarely considered. The problem under study stands astride the two successive epochs and therefore

requires analysis based on temporal and spatial considerations. These movements have gravitated toward the poles of attraction such as cash-cropping, mining and urban areas which among other things have enhanced tribal intermingling (Hance, 1970 : 131). Initially forced by both legislation and the newly created milieu during the colonial period, these persistent forms of migration later became voluntary, not least inevitable. The relationship between colonial-initiated developments and population movements has been explained by de Kiewiet(1956 : 25) as follows:

> "... the development of Africa ... can be more easily understood if it is seen as the result of two movements of migration. The first is the migration of European traders, officials and settlers into Africa together with their skills, investments, equipment and governmental organisation. The second is the migration of the African tribesman into the new world created by European enterprise".

The infrastructure developed by European colonial economic system has been responsible for the emergence of a dual economy in which the modern sector is dominated by modern production techniques, and in which the traditional sector with relatively retarded development tends to push out population to the former. There is an inverse relationship between the volume of migrants from the traditional sector and the absorption capacity of the modern sector, a phenomenon accounting for migrants' woolly perception of the two poles.

Migration, like other "flow" phenomena such as commodities, innovations, ideas and information is an important aspect of spatial interaction which, in Ullman's (1956) view, is generated by three basic conditions: complementarity, intervening opportunities and transferability. The first condition is "complementarity" which simply means

that for any two places to interact there must be a demand in one place and a supply at another. In the context of this study, the Kericho tea estates complex constitutes a demand point of cheap labour readily supplied by the neighbouring districts; the relationship typifies complementarity between modern and traditional sectors of the economy or between more developed and less developed rural areas within one geographical setting. The second condition is"intervening opportunities" or conditions that determine alternative destination within a matrix of possible destinations to which the "flow" phenomena could be directed from a given source area. In a sense, intervening opportunities are spatial sponges soaking up potential interaction between complementary places (Abler, et al., 1972 : 194). Thus populations only migrate to those places which, while satisfying the first condition, defy any intervening opportunities created by other potential destinations. Within the regional perspective, Kericho tea estates and their capacity for providing basic requirements of migrants, having been the economic island prior to the expansion of the sugar industry, overshadow intervening opportunities in Western Kenya hence large scale out-migration to them from the neighbouring districts. Finally, "transferability" or the friction of distance must be statisfied if migrants have to move within space. It may be measured in real time and money costs, i.e. "economic distance"; or along transportation routes such as roads, railways or sea routes, "geographical distance", using either isotims or isochrones. Thus despite perfect complementarity and the absence of intervening opportunities, immense transferability constraints could inhibit long range migrations. In Western Kenya where road networks are far from efficient and where bicycling and walking on foot are more often adopted, there are difficulties in quantifying transferability. Moreover, recruitment of cheap labour from Western Kenya Districts has sometimes involved

sending out vehicles by tea companies to tap labour from an immense human resource reservoir. It is equally difficult to quantify this important element in economic distance because it is among "classified information" inaccessible to researchers. However, an important point to bear in mind throughout this study is that movements of every sort create spatial patterns that appear on the landscape, and once established, such spatial arrangements induce subsequent movements (Abler et al,1972 : 236). Since the establishment of the Kericho tea estates complex, migration of population from the neighbouring districts into the area has created a distinctive spatial patterning which the present study undertakes to investigate.

Questions may be raised as to why the problem under study is considered rural-rural rather than rural-urban migration. The latter may be supported by the fact that Kericho, the focus of the tea estates complex, is an important urban centre, indeed one of the major towns after Kisumu in Western Kenya. However, it must be stressed that the emergence and subsequent growth of Kericho town is a function of the tea industry in which tea farmers of necessity required a market town, much as Nakuru emerged as the farmers' capital, Eldoret and Kitale grew to serve wheat and maize farmers of Uasin Gishu and Trans Nzoia Districts and as Nanyuki and Nyahururu arose to serve their immediate hinterlands. While the rural area around Kericho town has been transformed into a green carpeted cultural landscape, the urban area depicts a morphological structure typical of any town. It is the infractructure of the tea industry in rural setting that sustains the socio-economic well-being of migrant population in the tea estates and not that of Kericho town where a different set of migrants are likely to be found. The problem at stake is a process of rural-rural migration which influences population change in and which has farreaching implications for the economy of

Western Kenya. Indeed, the Kericho tea estates complex represents an entirely different economic entity from the town, drawing migrants specifically for labour inputs befitting the tea industry.

1.2.2. Objectives of the Study

It is an established fact in Kenya and indeed in many developing countries that internal migration study is biased toward rural-urban movement at the expense of other migration streams. In order to deviate from this well-trodden path of research interest and venture into a growing realm of regional cum national concern, the present study has several important factors to commend it. It is prompted by the desire to fill a lacuna in internal migration and, perhaps, arouse interest in other virgin components, namely, urban-urban and urban-rural migration. The overriding objective of the study is to use the Kericho tea estates complex as a case study of a phenomenon whose impact is most felt in other rural economic islands of development jutting out of a sea of underdevelopment in the country. But its four major specific objectives are as follows:

(i) To examine the factors which repel migrants at the source areas and those that attract them at the destination. Although a number of determinants have been recognised in rural-urban migration, it would be grossly fallacious, indeed unscientific, to assume their relevance in rural-rural migration.

(ii) To identify salient migrant characteristics as well as migration differentials which presuppose that migrants, being a peculiar group, exhibit characteristics different from

those of the general population from whom they are selected by identifiable conditions. These characteristics, demographic or socio-economic, are expected to have farreaching repercussions on subsequent population structure and change in both source areas and destination of migration. They may reveal important contrasts between the opposite poles.

(iii) To consider the consequences of migration at the source areas and the destination in question. Since migration partially constitutes the parameter for ascertaining a population's rational response to environmental endowments and constraints, it obviously has effects on and is, in turn, affected by conditions at the two poles. Established knowledge of the interrelations between migration and development enhances formulation of meaningful development policies cognizant of demographic realities within a defined geographical entity. The recently promulgated Lake Basin Development Authority (LBDA) in Western Kenya is a case in point where demographic and developmental issues have to gaze at each other[10]. It is likely to generate intra-regional or regulate out-migration.

(iv) To determine population change between source areas and the destination due to natural increase as well as the aggregate increase when the role of migration is incorporated. Again, this has farreaching implications for present and future development programmes in the two areas.

These objectives underline migration as both a cause and an effect of not only population change but also development trends with which it is interdependent. But in Africa this intricate relationship does not assume a clear pattern because of a host of external forces (Adepoju, 1977 : 210). Against these objectives and a number of intangible factors the study undertakes to test several hypotheses.

1.2.3 Research Hypotheses

Since the closing years of the nineteenth century, Ravenstein's often quoted "laws of migration" have generated widespread concordance as well as discordance in migration studies. According to Lee, (1966), these laws may be considered in the context of the volume of migration; the migration stream and counter-stream; and the characteristics of migrants. He recognises eighteen laws in all: five relating to the first, six to the second and seven in the last of these aspects of migration, spelling out their salient features which many studies have confirmed. Migration studies have been concerned with these three categories of "laws" of migration, scholars generally emphasising those within their disciplinary premise. Using Lee's classification which has empirical underpinnings this study undertakes to test the following hypotheses:

On the volume of migration it is hypothesized that:

(i) chain migration is engendered by the presence of relatives and friends in the tea estates; and

(ii) chain migration is caused by the deliberate policy of the tea companies in Kericho to recruit cheap labour from selected rural areas.

On the migration stream and counter-stream it is hypothesized that:

(iii) there are significant demographic and socio-economic differences between rural-rural migrants investigated in this study and rural-urban migrants already investigated in many studies in the country;

(iv) rural-rural migration is an important stage of step-wise migration leading to rural-urban and return migration; and

(v) the tea estates complex (destination) constitutes a positive net migration area as opposed to the neighbouring rural districts (source areas) which are negative net migration areas.

On the characteristics of migrants, it is hypothesized that:

(vi) the propensity of the rural population to migrate is due to migration selectivity by identifiable demographic and socio-economic attributes of migrants relative to the general population;

(vii) environmental constraints in the source areas "push" migrants to the tea estates (denstination) where favourable conditions "pull" them;

(viii) due to the process of migration selectivity, migration affects development of source areas more adversely than the destination; and

(ix) there are significant demographic and socio-economic differences between unskilled migrants investigated in the study and their skilled counterparts in the study area.

Although most of these hypotheses are tested from the survey (primary source of) data which cover the three categories in which they are classified, some of them have had to be tested from supplementary sources of data, namely, census and other migration surveys. Appropriate statistical tests are used in testing these hypotheses as well as in correlating migration with differentials of the other two components of population dynamics, with environmental endowments vis-a-vis constraints, and with other phenomena that are specified in relevant chapters.

1.2.4 Conceptual Definitions

In the previous sections a number of concepts have been used. As they will continue to be used in the rest of the study, they require definition if their connotation has to be appreciated. Emphasis is placed on those concepts relating to migration and other demographic features having relevance to this study. The standard definition of migration given in the United Nations (1958) Multilingual Demographic Dictionary is:

> "Migration is a form of geographical mobility or spatial mobility between one geographical unit and another, generally involving a change of residence from the place of origin or place of departure to the place of destination or place of arrival".

Two students of migration in Africa, Prothero and Gould (1975), prefer to distinguish between "circulation" which, irrespective of its duration, involves a return to the permanent residence,

and "migration" which is relatively permanent, involving non-return. Long-term circulation involves absence from home for longer than one year and includes important groups of wage labourers and traders who, despite their long absence, maintain close socio-economic links with their homes to which they eventually return (Gould and Prothero 1975 : 43). Mitchell (1969) holds that such movements occur throughout tropical Africa, but more particularly in East, Central and Southern Africa. However, this distinction seems to be unrealistic for the present study; and we prefer the most conommonly used concept "migration" without attempting to anticipate its purpose or duration. It is difficult both to pre-empt the objective of migrant population, not least their ultimate future migration plans wherever they have migrated and to predict the duration of a migration process especially where step-wise migration is operative or is an important aspect of life-time migration, i.e. a process which identifies those enumerated in a separate place from their previous residence. For a movement to be deemed migration, boundaries have of necessity to be set between operational units, i.e. administrative such as parishes, districts or smaller units, across which movements constitute migration.

The concept differs from movements such as journey-to-work within a city or commuting within a suburban region or within a local area having relative homogeneity in administrative, cultural or physical terms. Generally, the underlying purpose of migrants to move is to reside in another place for reasons that only a micro study can discover. They are expected to stay there for as long as their desires are met or not tampered with; and it would be a serious oversimplification to refer to it as either circulation or migration. Moreover, even in urban areas the term "circulation" was relevant during the colonial period (Elkan, 1967), having been reinforced by

boundary (United Nations ECAFE,1967 : 167). In the context of this study, migrants in the Kericho tea estates complex originate outside its defined boundaries from different districts including Kericho and the rest in Western Kenya. Other concepts relating to migration will be explained as and when they occur in various parts of the study.

From the foregoing a paradigm of internal migration may be recognised, depicting Kenya's stage of demographic cum mobility transition (Figure 8 and Table 1.6).

Table 1.6 Patterns and Characteristics of Mobility Transition Phases II - III

Symbol	Directional Pattern	Characteristic	Pattern Details
1A; B	Intra-rural	Conservative	TT. PP; MM. PP
2A; B	Intra-urban	Conservative	TT. CC; MM. CC
3A; B	Urban-rural	Conservative	TT. CP ; MM. CP
4A; B	Urban-rural	Conservative?	TM. CP; MT. CP
5A; B	Rural-urban	Innovative	TT. PC; MM. PC
6A	Rural-urban	Innovative	TM.PC
6B	Rural-urban	Conservative?	MT.PC
7A	Intra-rural	Innovative	TM.PP
7B	Intra-urban	Conservative	MT.PP
8A	Intra-urban	Innovative	TM.CC
8B	Intra-urban	Conservative	MT.CC

Notes: 1. T = Traditional, M = Modern, C = Centre, P = Periphery
2. TT.PP = summarises a migration stream, in this case from one part of the traditional sector to another and, at the same time, from one part of the periphery to another.

Source: R. J. Pryor, 1975, Table 1.2, p.30.

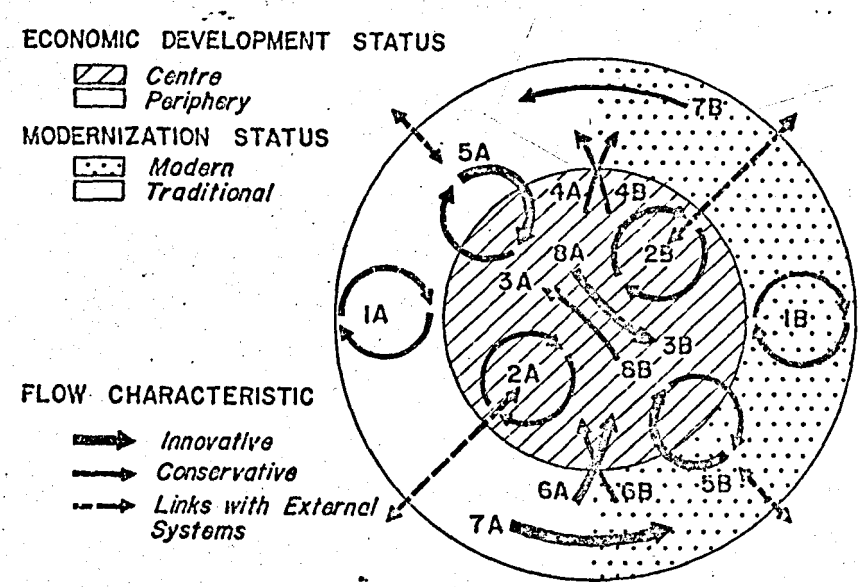


Fig.8. AN INTERNAL MIGRATION PARADIGM: MOBILITY PHASES II-III.
(after Pryor)

The stage is characterised by initial diffusion of innovative form of modernisation made in the centre spreading to the periphery; by high birth rate contrasting with decreasing death rate which results in rapid population growth; and by increasing rates of rural-urban and rural-rural migration as well as circulation (Pryor, 1975 : 28). Thus as the figure and the table show, this study is dealing with an innovative/conservative migration whereby there is spatial mobility from the traditional sector to the modern sector of economy or within a periphery but in which the conditions of spatial interaction are satisfied (i.e. 7A). The paradigm itself explains the dominance of urban-directed or-confined migration streams hence considerable emphasis on rural-urban or urban-urban streams in most migration studies.

1.2.5 Scope and Limitations

Analysis of migration has a natural spatial dimension and, within an area such as Western Kenya which exhibits a high propensity to migrate, a geographical cum demographic study has great scope for academic as well as practical considerations. Among other things, it portrays the relationship between a more developed rural area and less developed rural areas; this relationship arouses enough curiosity for other researches to be undertaken in other parts of Kenya where rural-rural migration predominates. Yet the spatial perspective of migration analysis is incomplete without the temporal one. Over the years the Kericho tea estates complex has constituted the single dominant destination for rural-rural migrants in Western Kenya. But this dominance is expected to crumble in the face of the rapidly expanding and more expansive sugar industry and other agro-industrial activities likely to accrue from it. Thus the present study, though limited to the tea complex, examines the aforesaid relationship in the context of present and envisaged economic circumstances.

The problem studied brings the study within the threshold of other disciplines with which the researcher is unfamiliar. For example, it borders on economics and sociology among the social sciences as well as other sciences, especially physics. But this is not a weakness to lament over. Rather, it presents an opportunity for shared knowledge and for making contribution to the ever expanding stock of migration studies. If the study arouses further research interest, it will have gone a long way in augmenting our knowledge of this component of population dynamics. Its findings will have even greater implications for rural development programmes envisaged in Western Kenya and other "development regions" where migration acts as a socio-spatial catalyst.

1.2.6 Organisation of the Thesis

This thesis consists of two broad parts. While the first part (Chapters I - III) gives background information which defines the perspective of the present study, the second one addresses itself to the findings presented in the next four chapters (Chapters IV - VII). The closing chapter summarises the major findings and highlights main conclusions including recommendations as well as identification of potential research areas in future.

The present chapter has attempted to give an overview of both the area and the problem selected for study. It has underlined the fact that rural-rural migration studies are overdue in Kenya where the migration stream ought to be consistent with the phase of migration transition related to a corresponding stage of the demographic transition which is a function of the process of modernisation and the attendant socio-economic development. The study area is appropriate for making inferences to other destinations of rural-rural migration in the country.

Chapter II reviews migration literature on research and studies already undertaken in different parts of the world and various aspects of the phenomenon. It is generally recognised that emphasis of literature reflects aspects of dichotomy between the developed and the developing nations where different stages of the migration transition have been reached.

Chapter III discusses methods of data collection and analysis. It comprises three sections: instruments for data collection in which preliminary arrangements, sampling design and sources of data used in the study are considered; data processing which explains editing, processing and tabulation procedures; and methods of analysis such as demographic and statistical techniques used. The chapter also considers limitations of data base and methods of analysis.

Migration field of the Kericho estates complex is delimited and analysed in Chapter IV. Emphasis is placed on indices for identifying the migration field and its spatial context at both national and regional levels. A more vivid picture of the migration field seems to be better painted from survey data than census data. This fact is borne out in this chapter of the study.

Chapter V examines the determinants of migration which are among the most investigated aspects of migration. A matrix of the major determinants incorporates those perceived by migrants on the one hand, and those associated with geo-ecological, economic and psycho-social conditions either reported by them or related to different time-periods of migration. Also discussed are some models usually developed and applied in migration studies, but whose theoretical fascination defies empirical findings. A model of determinants of rural-rural migration is constructed for comparison and contrast with those

explaining rural-urban migration from which some generalisations have been made.

Chapter VI considers two interrelated issues, namely, migrant characteristics and migration differentials. Again, it is interesting to have insight into these in the context of rural-urban migration studies whose findings are certainly wanting in rural-rural migration studies.

Chapter VII, treating migration as an agent of population change, analyses the consequences of both migration and total population change in Western Kenya. This applies to out-and in-migration areas alike where the two aspects of population redistribution have farreaching demographic and socio-economic consequences. Implications of this for planning and development programmes in Western Kenya are highlighted in order to distill meaningful policies regarding migration from and within the area.

The final Chapter (VIII) summarises the major findings, draws general conclusions, echoes recommendations for policy makers and planners and identifies opportunities for further research in the future. As a pioneering study in an important but, so far, neglected aspect of internal migration, the present study is expected to constitute a comprehensive empirical as well as substantive model of rural-rural migration as a subset of general migration in the context of demographic realities as well as development trends.

NOTES:

1. Indices of the focal role of Kisumu town, the largest urban centre in Western Kenya, include its broad

economic base and demographic momentum relative to other major urban centres, such as Eldoret and Kitale. However, the conventional constitution of Western Kenya limits it to Nyanza and Western Provinces which have much affinity in demographic and development trends. The Lake Basin Development Authority (LBDA) which encompasses fifteen districts comprises two distinct areas: the "development area" covering the two provinces or nucleus of development and the "catchment area" covering the rest of the districts.

2. This feature is illustrated by the map depicting rainfall probability, population and main drainage basins, which shows much correlation between rainfall and population distribution and that between rainfall and drainage basins. Detailed discussion of this is contained in Griffiths (1969).

3. For an illuminating analysis of these vegetation and ecological zones and their agricultural cum industrial potential, see Ominde (1963; 1968a: 30-36; 1971 : 211).

4. Ominde (1968a) identifies five population regions in Kenya: the Lake Victoria Basin, the Rift and Associated Highlands, the Eastern Plateau Foreland, the Coastal Region and two subregions comprising the Southern and Northern Drylands. But distinctive population clusters are noticeable in the first, second and fourth regions.

5. Estimated availability of good agricultural land by district in 1969 is limited to hectares of high-potential land equivalents calculated on the assumption that 5 hectares of medium-potential land and 100 hectares of low-potential land are equivalent

to 1 hectare of high-potential land. Specific district figures are available in International Labour Organisation (1972), Table 1, p.35.

6. The concept of "demographic quotient" may be defined in formula form as:

$$q = \frac{\text{total resources available}}{\text{population X per/capita consumption of resources}}$$

Its application to analysis of population-resource relationships is discussed by Cloud (1971 : 8-10).

7. In relating socio-economic status to population dynamics on a spatio-temporal perspective, Pryor (1971) and Zelinsky (1971) explain the "demographic transition" (including "migration transition" phases which analysts of this theory have often ignored) in the context of changing economic development status and corresponding modernisation status. A summarised version of this discussion appears in Pryor (1975).

8. The "centre-periphery" model of development adopted in the colonial period ushered in a situation in which the centre developed at the expense of the periphery, part of which could be mobilised especially in producing export-oriented crops. Thus Kericho tea estates complex is a "mobilised periphery" which meets requirements of the centre, but which contrasts with traditional subsistence crop areas. The argument is well developed by Brookfield (1974).

9. It is in this vein that historians and political analysts of the colonial processes emphasise the origin and growth of tea industry in the study area. A recent case in point is Osoro (1979).

10. This massive development programme is intended to develop agriculture, fishing, mining, tourism and other resources in Western Kenya as already defined in (1) above. Working papers presented on various aspects of development give additional benchmark information for planners, policy and decision makers. These are available in Okidi ed.(1979).

CHAPTER II

CHAPTER II

LITERATURE REVIEW OF EMPIRICAL RESEARCH AND STUDIES

Even a cursory examination of published literature on internal migration reveals the fact that to many students of migration, the phenomenon is multi-dimensional. It is analogous to the oft-quoted proverbial elephant whose different parts, felt by the blind man, create different images. Irrespective of aspects of migration being studied-process, determinants or consequences - there exists marked evidence of perceptible disciplinary prejudice in literature: historical, anthropological, economic, demographic, sociological and geographical. It is probably in migration that a frontal analysis has been articulated of a gamut of demographic phenomena as well as an array of socio-economic issues. Conversely, the other two components of population dynamics, namely, fertility and mortality, tend to have carved their own niches in some disciplines more than in others; fertility is as associated with sociology as mortality is with epidemiology. However, internal migration research and studies have been so skewed toward urban destinations that the rural-urban mainstream has been erroneously misconstrued as representative of the whole matrix. Other migration streams, including the rural-rural component being investigated in this study, have remained relatively virgin to research intercourse. Since migration literature is too massive to be exhausted in this chapter, this literature review is at best selective, citing only researches and studies that illustrate the immensity of the whole collection. This chapter reviews migration literature in three parts: it begins with bibliographic and review literature which acts as the basic source of literature pertaining to various aspects of migration in general, world, regional and national settings; then it reviews at greater length literature in the less

developed world; and finally, it reviews literature in tropical Africa, placing greatest emphasis on the amount of literature on rural-rural migration. Literature from the developed world is ignored in this study for three main reasons. First, as will become apparent in 2.1.3 of this chapter, that literature is consistent with a more advanced stage reached by the developed countries in the "mobility transition" hypothesis but grossly irrelevant to that in which the developing countries are still lurking. Second, most studies in the developed world are longitudinal, being of considerable extent in both spatial and temporal perspectives. They are heavily bent on analysing cycles of migration and economic development trends through successive historical epochs when both time and space account for changing situations. Third, most of them examine national as well as international aspects of migration at macro-level with little regard to micro-analysis of intra-regional or local migration. But a few of them are included to demonstrate their difference from literature in the developing world.

2.1 BIBLIOGRAPHIC AND REVIEW LITERATURE ON MIGRATION

As may be imagined at the outset, bibliographic and review literature summarises researches and studies that have been accomplished over the years. For our purposes, the frame of reference of such efforts is limited to three issues: the nature and frequency of migration literature; a survey of bibliographic and review literature in both the developed and the developing worlds, and the relationship between migration literature and the "mobility transition" hypothesis.

2.1.1 Migration Literature in Contemporary Publications.

Systematic review of migration research and studies is serialised in several periodicals and newsletters published in different institutions with varying interests at stake. Some of these may explain the sentiments of a broad spectrum of regular publications. In Europe, they include a quarterly periodical, International Migration[1] and a semi-annual, Migration Today[2], both of which have been published since 1963 and are multi-lingual in order to generate wider reading. Being institutional publications with humanitatian underpinnings, they often summarise sensitive issues such as migration of refugees, immigration of population from non-European origins and the like. From North America are the International Migration Review[3] and Population Index[4], both quarterly publications produced for international reading. The former covers aspects of international including inter-territorial as well as internal migration in different world regions containing a triad collection of articles, documentation and book reviews. Literature sources could be multiplied, but those cited suffice for illustrative purposes.

A different breed of literature emanates from research institutions in different parts of the developed world, but focussing on the two worlds. In United Kingdom, the African Population Mobility Project, established at the University of Liverpool by distinguished African migration scholars, notably R. Mansell Prothero and W.T.S. Gould, has consistently excavated invaluable information on tropical Africa since its inception[5]. The geographical basis of the project is suggestive of its scope, placing more emphasis on sub-Saharan Africa. Also, the spate of publications by the project demonstrates continuing efforts being made in investigating migration within a continent where population movements have had farreaching spatio-temporal repercussions in pre-colonial, colonial and post-colonial eras.

Three recent review cum biliographic contributions to internal migration may further be mentioned to demonstrate continuity in migration debate. The first is a review of research and findings on the subject in Africa, Asia and Latin America published by the International Development Research Centre (IDRC) in Canada (Simmons, et al., 1977). It summarises the major findings compiled by a multidisciplinary task force, analysing the determinants of migration, migrant characteristics, consequences and policy implications, details of which are considered in the next sub-section (2.1.2). The second is Shaw's (1975) contribution which gives a theoretical perspective of migration; analyses migration differentials; examines spatial aspects of the phenomenon; considers factors involved in the decision to migrate; reviews probabilistic and stochastic models of migration; and identifies further research areas. The third is Yap's (1975) analysis of internal migration in the developing countries. Again, these important publications reveal the bias of literature toward rural-urban migration which attracts continuing research and studies at the expense of rural-rural migration, for example, which exhibits many features in common.

Being a dynamic phenomenon, migration has to be considered within the broader dynamics of society embracing various forms of both demographic and socio-economic phenomena. This is considered in the sub-section 2.1.3. However, the foregoing summarises the basic source of literature to which interested students of migration may refer. They hardly present incisive findings as well as their implications for further research or study. The next sub-section therefore presents a survey of sentiments inherent in literature attributed to some diverse contributions by students of migration.

2.1.2 A Survey of the Sentiments of Migration Literature

In surveying the sentiments often expressed by migration literature, attention may be focussed on the direction of migration streams; the determinants of migration; migration selectivity and migrant characteristics; and the consequences of migration. Certainly literature on each of these is inexhaustible, and only a few will be cited for illustration.

An increasing body of literature on migration streams shows a dichotomy between the developed and the developing countries. In keeping with the differential stage of modernisation and socio-economic status discussed more closely in sub-section 2.1.3, urban-urban migration is predominant in the former as opposed to rural-urban and rural-rural movements in the latter. Shaw's (1975) study already cited emphasises this dichotomy. Studies of European migrations by Kayser (1977), Fielding (1975) and Kosinski (1975) underline the importance of urban-urban migration whether on metropolitan basis or of inter-regional dimension. In the contrasting economic systems of the developed nations, free enterprise or capitalist and centrally planned or socialist, this migration stream is typical. Thus while economic mechanisms influence migration streams in the former, the socialist policy guides them in the latter; and studies by Fielding and Kosinski explain this[6]. A study of Poland reveals the extent to which migration is both a cause and an effect of economic development wrapped in the socialist policy during changing circumstances (Fallenbuchl, 1977).

Among the determinants of migration economic factors are recognised as the most significant. Economists have recently been preoccupied with analysing migration within the framework of economic variables alone: income[7],

employment opportunities and urban-rural income differentials[8]; sociologists recognise the controlling role of intervening opportunities[9]; and geographers explain them in the context of the bases of spatial interaction (Abler, et al., (1972). Greenwood's (1976) survey, though confined to economic literature on migration in the United States, illuminates the complexity of economic perspective of migration. Indeed, the determinants of migration account for an increasing number of migration models that explain incidence as well as rate of migration (ter Heide, 1963). It is tempting to argue that there are as many determinants of migration as there are discipline-bound studies analysing them. This poses strong challenges for some of the techniques used so far in identifying the determinants, either severally or individually; and calls for trying out other techniques appropriate for this complex phenomenon.

Analyses of migrant characteristics have identified aspects of migration selectivity in both demographic and socio-economic terms, or innate and creative elements respectively. A convincing case was made by Dorothy Thomas (1938) nearly half a century ago for migration differentials. This aspect of migration has perhaps the bulk of literature in the developed and the developing countries alike. Age among demographic and education as well as economic activity among socio-economic attributes, have been found to be the most consistent migration differentials irrespective of the population and the level of economy. The ramifications of this statement will be realised in Chapter VI of the study, discussing migration differentials.

The consequences of migration have been more implied than explicitly investigated[10]. Literature abounds in demographic consequences that influence the structure and change of population, but rarely on those consequences on

societal milieu. The present study considers this a lacuna that it endeavours to fill using the existing data which, admittedly, may explain them only partially. Again, since these form the basis of Chapter VII, their detailed consideration is deferred until then.

Views consistently expressed by migration literature are of two kinds. There are those proven by data through carefully designed researches and studies cited above and elsewhere in Chapters IV - VII. There are also those simply endorsing the "norm" without any supporting evidence, leading to sweeping statements that, though convincing, are grossly unscientific. Before reviewing literature in the developing countries, it is necessary to rationalise the basis of directional bias of migration engendered by the process of modernisation and the concomitant socio-economic development. Only this way can the contemporary orientation of migration literature in different societies be appreciated; and only then can rural-rural migration literature be weighed against that pertaining to other types of migration.

2.1.3 Migration Literature and the Mobility Transition Theory.

The paradigm of internal migration, considered within a dynamic spatio-temporal framework, suggests that there exists close relationship between the phenomenon and the process of modernisation which, in turn, breeds successive stages of "socio-economic transition". This convincing hypothesis is attributed to Zelinsky (1971) whose contribution has been incorporated in Pryor's (1975) work. Perhaps the strongest point in favour of Zelinsky's "mobility transition" hypothesis is its analysis alongside the "demographic transition" theory which has seldom been considered outside the interplay of fertility-mortality fluctuations. The dominant

features of various stages of the transition may now be discussed (Table II.1). In the traditional realm of modernisation status when pre-industrial and early transitional socio-economic phases are operational, rural-urban migration is non-existent in the first phase and becomes a major stream in the second when rural-rural migration also emerges. As the dominance of the centre becomes more real in early transitional stages, the centre increases its scope thereby affecting the periphery rather adversely and engendering out-migration from the latter. The demographic transition stage changes from high birth and death rates to persistently high birth rates and decreasing death rates resulting in "demographic relapse" or rapidly increasing population whose age-structure and other features augur ill for rural areas from which population migrates elsewhere. This explains why the bulk of literature in the developing countries pivots around rural-urban migration, followed by rural-rural migration. However, some studies reveal the reverse, whereby rural-rural migration transcends rural-urban movement[11]. The contrasting situation in the developed world shows the loosening grip of both rural-urban and rural-rural migration as the demographic transition takes a downward plunge. Although the centre still holds out strongly, subsidiary nodes begin to emerge, generating urban-urban migration which now transcends the two. Proliferation of urban centres decreases the proportion of urban population in a manner that inter-and intra-urban migration becomes the rule rather than the exception. It is in this light that this study attempts to analyse rural-rural migration, desisting from stereotyped conclusions unless the findings automatically lead to them.

The types of migration flows produced at mobility transition phases II and III that we have been considering, have been discussed with respect to Figure 8 and Table I.6

Table II.1: Relationship between socio-economic and Population dynamics.

Socio-economic Dynamics		Population Dynamics	
Economic development status	Modernisation status	Demographic transition phase	Mobility transtion phase
Pre-industrial Independent, dispersed settlements Subregional agrarian enclaves.	Traditional	A: High BR. High DR. Low NI.	I. ORU C
Early Transitional Centre/periphery differentiation commences, incipient industrialisation.	Initial diffusion of modernisation from innovative node in the centre.	B: +BR -DR +NI or Demographic relapse	II. ++RU +RR ++E --U +C
Late transitional Emergence of subdominant centres, major industrialisation	Extensive diffusion of modernisation from multiple nodes; upward social mobility increasing.	C: -BR -DR -NI	III. -RU -RR -E +C

Table II.1 continued.....

Advanced industrial Modern. Interdependent central place network; Industrial maturation	Maximum spatial diffusion; qualitative differences declining.	D: Low BR Low DR Low NI	IV: --RU -- or O RR ++UU +E? +1 ++C
Post-industrial Industry declining as % of GNP Interregional and international linkages dominant.	New modern Maximum spatial convergence	E: Low BR Low DR Controlled NI	V: ++UU 1 ++C Communications developments may modify migration and circulation.

Note:

1. Demographic transition BR = Birth Rate/Fertility, DR = Death-Rate/Mortality. NI + Natural Increase.

2. Mobility transition RR = Rural-Rural migration (Colonization), RU = Rural-Urban migration. UU = Inter-Intra-Urban migration. E = Emigration. 1 = Immigration C = Circulation (reciprocal movements).

3. Direction and intensity of change + Increasing, - Decreasing. O None, -- Minor. ++ Major.

Source: Pryor, 1971; Zelinsky, 1971.

in Chapter I. It may be reiterated here that this study investigates an innovative migration process marked 7A as opposed to another innovative type marked 6A which has been more studied. In both cases, however, migration originates from the traditional sector and terminates at the modern sector of economy, the control sub-systems in the area of origin reinforcing out-migration as those in the destination permit in-migration[12]. Against this backdrop the last two sections of the chapter may now review literature in the developing world as well as in the African environment.

2.2. MIGRATION LITERATURE IN THE DEVELOPING WORLD

The developing world, in the present context, relates not only to the conventional usage, but also pockets of underdeveloped economies in Oceania which have a lot in common with Latin American, Asian and African countries. In this section, the review covers all these world regions except Africa which is considered in the last section.

2.2.1 Literature on Underdeveloped Economies in Oceania

Oceania is the only world region which exibits contradictory economies, developed in Australia and New Zealand excepting the indigenous societies; and underdeveloped in the Pacific islands of Papua New Guinea and Western Samoa to mention but the most important. Migration in the two areas originates from distressed areas to perceived havens of progress, a phenomenon Morrison (1973) identifies as having important implications for regional policy. Literature on Australia and New Zealand are generally modelled along similar lines as that in other developed countries with which they share the same

stage of demographic cum migration transitions. But studies in New Zealand have incorporated analysis of migration among the indigenous population.

In New Zealand, studies on migration of the indigenous Maori population have predominated. There have been studies by different authors, all of them advocating nearly the same thing but from different perspectives[13]. They range from more general analysis of migration pattern to more specific treatment of destination preferences as well as migration to major urban centres. But perhaps the most incisive analysis has been made by Poulsen, Rowland and Johnson (1975) in a joint article which combines ideas from their separate analytical perspectives. Specifically covering the period 1951-69, the article concludes among other things that considerable redistribution of the Maori population has imposed heavy net losses in rural areas particularly of the youth and that, with an increasing proportion of working age population, spatial mobility has occurred even over short distances for wage employment. In the study area of the present study, the importance of ethnic connections in the process of chain migration, regarding attitudes to wage employment and in determining whether or not migration is temporary or permanent at the destination, has farreaching policy implications. Shankman's (1976) study of Western Samoa, an underdeveloped island in Oceania, depicts the interrelationship between migration and underdevelopment and emphasises the role of remittances to source areas of migration in alleviating underdevelopment itself. A measure of remittances is imperative in developing economies, due to migrants' maintenance of contact with permanent domicile. This is where their parents and some property are found and where, because of widespread poverty, migrant workers have to send remittances of money or goods to supplement precarious forms of survival. This will be analysed in appropriate parts of

the present study. Although the present study does not analyse migrants' remittance flows, it uses some indices to measure migrants' contact with their permanent domicile.

2.2.2. Latin American Literature on Migration.

One major region in the developing world where great strides have been made in migration study is Latin America. Considerable light has been cast on recent literature on internal migration in a study by Thomas (1970) which identifies inter-regional migration as the point of emphasis. Like Elizaga's (1965) preceding it, the study identifies some gaps that need to be filled and research areas that need to be looked into in future. In a recent review, Geiger (1975) analyses a number of aspects of migration in the region: regional differences that spark off inter-regional migration (providing the conditions of spatial interaction are fulfilled) between non-dynamic, more highly developed and new regions; and concludes that migration is engendered by a large number of individual decisions but heavily influenced by regional environmental conditions. It echoes sentiments explored by and draws conclusions likely to be reached in the present study.

Country studies give a more vivid picture of migration literature in Latin America. In Peru, a study by Wesche (1971) asserts that massive internal migration since World War II has been stimulated mainly by improved transportation and communication, increasing social mobility, cultural emancipation and concomitant rising expectations, the growing demographic pressure on traditional rural areas and the widening gulf between developing and retarded regions in the country (Wesche, 1971 : 251). All these factors come into play in the present study area and constitute some of the hypotheses tested and variables used

to explain the determinants of migration in the study. In Brazil, the consensus of most studies is that inter-regional migration is of considerable importance, and that heavy out-migration zone is located in the improverished north-eastern part of the country. Many studies have observed that the largest migration streams are directed southward to the State of Sao Paulo and the City of Rio de Janeiro; but that the new coffee districts of Parana in the central region where the capital, Brasilia, is located as well as north-central Maranhao and southern Mato Grosso, have gained population as a result of in-migration enhanced by the expanding employment opportunities. There is a proliferation of literature to this effect[14]. Migration literature on Brazil is most relevant to the present study, precisely because it explains the interdependence and, subsequently, migration between underdeveloped rural areas and the more developed coffee plantation areas. It represents a wholesome collection of literature that is hard to come by in rural-rural migration. Another study whose design is close to that of the present one is by Bataillon and Lebot (1974) on the relationship between internal migration and temporary agricultural employment in Guatemala. In agreement with its conclusions, the present study advocates that agricultural employment is at best temporary and that at one stage or another migrant population would have to return to their appointed permanent domicile elsewhere. The dependence of native minifundio" (small farms) of western altiplano and coffee, cotton and sugar plantations of the Pacific coast on migration, as recognised in the study just quoted, is of a temporary and seasonal than permanent dimension. Perhaps in future when the plantations ascend the capital-intensive orbit, they might dispense with the abundant cheap labour deployed thereby affecting out-migration areas even more adversely. In the Dominican Republic, a study by Carvajal and Geithman (1976) views migration as a response to perception of economic conditions and

opportunities in different parts of the country and asserts that migration flows reduce inter-regional disparities which often generate migration. This is yet another testimony of the preponderance of investigations on determinants and consequences of migration which are analysed at length in the present study. The "push-pull" hypothesis in rural-rural migration and return migration is tested by Conaway (1977) by comparing and contrasting circular migration and migratory behaviour among three ethnic groups in the Orinoco River area of Venezuela. Over and above this popular hypothesis, spatial interaction models applicable in migration are examined critically in the present study to appreciate their merits as well as limitations. Against the stereotyped explanation that "people migrate and areas gain or lose population for a variety of reasons, differences in potential earnings, in job availability, in schooling opportunities, in quality of life, proximity to friends and relatives, and so on", Fields (1975) makes conclusions in the form of hypotheses, comparing the lifetime migration of male and females in Colombia. Literature review of Latin American countries must of necessity include Mexico which, due to its proximity to the United States, also experiences international migration alongside internal migration. Aspects of the latter have been studied by Ball (1967) and Stevens (1968) depicting spatio-temporal characteristics and interdependence of migration with the pattern of economic activity. These studies reflect the spirit of other Latin American literature already reviewed; and their findings reinforce curiousity for further investigation elsewhere. To conclude this review of Latin American literature, Wilkie's (1972) behavioural model of peasant migration, constructed from a case study of Argentina, has important implications for peasant economies in other developing countries. The study presents a disaggregated picture of migration by different socio-economic groups who, despite their identity in all developing countries, are generally considered en masse in migration studies.

From the foregoing it may be realised that many studies in Latin America concentrate on the description of the volume and direction of migratory flows, on step-wise migration and on migrant characteristics (Simons, et al., 1977 : 73). A striking deficiency in this trend is that these studies hardly consider the consequences of migration which are important in influencing conditions at both source areas and destinations. This significant aspect of migration has been incorporated in the present study in order to consider positive and negative effects of migration on regional economy.

2.2.3 Asian Literature on Migration

That Asia is a giant of a continent in the world is perhaps best explained by its substantial sub-regional disparities, mosaic of linguistic and cultural groups and its enormous human masses. The general overview of migration in the continent presented in the IDRC study, shows that migration is treated as a dependent variable, demonstrating how population shifts are affected by factors of socio-economic development (Simons, et al., 1977: 45). A review of Chinese, the Indian Sub-continent including Pakistani and South-East Asian literature will illustrate the situation.

Using highly fragmentary data, Ho (1959) has described the principal inter-regional migrations in nearly two centuries. Although this study covers an immense historical time-span, having no relevance to the present study, it reveals significant fluctuations in identifiable phases of the development time-scale. Certainly connected with the present study is the Chinese migration into Manchuria following industrial and agricultural developments of this area of China since the end of the nineteenth century[15]. Recently, migration and development patterns have been

influenced by communist planning strategies generating controlled rather than spontaneous migration. However, vestiges of the latter have never been crippled in centrally planned economies.

The Indian sub-continent has been a major arena of migration studies in Asia. Zachariah (1964) has painted a most lucid historical picture of internal migration in the sub-continent spanning the inter-War years. This study has been a stimulus for a flood of literature describing not only the national but also regional patterns of migration. A quadruple pattern of migration streams has been recognised by many studies including those by Bose (1967) as well as Gosal and Krishan (1975). These studies state that, of the four migration streams, rural-urban, rural-rural, urban-urban and urban-rural, the second is by the far the most dominant, followed by the first. Yet they evidence current obsession with studying rural-urban migration in many developing countries including Kenya and therefore pre-empt the need for detraction to other migration streams, for instance, rural-rural migration investigated in the present study. An interesting finding of Gosal and Krishan's study (1975) is that females are preponderant in rural-rural migration stream, a hypothesis tested in the present study, compared to males who are more dominant in the other migration streams. In the state of Kerala in India, Ramakumar and Kumari (1975) have, contrary to the previously held and popular notion, found that out-migration from the area is in fact not as high as or higher than that of other states in the country. On a national scale, all Western Kenya districts are out-migration areas where ranking by out-migration rates is possible; but their position within a regional scale has never been considered hence the relevance of the Kerala study to the present study.

There is a steadily expanding literature on migration in Southeast Asian countries. A survey of internal migration in these countries by Ng (1975) reveals the role of rural-rural migration in settlement of many areas, for example, the deltas of the Irrawady, the Chao Phrya and the Mekong rivers; the lakeshore of the Tonle Sap; the island of Java and the Central Plain of Luzon, especially in the last century or so. It echoes the future of migration research as concentrating on studies of limited scale in selected localities and with restricted analytical aims (Ng, 1975 : 189-190); and this has now become the fashion of contemporary migration studies. To this end, incisive studies have been undertaken in several countries of the sub-region; by Sundrum (1976) and Hugo (1977) in Indonesia; and by Ng (1969) in Thailand. The two Indonesian studies analyse inter-regional migration processes characterising dual economies of the developing countries. In the politically unstable Thailand, political events further complicate the migration model which must be examined beyond the framework of demographic and socio-economic phenomena. In the present study, this is attempted by considering a host of psycho-social factors which, admittedly, are difficult to ascertain, especially in surveys where migrants' responses constitute the primary data.

Migration studies available in Latin American and Asian countries are thus most heavily bent on rural-urban migration. The lacuna existing in the apparently ignored rural-rural migration does not seem to have bothered students of migration. Consequently, many studies have tended to duplicate the whole spectrum of findings in the literature available elsewhere in the world. Perhaps the African migration literature highlighted in the last section of this chapter and discussed in the next, breaks this monotony.

2.3. MIGRATION LITERATURE IN THE AFRICAN ENVIRONMENT

2.3.1 A Survey of Tropical Africa.

This review of migration literature is confined to tropical Africa primarily because sub-tropical regions have their own peculiar characteristics. For example, while North Africa is a kin to the Middle East in many respects, being ecologically and socio-culturally similar to it, the whole of white-dominated Southern Africa, until recently including Zimbabwe prior to its independence, remains a foreign enclave exhibiting features that are grossly atypical of the African world. However, some literature on migration to South Africa is cited because of its relevance to this study, South African mines being as dominant a destination of labour migration as the tea plantation area of Kericho.

Although a verdict has been reached that the description of migration in Africa is complicated by "the heterogeneity of its patterns which vary in relative importance between different regions in the same region at different times" (Lorimer, et. al., 1965), three categories of migration denote continuity and change. Prothero (1968) has identified these categories as movements that took place in the past, but which have now ceased to exist; movements that have persisted from the past into the present; and movements that have developed in recent times, mainly during the present century (Prothero, 1968 : 20). The tune of the category of migration experienced at any one period of time has had to be called by the process of modernisation and innovations accompanying it; and the present study falls neatly within the last category. Considering migration in the continent during pre-colonial, colonial and post-colonial eras, Hance (1970 : 130-140) underscores the fact that European - initiated developments

have stimulated economically motivated movements which persist in the post-colonial period. Indeed, the present study evidences such a process of migration which was triggered by a colonially designed socio-economic environment where the phenonenon has, since then, had a snowballing effect. Relating to Africa, the IDRC survey has reached the verdict that, despite the similarity of the determinants of rural-rural migration to those of the rural-urban component, rural destinations generally have a much thinner base of attractions than urban destinations (Simons, et al., 1977 : 37). This rationalises the lopsidedness of migration itself and migration studies, research-wise an unhealthy situation. Studies by Gugler (1968), Gould (1974b), Masser and Gould (1975) and Harvey (1975) vividly bear out this fact. Even migration models have generally been confined to the behaviour of rural-urban migration ignoring the other forms of migration such as the rural-rural stream[16]. All these studies pre-empt the need to shift the direction of migration study in African countries to the rural areas where a substantial proportion of the population live and will continue to live in the foreseeable future.

Western Africa has a steadily increasing stock of migration literature worth reviewing. The regional perspective is presented in several publications echoing the nature and spirit of migration study at different periods of time. A book edited by Kuper (1965) contains useful articles on the sub-region: Berg's article, for one, analyses the economics of labour migration. Despite a heavy urban leaning of most articles in Kuper's work, many of them illuminate the influence of a newly created socio-economic environment, including rural economic islands, on migration. They draw the familiar conclusions. The assertion in Mabogunje's regional study is relevant to the present study. He asserts that "what the colonial

period achieved was first to create conditions making for free movements of people and secondly, to considerably stimulate these movements ... the former through establishing a more permanent situation of law and order; the latter through improvements in transportation by rail, road, sea and air" (Mabogunje, 1972 : 6). Thus the creation of administrative as well as technological infrastructure gave impetus to a process which has not only articulated regional disparities in resource development, but which consequently regulated population movements. In no area other than the study area is this statement probably most relevant. A number of bilingual articles in a book edited by Amin, (1974) covering both Anglophone and Francophone West African countries, reveal interesting similarities of and differences between the two[17]. Now over to some specific country studies. In Nigeria, while Prothero (1957) has been pre-occupied with analysing the migration field of migratory labour, Cain (1972) has applied one of the most viable statistical techniques and Adepoju (1979) presented a clear picture of migration and economic opportunities. These studies are most useful for our purpose and, although the statistical technique used in Cain's (1972) study is not applied in the present study, its merits have been recognised elsewhere in the latter. In Ghana, Beals, Levy and Moses (1966; 1967), using an econometric model, have rationalised migration on the basis of economic disequilibria and their implications, whereas Asiwaju (1976) has considered immigration into the country from two former French colonies. This situation later aroused much outcry in the host country during economically difficult years as studies by Rouch (1961), Peil (1971; 1974) and Adomako-Sarfo (1974) verify. The scope of these studies for the present one may be stated: that the study area is a major destination of international migrants from other Eastern African countries, notably Rwanda and Uganda during the eight turbulent years (1971-9),

and that their presence might at one time arouse an outcry by the host country. In neighbouring Upper Volta, Gregory (1971) has summarised migration and its implications from a more detailed study which explains the interdependence of underdevelopment, dependency and migration (Gregory 1974). Much earlier, Skinner (1965) made an anthropological study of the Mossi, one of the most migratory ethnic groups in the country. Gregory's (1971; 1974) studies conclude among other things that migration is positively correlated with development and dependency in rural areas of the country, a hypothesis tested in the present study. Ardener's (1961) study of social and demographic problems of the plantation area in southern Cameroons highlights issues that are most crucial for the present study; the area is seen as the net in-migration zone which exerts adverse influence on out-migration areas. Migration studies in West Africa have had significant ecological, cultural, economic, historical and political underpinnings; and both summarised and detailed versions are available. They are certainly more broad - based accounts than Latin American studies, attempting to illuminate the whole matrix of migration and development trends.

Central Africa is another area where valuable migration literature is available. The area referred to in this context includes countries between Eastern and Southern Africa as well as those in Middle Africa between Eastern and Western Africa. Pioneered by anthropologists, most migration studies subsequently underline economic factors in this part of Africa where inter-territorial migration has been enhanced by "peaks" of development in white-controlled countries[18]. Mitchell has been the doyen of migration studies in Central Africa. His first studies (Mitchell, 1959; 1963) covering the whole sub-region constructed the platform for more refined analysis within narrower frameworks, specialising on the former Rhodesia

(Mitchell, 1954; 1968; 1969). Continuity in this research interest has been demonstrated by persistent activities of the Institute for Social Research in the University of Zambia, the successor of the defunct Rhodesia - Livingstone Institute. Comparison of Chadike's (1972) study and Mitchell's (1954) study of African mine workers reveals interesting concurrence as well as contrast. The thesis of these two is that, ultimately, migration seems to have a positive effect on out-migration areas, for example, through constant receipt of remittances which augment rural incomes and generally, develop the rural areas. They represent some of the most solid, albeit rare, rural-rural migration studies in tropical Africa, illuminating movements that have both internal and inter-territorial dimensions. The importance of rural-rural migration in Central Africa could take on political dimensions; and this important element is a major shortcoming of studies so far reviewed, studies which could explain the trascendency of other human aspirations over political animosity among countries in the sub-region. In an area where migrant labour has been responsible for development, the influence of politics is apparently negligible (Nattrass, 1976; Prothero, 1974).

Migration literature in the East African sub-region has been greatly wanting. But the studies that have been undertaken are an important treasure in the reservoir of mounting research efforts. The dearth of migration literature in Ethiopia and Somalia limits us to the conventional East Africa - Kenya, Uganda and Tanzania - where some useful migration studies have been accomplished. Among the earliest is Southall's (1961; 1969) account of the whole area. Despite its strong antropological leaning, the study crudely depicts the pattern of population movements as determined by a host of causal factors. In a recent work, Monsted and Walji (1978 : 137-8) consider both the determinants and the consequences of the four migration

streams identifying land shortage, environmental hazards, unemployment, migration selectivity and family structure as some of the major determinants of rural-rural migration. Tanzania has considerable demographic literature including that pertaining to population-land relationships. This is attributable to researches and publications of the Bureau of Resource and Land Use Planning (BRALUP) in the University of Dar es Salaam which also boasts having developed the first demographic unit in East Africa. The national pattern of migration has received closer attention since the 1969 census as two studies by Hirst (1969; 1970) evidence. Hirst's (1970) second study considers differential propensity to migrate among different tribal groups inhabiting different ecological zones, and themselves having varied migration experiences. In the present study, there is a combination of the most as well as the least migration-prone tribal groups in the national context but who may exhibit different characteristics in a regional setting. In Uganda, the Department of Geography at Makerere University, under its former head, B. W. Langlands, compiled population studies of all districts in the country which made great inroads into demographic characteristics including spatial distribution and redistribution of population[19]. Among those most relevant to us is Dak's (1968) spatial analysis of migrants in Uganda, in which internal and international migrants from contiguous states are identified and their demographic as well as socio-economic characteristics compared and contrasted. This rising tide of research interest ebbed all of a sudden because it was disturbed by an eight-year lull period (1971-79) when unprecedented political events in the country laid brakes on all forms of socio-economic pursuits including such studies. If it were not thus disturbed, the rising tide of literature would have by now paid greater dividends, possibly leading to more refined studies. But two studies must surely be summarised. A study by Taber (1969) observes that patterns of migration

tend to gravitate toward areas of economic opportunity and urban areas which offer not only a favourable economic environment but also desirable social and psychological satisfaction. The striking thing about internal migration in Uganda is its diversified pattern where destinations are not restricted to only a few areas, thanks to the relative homogeneity of ecological endowments in the country. Another study is by Masser and Gould (1975) which uses the case of Uganda to make generalisations on inter-regional migration in tropical Africa. Based on census data, whose reliability are also questionable, the study describes inter-regional migration in Uganda; designs a spatial interaction model of the process; and concludes among other things that conventional theories of rural-urban migration tend to give such a limited interpretation of migration that rural-rural migration, too, should be investigated to give a more complete picture (Masser and Gould, 1975 : 91). This deficiency in migration analysis, it may be argued, is inconsistent with realities of a host of factors that generate the four given migration streams; and yet most studies have more perpetuated than remedied it. If events in Tanzania and Uganda persist for the rest of the present century - whereby "Ujamaa" villages in the former and nearly a similar venture is undertaken in the process of economic reconstruction in the latter - then rural-rural migration studies are bound to proliferate in future.

2.3.2. Internal Migration Studies in Kenya.

Given that of the three East African states Kenya was the colony par excellence, its dual economy was and, as a colonial legacy, remains the most distinctive. Consequently, urban/rural, modern/traditional or centre/periphery dichotomy is conspicuous. It is perhaps for this reason that migration studies in Kenya tend to

perpetuate the Western tradition where rural-urban migration is representative of internal migration whose pattern correspondents closely to that of economic opportunity. Rural-rural migration has remained more mentioned in passing than analysed, a serious oversight on the part of students of migration.

The first major plunge into migration study in Kenya was made by Ominde (1968a) apparently inspired by his earlier study of population - land relationships in Western Kenya (Ominde, 1963). Using census data, the study identifies the two most important migration streams as rural-urban and rural-rural, the latter between the less to the more developed areas, such as the modern farms. This pioneering effort has paid significant dividends in subsequent studies not only by Ominde (1968b; 1968c) himself, but also a number of other scholars. Apparently, it led to Soja's (1968) comprehensive study of the modernisation process which uses multivariate statistics to identify the pattern of development in the country and the corresponding pattern of population movements that it sets ablaze. Perhaps due to the consistently mounting interest in this realm of research, Pettis (1971) has compared Kenyan and Nigerian social consequences of rural-urban youth migration which imposes tremendous losses on the areas of provenance at the expense of in-migration areas. Yet this was the fashion of the decade 1960-70 when the concern revolved around macro-studies on migration. In the seventies, a new chapter was opened in migration study, even in disciplines where no such studies had been envisaged before. It became the subject of undergraduate as well as graduate researches[20] and later the breeding ground of theories and models which have been applied in generalising the situation in the developing countries[21]. As may be realised at a glance, these studies are very specialised, being placed in geographical, economic and sociological premises.

Although their findings and conclusions have attracted widespread reaction from students of migration in different parts of the world, they lack indepth analysis of rural-rural migration in the context of regional economy. It is in this regard that the present study is expected to fill a longstanding gap and prepare the ground for even more analytical studies on this neglected migration stream. Moreover, their overemphasis on employment as the primary determinant of migration is obviously myopic since, it can now be agreed that, in some cases, the role of "other factors" is most crucial. A review cum analysis of migration literature on Kenya (Oucho, 1979a) laments this shortcoming in migration research. Finally, the study of Knowles and Anker (1977) constitutes a good complement to Rempel's (1977) analysis because it highlights the major determinants generating the pattern described in the latter. But the quality of such studies could be improved by controlling either the source area(s) or the destination(s) of migration so as to avoid the jumbled national pattern of migration that it tends to depict.

Emerging vividly from these and many other studies that could be, but are not, quoted here is the preponderance of literature on rural-urban migration at the expense of other migration streams. Efforts in rural-rural migration study are negligible in spite of the existence of distinctive plantation zones of tea, sugar cane, coffee and sisal in Kenya. Since enough has been done on rural-urban migration, attention should now be turned to rural-rural migration and other components which also affect the country's population and its economy. The strategy adopted by the spatial physical planning which supplements the sectoral Five-Year Development Plans, augurs well for mounting more than just rural-urban migration studies. In fact, it specifically demands rural-rural migration studies as the basis from which to model its structure and pattern.

2.3.3 Internal Migration Studies in Western Kenya

Western Kenya exhibits demographic traits typical of a highly mobile population. The array includes a rapid rate of increase attributed to high birth rates versus declining death rates, resulting in a youthful and most migratory population; a low sex ratio signifying female preponderance vis-a-vis male deficiency, this being the result of migration selectivity; and a dense populatin which due to diminishing land sizes in better-watered areas and ecological constraints in the drier lowlands along the lakeshores, has caused population pressure on the land. In brief, it is an out-migration area with resources yet to be developed, and one often featuring in migration studies.

Glimpses of migration within and outside Western Kenya may be seen in three studies by Fearn (1955; 1958; 1961). These studies underline the impact of population on land usage; the effects of the now exhausted gold-mining activity on population movements, itself a rural-rural migration process; and the pattern of socio-economic development in the area, which influenced a corresponding pattern of intra-regional migration. But this implicit migration was first focussed on by Ominde (1963) in his first study which has been the epicentre of other studies already reviewed. Ominde's study underscores the influence of demographic and edaphic factors on migration, the two ranking high among the non-economic determinants. Yet nearly a decade elapsed before other migration studies were undertaken in Western Kenya, ushering in a significant lull. In a rural-rural study, Ogungo (1971 : 32-46) identifies two sets of determinants, namely, economic and social causes on the one hand, and psychological and political reasons on the other. It demonstrates the investigative capacity of a case in which a fixed destination is analysed in the context of diverse source areas. Another study carried out by Ayiemba (1974) considers the

exchange of population between subsistence and commercial agricultural areas in the vicinity. The cardinal thesis of this study is that environmental hazards, such as floods and famine, are among the chief "push" factors of this migration process. However, these studies are deficient, especially in delimiting precise "migration fields". In a study by Waller, et al., (1968), out-migration is considered a blessing in disguise for Western Kenya whose underdeveloped economy could not contain a sedentary population. Yet this assertion is not substantiated by any facts in the study, a weakness which could be avoided by applying an acceptable "index of burden" in Western Kenya districts. For example, Moock (1976) identified land shortage in South Maragoli area of Kakamega district as a "push" factor. If applied to other areas, disaggregated levels of land shortage could reveal whether or not it accounts for out-migration. Compared to other regions of Kenya, Western Kenya has produced more explicit rural-rural migration studies, albeit on a much smaller scale. The present study encompassing the whole region is expected to make findings and draw conclusions that have farreaching implications for further research in as well as development of the region.

The destination under study has also attracted some studies. These include an investigation of the origins and growth of tea industry within the framework of East Africa by McWilliam (1957); a geographical analysis by Waino (1968) covering the whole of Kenya; and economic study of the same magnitude by Mathare (1969); and, focussing on the area, the district-wide study by Kipkorir (1976) and the labour history of the tea estates complex itself by Osoro (1979). Except for the last one, all these studies are concerned with the tea industry with only peripheral interest, if any, in human phenomena related to it. The last work is a historical portrayal of the migrant

labour population which, in keeping with the tradition of history, highlights the recruitment process, remuneration and other issues mirrored in the colonial policies and the transitional years immediately preceding and post-dating independence. It must be stressed, however, that the present study is beyond the scope of the more limited "labour migration". Being centred on the household unit, it undertakes to investigate migration of heads of households separately from or together with other members of the household and, as if that were all, to analyse aspects of population dynamics as revealed by data relating to married females in the reproductive years. Above all, it investigates the net effect of migration on population change in concert with or as distinct from natural increase of population. Based on scientific sampling procedures and appropriate demographic as well as statistical techniques, the present study gives a more comprehensive picture of migration and population change in the study area within the larger framework of Western Kenya as a whole. It is a pioneering geographical cum demographic study of the study area which is a function of intricate demographic as well as other phenomena in the area in which it is located.

In concluding this chapter a few points may be revisited. It may be observed that migration, certainly the single aspect of population dynamics most studied by geographers, has carved an important niche in social science research. The literature just reviewed has clearly shown that migration studies have been nested in geography departments in the Universities, and that geographers have given it spatio-temporal treatment which is badly lacking in other disciplines. Even in Kenya, its study was spearheaded by, and has remained a monopoly of, geographers. But the theoretical perspective of migration study has occupied an equally comfortable position in other sciences. Physics, for instance, has bred a family of

social physicists whose spatial interaction models have generated interesting, albeit not necessarily convincing, debate among students of migration. The screen was hanged by earlier anthropological studies among different societies in Africa, followed by economic contributions which portrayed very satisfactorily the points in time they related to. Because of their prejudices, encouraged more by the colonial environment than serious scholarly analysis, they should now be re-examined in the context of both colonial and independence epochs in order to inject more objective analysis. Also, the fashion of blanket, nationally designed migration studies, like other fashions in life-styles, is fast giving way to the more incisive micro-studies, such as the present study. As the first regional study on migration and population change between the traditional and the modern sectors, the present study ushers in a challenging phase of continuity in migration analysis. Perhaps in no better way than this work could this goodwill be bequeathed to our descendants, the future generation of migration analysts.

NOTES:

1. This periodical is published at the Hague and Geneva in order to shed light on European migration and its inherent problems. Published along with it since 1974 is Migration Bulletin in English, French and Spanish. Both of them are published by the Inter-Governmental Committee for European Migration and the Research Group for European Problems.

2. This publication, produced in English, French and German languages, is the work of the Secretariat for Migration of the World Conference of Churches based in Geneva.

3. Published by the Centre for Migration Studies in Staten Island, New York, in collaboration with

Migration and Refugee Affairs in Washington, D.C., this important journal has special editions on Latin America, Africa, Europe and other world regions. See special editions on Latin America, Vol. 6, No.2 (Summer 1972); Tropical Africa, Vol. 8, No.3 (Fall 1974);and Europe, Vol. 11, No. 2 (1977).

4. This annotated bibliography is not limited to migration; it covers all other components of population dynamics and related subjects. It treats migration in four contexts - general, international, internal and temporary, rural-rural migration featuring in the last one. It is published jointly by the Office of Population Research and the Population Association of America, based in Princeton, U.S.A.

5. The "African Population Mobility Project" was established by the Social Science Council of the United Kingdom in the Department of Geography, University of Liverpool, under the direction of a renown African migration scholar, R. Mansell Prothero. Among its leading bibliographic cum review publications, and one relevant for our purpose is Gould, W.T.S. (1974a.) See also Prothero, R. M. (1975).

6. For Western Europe, see Fielding (1975) and for Western Europe, see Kosinski (1975).

7. Income differentials have been used to determine regional disparities in migration. Championed by Sjaastad (1961; 1962), it has attracted a number of Sjaastad's disciples: Laber and Chase (1971); Bowles (1970); and Okun and Richardson (1961) who have analysed income inequality.

8. This school of thought has been championed by Todaro (1969; 1971) and his associates Rempel and Harris with whom he initiated it in Kenya.

9. The "intervening opportunities" approach has been favoured by Stouffer, initially relating migration to distance (Stouffer, 1940) and later incorporating the element of competition among migrants (Stouffer, 1960).

10. See Simmons, A., et al. (1977) and analysis of the global, regional and national consequences in United Nations (1973).

11. Studies in India (e.g. Kumar, nd. : 626) confirm this trend and a recent study of Kenya reaches this surprising verdict (World Bank, 1980 : 32).

12. Using a systems approach, Mabogunje (1970) implies that the "push-pull" hypothesis of the two termini of migration flows may be explained by control sub-systems operating in opposite directions in the two places.

13. Some of the most informative literature is found in Metge (1964), Poulsen (1970); Poulsen and Johnson (1973); Ritchie (1961); and Rowland (1971).

14. Studies discussing the issue include Smith (1967); Sahota (1968); Neiva (1966); Chardon (1966); Diegues (1967); and Fischlowitz (1969).

15. Detailed analysis is found in "Manchuria as a demographic frontier" (Population Index, 1945).

16. In criticism of Todaro's (1971) model of labour migration and urban unemployment, Adepoju (1977) stresses this important shortcoming.

17. While a number of articles in S. Amin's (1974) book highlight bilingually the situation in both Anglo- and Franco-phone West Africa, Caldwell, et al's (1975) unilingual analysis is confined to Anglo-phone West Africa.

18. Notable examples are tribal studies of the Tonga by van Velsen (1961) and of the Nyakyusa by Gulliver (1957).

19. These were published as Occasional Papers of the Department of Geography, Makerere University, Kampala and consisted of undergraduate dissertations, post-graduate theses and research reports that are too many to be quoted here.

20. The dissertations and theses may be mentioned according to respective disciplines : in geography are undergraduate dissertations by Ogungo (1971) and post-graduate theses by Ayiemba (1974) and Oucho (1974); in economics is Rempel's doctoral dissertation (1971); and in sociology are Nyaoke Owuor's (1974), Matingu's (1974) and Nakitare's (1974) post-graduate theses. A decennial summary of all post-graduate dissertations is compiled in University of Nairobi Libraries' (1980) publication.

21. In a joint research project, Rempel, Harris and Todaro carried out a study of the eight largest urban centres in Kenya, namely, Nairobi, Mombasa, Kisumu, Nakuru, Eldoret, Thika, Nanyuki and Nyeri. Their preliminary findings (Rempel, Harris and Todaro, 1970) have been the basis of continued writings on rural-urban migration and urban employment cum unemployment. These include Rempel (1977) as well as Todaro (1971; 1976).

CHAPTER III

CHAPTER III

METHODOLOGY OF DATA COLLECTION AND ANALYSIS

The previous two chapters have illuminated the background to both the study area and the problem under study and presented a broad perspective of literature review. They constitute the frame of reference for this study by echoing among other things its scope and limitations. Against this background may now be considered the methodological framework of data collection and subsequent processing culminating in their analysis which gives shape to the study itself. It may be stressed at the outset that this study is primarily based on the data collected from the predominant category of migrant population in Kericho tea estates complex, namely, the rank and file of estate and factory labour force, together with adult members of their households. In keeping with national census and survey enumeration in Kenya, it relies on a *de facto* survey carried out in the research area over a period of two years. The present chapter analyses and rationalises methodology adopted to collect and analyse data used in the study as subsequent chapters will show.

3.1 RESEARCH DESIGN AND DATA

In an enormous and highly institutionalised area such as the Kericho tea estates complex, research design and operations depend heavily on several issues involving the researcher and researched alike. For example, there is of necessity heavy reliance on the goodwill of the management of the whole complex because it was virtually impossible to exercise strict adherence to all operational aspects of research without, at one stage or another, adjusting readily to unexpected occurrences within the management as well as respondents. However, no adverse

relationship transpired between the three interested parties in question. The whole process from research design to data processing involved four activities which are discussed in the first section of this chapter: reconnaissance visits, research design and final survey; sampling design for the data collected; primary and other data; and data processing prior to their subsequent usage.

3.1.1 The Survey in the Research Area

Areal and organisational complexities of the research area that are already alluded to posed important challenges for reconnaissance visits as well as pilot surveys, research design and the final survey. During this period, a number of activities took place. Reconnaissance visits were carried out as a first step for planning strategies for field activities.

The idea of reconnaissance visits was to have a general "feel" of the research area in order that certain doubts in the mind of the researcher were cleared; proper sampling framework would be designed to give adequate sample size; work programme would be sketched out; and a modest number of interviewers deployed in the final survey. As initially planned, this preliminary survey was accomplished in the scheduled period of two weeks. It embodied mainly clearing research credentials with both provincial and tea company administrations; formal introduction of the researcher and his interviewers to those among whom they had to work; broad explanations of objectives, duration and benefits of the research project to the latter; travelling across the length and breadth of the whole tea complex in order to have insight of location and extent of all tea estates/factories and, more crucial for the survey, that of the housing lines where interviews were later to be carried out. To finalise

everything at this preliminary stage, discussions were held between the researcher and relevant officers of the tea managements on how best the survey would be conducted. These arrangements feature as aspects of the research design that were essentially convenient for both the reseacher and the tea management.

Several procedural matters were instituted along which the research was modelled. These involved primarily four issues: formal approval of a sample of estates and factories where surveys had to be carried out was given by the tea estates; the tea managements volunteered to provide free transportation for interviewers to and from distant sample areas during their operations; a timetable for interviewing 's in sample areas was drawn, not necessarily for strict adherence, but rather to systematise operations and allow for orderly adjustment to imponderables such as bad weather or recalls to sampled respondents not encountered at initial calls; and guides were provided for interviewers in order to draw co-operation from the population and avoid delays ascribed to interviewer's improper knowledge of sample areas.

The actual survey lasted from August 1978 to August 1979, moving from the African Highlands Produce (AHP) group to the Brooke Bond Liebig Kenya (BBLK) group. Daily inverviewing timetable lasted for two hours in the evening, from 4.00 - 6.00 p.m., but persisted until 7.00 p.m. in sample areas neighbouring interviewers' places of residence. Factors such as speed and accuracy of respective interviewers, weather conditions, availability of sampled respondents and other matters militated against continuous flow of the exercise.

Finally, a word about the interviewers. A total of six interviewers - two females to work amongst female respondents and four males to concentrate among male respondents - were recruited for the exercise. Aged 18-25 years and holding the East African Certificate of Education (Ordinary Level equivalent), the interviewers engaged in the exercise were proficient in both English and Swahili languages. While the former enabled them to follow interviewing instructions and complete the questionnaires, the latter facilitated easy communication with respondents who were more eloquent in it. The interviewers duly underwent a week-long training, followed by mock surverys from which some vague matters were clarified before embarking on the actual survey.

Incorporated in the actual survey were both supervision and quality control. The working schedule was confined to evenings and mornings only: evenings were spent in carrying out interviews and the following mornings were reserved for editing the previous evening's work; the rest of the time was left free for interviewers to rest and attend to personal matters. Incomplete or wrongly completed and other problematic forms were returned to the submitting interviewers for re-interviews and corrections. This device helped greatly in monitoring the quality of work done by each enumerator. No supervisors were deployed in the exercise, the reseacher himself shouldering the responsibility of supervision, but guides provided the required help.

3.1.2 Sampling Framework and Sample Size.

This study is based on probability or random sampling. The process of stratified random sampling adopted in this study may be considered in two contexts. First, the sampling procedure used in the study and its justification in the circumstances in which the researcher found himself. The

second are estimates' from the sample that was ultimately drawn for making inferences about population in the study area.

(i) Sampling Procedure

A two-stage sampling procedure was adopted in this study: simple random sampling of estates/factories from a sample frame comprising a total list of both tea managements and proportionate stratified random sampling of households in the sample estates/factories from a uniform sample proportion was drawn in every case.

Stratified random sampling of estates/factories involved using two-digit random numbers (01-99) to draw a sample from a list readily provided by the tea managements. Each was assigned a code in order to systematise the process of sampling. From a total of 47 estates/factories, 15 sample areas were selected, representing 31.9 per cent in the study area or 7 (14.9 per cent) in Brooke Bond and 8 (17.0 per cent) in African Highlands area. The last two figures represent 29.2 per cent and 34.8 per cent respectively of the total number of estates/factories. (see Figure 7).

Proportionate stratified random sampling (i.e. sampling with uniform fraction) was adopted in the sample estate/factory "villages" to draw the sampling units, namely, households each assigned a housing unit to itself. A 25 percent sample of households was drawn in every case, the exercise being greatly aided by the orderly distribution of housing lines. Sampling elements in the sampling units were two-fold: heads of households and other members of their households aged 15 or more years among whom Schedule A questionnaire was administered; and married females in the same household (spouses or other relatives in the

15 - 49 years age bracket among whom Schedule B questionnaire was administered (see Appendix I and Section 3.2). This explains the differential sample size in the sample areas which was determined, inter alia, by household sizes, diversity and other differentials. It is the data collected from these two sources that have been extensively used in this study, and on which statistical and demographic analyses have been based.

The distribution of respondents on which this study is based is illustrated by Table III.1, and the geographical location of sample areas explained by Figure 7. Perhaps the most striking feature in the table is the conspicuous difference between samples drawn from BBLK and AHP areas. The very difference in the number of housing units and, therefore, the size of sample area, underscores this fact. Another important observation is the relatively uniform sample size from A and B questionnaire schedules in BBLK which contrast shaprly with noticeable variation in AHP. This is attributable among other things to differential composition of households and, subsequently, difference in eligible respondents to the two questionnaire schedules. These variations are considered more closely in sub-section 3.1.2 (ii) below in order to appreciate their implications for the data used in the study. Since there were no incomplete interviews and a negligible proportion of uncompleted questionnaires, the variations can hardly be ascribed to enumeration errors.

(ii) Estimates from the Sample

Earlier it was asserted that there was uniform sampling fraction for all sampling units in the two strata whereby one-fourth of households were sampled. This proportionate stratified random sampling has more advantages over simple random sampling and was adopted

Table III.1 Distribution of Respondents to the Questionnaire Schedules By Sample Areas in Kericho Tea Estates Complex.

Sample Area	Sample Size of Respondent Categories by Questionnaire Schedule Administered.					
	A		B		A + B	
	Number	Per cent	Number	Per cent	Number	Per cent.
Brooke Bond Liebig Kenya (BBLK)	277	100.0	256	100.0	533	100.0
Chagaik (EF)	50	18.0	35	13.7	85	15.9
Chebown (E)	33	11.9	43	16.8	76	14.3
Chelimo (E)	32	11.6	33	12.9	65	12.2
Kerenga (EF)	28	10.1	29	11.3	57	10.7
Kericho (E)	33	11.9	28	10.9	61	11.4
Kimugu (EF)	67	24.2	41	16.0	108	20.3
Tagabi (EF)	34	12.3	47	18.4	81	15.2
Mean ($\bar{x}$)	40		37		76	

Table III.1 Continued.

African Highlands Produce (AHP)	308	100.0	103	99.9	411	99.9
Chemase (E)	32	10.4	33	32.0	65	15.8
Chomogonday (F)	33	10.7	6	5.8	39	9.5
Dimbolil (E)	41	13.3	11	10.7	52	12.6
Kapsongoi (E)	58	18.8	11	10.7	69	16.8
Kipketer (E)	32	10.4	9	8.7	41	10.0
Saosa (F)	31	10.1	13	12.6	44	10.7
Saramek (F)	41	13.3	11	10.7	52	12.5
Tiluet (E)	40	13.0	9	8.7	49	11.9
Mean ($\bar{x}$)	39		13		51	
ALL SAMPLE AREAS (N)	585	62.0	359	38.0	944	100.0
Mean ($\bar{x}$)	39		24		63	

Notes: E = Estate; F = Factory;
EF = Estate and Factory together.

primarily because it ensures that different characteristics of the sample population - notably sex and age distribution and a host of socio-economic variables - are correctly represented in the sample (Moser and Kalton, 1971 : 85). A number of statistical estimates are made from the sample which provide explanations on the nature as well as distribution and thus suggest certain limitations of the data. Given the assumption that the sample of heads of household (HH) represents 25 percent of all households in the study area, the number of households may be estimated but with considerable restraint as to its accuracy. That 520 out of 585 male respondents were heads of household reinforces this estimation: given that this number (520) was drawn from a sample of 19 estates/factories from a total of 47, there could be 5,788 heads of household (or 585 x 47/19 all multiplied by 4, the raising factor or reverse of the uniform sampling fraction). A sample of 585 amounts to a 10 percent sample of households whose heads and married female members were interviewed. But perhaps a better insight of estimates from the sample may be gained from a separate analysis (see Table III.2). All statistical estimates show that the data from either the strata or household respondents, as shown by all measures of central tendency, are variable; but standard errors are small enough to earn viability to the data.

Variation of measures of central tendency depict basic differences in samples from different strata as well as households. The mean sample of 63 for all respondents differs from that in BBLK stratum by - 13 and from the one in AHP by +12. With a probability of 68.2% the confidence limits around the mean vary from 5 to 10 with 95.4% probability and 15 with 99.7%, giving sample variations of 58 - 68, 53 - 73 and 48 - 78 respectively. In BBLK where the variation is 7, 14, 21 with the three probability levels, samples fall in the

Table III.2 Statistical Estimates from Samples By Strata and Households in Kericho Tea Estates Complex.

Statistical Estimates	Kind of Samples				
	Total of Strata and Households	By Strata		By Households	
		BBLK	AHP	Male Respondents	Female Respondents
	n = 944	n = 533	n = 411	n = 585	n = 359
Measures of Central Tendency:					
Mean ($\bar{x}$) $\bar{x} = \frac{\Sigma x}{n}$	63	76	51	39	24
Standard Deviation (s) $s = \sqrt{\frac{\Sigma x^2 - \bar{x}^2}{n}}$	19	18	11	11	14
Coefficient of variation (V) $V = \frac{s}{\bar{x}}$ (%)	30.2	23.7	21.6	28.2	58.3
Standard Errors:					
Standard Error of the Mean ($SE_{\bar{x}}$) $SE_{\bar{x}} = \frac{s}{\sqrt{n}}$	5	7	4	3	4
Standard Error of the Standard Deviation ($SE_{\bar{x}}$) $SE_x = \frac{s}{\sqrt{2n}}$	3	3	2	1	2

Table III.2 Continued.

Best Estimate of the Standard Deviation ($\hat{\sigma}$) $\hat{\sigma} = s\sqrt{\frac{n}{n-1}}$	20	21	13	12	15
Standard Error of a Percentage Estimate (SE%) $SE\% = \sqrt{\frac{pq}{n}}$ (SE% = d (desired value))	13	13	13	13	13
Minimum Sample Size (n) $n = \left(\frac{S}{SE_{\bar{x}}}\right)^2$ at d = 2		616		589	

ranges 69 - 83, 62 - 90 and 55 - 97 levels respectively; and in the case of AHP where it is 4, 8, 12 the samples vary from 47 - 55 to 43 - 59 and 39 - 63 with the three respective probability levels. The mean of male and female respondents differs by +15 in favour of the former. These differences influence variations of standard deviation, variance and coefficient of variation. In a very significant way, as will become apparent in various parts of the study, they arouse considerable caution in interpreting the data by appropriate analytical techniques.

Given the variability of data already discussed (Table III.1), it is encouraging to find small variations in standard errors (see Table III.2). While the standard error of the mean ($SE_{\bar{x}}$) varies between 3 and 7, a difference of 4 only, the standard error of the standard deviation (SE_s) varies between 1 and 3. This suggests that despite absolute variations between sample areas and households, standard errors are small enough to have no significantly adverse effects on the data. In order to refine the standard deviation, an "estimate" of the "true" standard deviation is obtainable by making a "best estimate" of it, using Bessel's Correction $\sqrt{\frac{n}{n-1}}$. This gives true standard deviation less by 1 in all the cases. The best estimate of the standard deviation ($\hat{\sigma}$), symbolised thus because it denotes the "true" or population deviation, is variable too, presumably being consistent with other characteristics of the data. But the standard error of a percentage (SE%) which gives the desired value for standard error (d) is uniform, reflecting the uniform sampling fraction applied in drawing the samples.

From these measures and standard errors the minimum sample size (n) is estimated. At the desired value (d), 13, it would be uniform by either strata or household composition. But at 2% (d = 2), the minimum

sample size is 616 for the strata and 589 households decreasing as the desired value increases. This estimate suggests that the sample household and strata respondents are just adequate for this study, and for making inferences about the migrant population in Kericho tea estates complex.

The foregoing explains the scope and limitations of the sampling procedure adopted, the sample size drawn in the process and estimation from strata and as well as household samples in the study area. Accordingly, the next sub-section considers data processing before their interpretation by appropriate statistical and demographic techniques, discussed later in section 3.2 below. In using the data to substantiate arguments posed in subsequent chapters, two levels of aggregation may be indicated at the outset: the "global" level of the study area in which a total sample of 944 will be used and the specific level when either a sample of 585 male respondents or 359 female respondents will be used.

3.1.3 Data Base

As a sample survey this study relies mainly on primary data collected from the field through interviews that have already been explained. However, this source of data had to be supplemented with others, notably records available in tea management offices, reports and annual returns made to the Ministry of Labour as required of all employing institutions. Beyond the study area, data are drawn from 1969 census especially with regard to the migration field whose demographic characteristics as well as a host of socio-economic attributes are crucial for understanding net migration including in-migration. Although some 1979 census data are used, their provisional nature undermines their inclusion in the study for more serious analysis. Indeed their use is bound to arouse

several problems, such as the need to incorporate boundary and name changes in locations which would affect the data pertaining to them as at the time of survey. Unless stated or the source acknowledged, all data used in the study emanate from the survey and have to be interpreted in the light of their nature as well as limitations indicated in various parts of this chapter.

3.1.4 Data Processing

Raw data collected during fieldwork underwent processing to make them suitable for analysis. This involved data reduction through measures such as the construction of two code books, one for schedule A questionnaire, the other for schedule B questionnaire; and coding the data on coding sheets. No major problems were encountered during this process.

The next stage was analysis of data which involved the use mainly of scientific programmable calculator; but the computer was also used in special cases, for example, in working out multiple regression and correlation as well as associated tests. From the "clean" data two kinds of tabulation have emerged. In the first place, there are frequency tables expressing data in both absolute and relative terms; they give much insight into the second set of tables that have been constructed, namely, more analytical statistical tables expressing among other things the association between dependent and independent variables. Next to be considered is the nature and scope of the interview schedules and a subsequent section (3.3) examines the analytical framework of the study.

3.2 THE INTERVIEW SCHEDULES

Since this study is based primarily on survey data, it is necessary to explain briefly the nature and scope of the two interview schedules that were used (see Appendix I). Both schedules were by no means mutually exclusive. Rather, they were complementary although each concentrated on specific aspects most close to the two respective respondent groups.

3.2.1 Interview Schedule A

This interview schedule was broad enough to collect information about the heads of household. Basically it consists of three main components summarised below.

The first part covers identification of respondents at their residence in respective villages in the tea complex. Information sought include the name of tea company, working cum residential estate and house number of the unit occupied; name of respondent and/or relationship to head of household; and record of interview as well as possible remarks recorded by the enumerator. This part of the interview schedule was crucial for identifying respondents and subsequent interpretation of their individual as well as group characteristics covered in the rest of the schedule.

A substantial part of the interview schedule is devoted to mounting demographic information: ethnic, and especially tribal, origin, sex, age; mobility characteristics; fertility and mortality data; and population change. Data collected here have been extensively used in the study. For example, tribal origin, confined to Western Kenya Districts and the migratory Kikuyu of Central Province have aided our analysis of chain migration, inter-personal information flow about job opportunities and other

ethnic differentials of migrants. Age-sex structure has been widely cross-tabulated with other demographic and socio-economic variables. Mobility characteristics have been considered on the past, present and future perspectives, placing emphasis on the medium of learning of job prospects, initial support at the time of migration, distance to Kericho, reasons for out-migration, maintenance of contact with permanent domicile, relations living at home and anticipated migration plans. Both fertility and mortality data relate to the last five years; but information collected revealed insignificant occurrences of the two. Population change covers family size change before and after migration to Kericho, any evidence of chain migration, the source of information about job opportunities and whether or not migrants ever stayed with some relatives/friends at the time of migration.

The rest of the interview schedule covers a number of migrants' socio-economic characteristics: religious affiliation, birth place vis-a-vis usual residence information, marital status, educational attainment and educational needs, economic status cum activity and household data. Cross-tabulation of birthplace and usual residence has been instrumental in determining mobility. Other items are self-explanatory and are used in different parts of the study.

Schedule A accounts, therefore, for a substantial portion of this study. Among other things, it constitutes the focus of all the analytical chapters subsequent to this chapter. But it explains only partially varied aspects of migration presented in the study. The schedule took 20-30 minutes to administer to each respondent.

3.2.2. Interview Schedule B

This is a much smaller interview schedule administered specifically among married females aged 15-49 years. Intended to supplement information collected in Schedule A, it consists of four main sections: identification, demographic and socio-economic variables and miscellaneous information.

The first two sections are identical with those in Schedule A. But duplication was avoided in household data and marital information is expanded to probe some marital conditions, notably the form and order of marriage; the time and nature of mariage in relation to migrating to Kericho. Similarly, fertility data are expanded to explore possibilities of having more children and their specific number, the form of baby feeding and birth experience since migrating to Kericho. This part of the interview schedule was rather sensitive and yielded unreliable data hence exclusion from analysis of parts of it.

Miscellaneous information proved similarly sensitive. It "exposed" females' de facto recognition of co-wives (something only few women recognise) and where the latter stayed; the husband's brothers and sisters; and other children staying with her, their sex, age, relationship to head of household and year of in-or-out-migration. Much of the information in this part was partially intended to probe that given earlier in the interview schedule.

Schedule B accounts for a small but significant portion of this study. From it family ties have been analysed in the light of split or simultaneous migration, continuation or break up of marital connections, co-habitation with husbands or single status in the event of divorce/ separation or widowhood and revelation of the "extended family" system. Administering it lasted for 15-20 minutes

only. Thus both inverview schedules were administered in each applicable household for some 35-50 minutes, an average of 40 minutes for a complete household interview.

3.3 TECHNIQUES OF DATA ANALYSIS AND INTERPRETATION

3.3.1 Statistical Techniques and their Application

Diversity of the two interview schedules used to collect primary data suggests that the latter are complex, spanning all the three measurement scales. The first scale is nominal, relating to data concerning tribal group, sex, birthplace and permanent home, marital status and other characteristics of respondents. Second, the ordinal scale which involves data pertaining to order of marriage as well as birth, order of migration in the process of chain migration, number of children born before and after migration to Kericho and the like measured in ordinal scale. Third, the interval scale in which the bulk of data used in this study are measured: age, educational attainment, income by salary received, year of migration and so on.

The distribution of the data used in the study is expressible by frequency polygon which, however, yields different curves at the three levels at which the data are interpreted. The total sample of 944 nearly approximates normal distribution that is only distorted by estate/factory data in the magnitude of 80 or more. In this regard, they can be treated as normally distributed data to which appropriate techniques of hypotheses testing may be applied. Similarly, the data about male respondents including heads of household (schedule A) are normally distributed but with conspicuous distortion by samples around 45 or more. Data about female respondents (schedule B) are rather anomalous, exhibiting a peak at 15, a trough

around 25 - 35 thence becoming platykurtic in terms of kurtosis in the range 35 - 50. The skewness of data was tested by Pearson's second co-efficient of skewness using the following formula:

$$\text{skewness} = \frac{3(\text{mean-median})}{\text{standard deviation}}$$

Substituting it with the data, the coefficient of skewness is a mere 0.32 for the whole sample, but increases to 1.64 for data pertaining to male respondents and is negative as indicated by a coefficient of -0.86 for female respondents. The leptokurtic nature of male data is partly explicable by concentration of sample sizes in the region of 30s where bi-modal distribution of data occurs.

The foregoing description of the distribution of data which ranges from nearly normal to asymmetrical forms must be explained in the context of statistical techniques used in the study. These range from aspects of descriptive statistics to inferrential statistics, notably hypotheses testing, regression and correlation techniques. Only those relevant to particular situations have been used in the study, justification for their use explained whenever they appear. The greatest emphasis is placed on non-parametric techniques for testing hypotheses. The major advantage of these techniques lies in their application irrespective of the measurement scale or distribution of the data (Siegel, 1956). The test mostly applied in this study, especially for testing hypotheses is the Chi-square (X^2). Besides, particular attention is given to the association between dependent and independent variables, tested by regression and correlation techniques as well as the F-test. As both a demonstration and in order to ascertain the nature of data at the outset, the t-test and analysis of variance (ANOVA) are applied to the primary data.

Using a two-tail t-test for data from the strata on the one hand and the households on the other, hypotheses are tested as to differences between two sets in both units. For the strata the following hypothesis is tested:

H_o: There is essentially no difference between the sample data from the two strata.

H_1: There is difference between the sample data from the two strata.

Since the computed value here is greater than the t value at α.01 level but less than that at α.05 level, H_o is rejected at α.01 but accepted at α.05 levels of significance. This result augurs well for the use of data relating to the strata only at α.05 level of significance. For the two sample categories from households the following hypothesis is tested:

H_o: There is no significant difference between the two respondent groups interviewed in the study area.

H_1: There is significant difference between the two respondent groups interviewed in the study area.

Since the computed value is less than t values at both levels, H_o is accepted at both .01 and .05 levels of significance. Again, this is an instructive feature that has to be taken congnizance of in interpreting the data.

Knowing the limitations of hypothesis testing, short of other statistical analyses that enhance clarity of their significance, it is imperative to go beyond the t-test. In order to avoid Type I error, whereby a hypothesis is rejected when in fact it should be accepted,

Table III.3 - ANOVA Table for Various Samples in Kericho Tea Estates Complex.

Source	Variation	d.f.	Variance	F-ratio	Prob-value
Between Strata	1705	1	1705	$F = \frac{1705}{239.54}$	.01 p.05
Residual	3114	13	239.54	= 7.12	
Total BBLK & AHP[a]	4819	14			
Between Sexes	567	1	567	$F = \frac{567}{85.5}$	.01 p .05
Residual	1026	12	85.5	= 6.63	
Total BBLK[b]	1593	13			
Between Sexes	2704	1	2704	$F = \frac{2704}{48.2}$	.01 p .05
Residual	723	14	48.2	= 56.10	
Total AHP**	3427	15			

(a) Unequal Sample sizes: 7 in BBLK and 8 in AHP

(b) Equal sample sizes.

analysis of variance (ANOVA) test is applied to assess the validity of the difference between various sample means (Table III.3). Conclusions for the three cases are as follows. Since $P(F_1, 13> 4.67)$ the null hypothesis (H_0) that there is no difference between the sample means of BBLK and AHP is rejected at .05 level of significance, and H_1 accepted instead, and since $P(F_1, 13> 9.07)$, H_0 is accepted at .01 level of significance. The two conclusions are in contrast to the result of the t-test already given. As for BBLK samples alone the null hypothesis (H_0) that there is no significant difference between the two sex-differentiated respondents is rejected at .05 level of significance but accepted at .01 level of significance. The ANOVA test for AHP samples suggests that H_0 is rejected at both .05 and .01 levels of significance. This applies to samples of both sexes for the whole study area, another result that is in conflict with that of the t-test already discussed. Statistical tests apart, there is apparent disparity in data collected in different samples areas, and the greatest anomaly exists in the AHP female data.

In the rest of the thesis these and other statistical techniques will be used to aid intuition. Sometimes, however, they will be dispensed with in the light of certain demographic techniques explaining some features better. We now turn to considering demographic techniques applicable to the study.

3.3.2 Demographic Techniques

Like the foregoing, no exhaustive list of demographic techniques used in this study may be presented here. But distinction may be made between those techniques for improving the quality of data without being used in raw form and those applied in interpreting demographic phenomena as revealed by the data. In the former case, methods of

graduating data, especially age distribution which is a notorious demographic attribute, will be used whenever necessary. For example rates and ratios of different demographic phenomena will be computed with a view not only to comparing them with established demographic norms, but also relating them to migrant as opposed to the general population. In keeping with the study in question, these will be aimed at explaining migration differentials, migration rates as well as probabilities. An interesting technique included in the study is the cohort analysis which illuminates migration histories, generation migration tendencies and probable future migration plans (Eldridge, 1964).

By combining both statistical and demographic techniques, a more blended interpretation of various features of migration and population change will be attempted. Thus a model of rural-rural migration constructed in the study is a composite amalgam of statistical and demographic techniques based on the interplay of varied phenomena.

3.3.3 Problems of Data and Analytical Instruments

Despite an impressive array of statistical and demographic analytical instruments, this study is by no means devoid of certain shortcomings relating to data as well as methods of analysis. The primary data used exclusively in the study are in certain cases as defective as census or other survey data. Keeping the sample size within financial and other limitations seems to have resulted ultimately in mounting data that may not adequately reflect characteristics of the migrant population in the study area. The data are liable to some fluctuation, owing to the incomplete coverage of the population and conclusions drawn from them may deviate appreciably from the true situation (Barclay, 1958 : 18).

In order to monitor this feature, some findings of this study are compared and contrasted with those in other closely related surveys as well as censuses. Any departures from the norm do not necessarily impair credibility of the findings. Rather, they constitute an opportunity for explaining the empirical situation within the wider framework of varied possibilities.

CHAPTER IV

CHAPTER IV

THE MIGRATION FIELD

The background to this study has been presented in the first three opening chapters which consider its frame of reference, review some literature that has an important bearing on it and explain its methodological framework. Thus far we are inclined to appreciate the intricacies of whence, how and why the findings of the study are compiled, findings which constitute the rest of the chapters. The present chapter explores and, subsequently, explains the "migration field" of the Kericho tea estates complex, placing greatest emphasis on its national as well as regional perspectives. Basically, it consists of two main parts: the first one in which both the conceptual framework and the functional bases are explained, and in the second, the spatial context of an indentifiable migration field is discussed.

4.1 CONCEPTUAL FRAMEWORK AND FUNCTIONAL BASES

It was stated in Chapter I (sub-section 1.2.4) that migration process essentially involves two interdependent poles, an origin and a destination. The latter, being the point at which the primary data were collected, is self-explanatory. But the former, derivable from the data, is diffuse hence its exploration in this chapter. In this section, two aspects of this concept are discussed: its definition as well as application in migration analysis on the one hand, and its functional bases in terms of explanatory indices on the other. This, as will be realised, is an important prerequisite in the appreciation of the concept which is likely to be easily misinterpreted.

4.1.1 The Concept and Its Application

In geographical analysis the term "field" tends to have diverse connotations. Perhaps the best known to geographers and others is the "magnetic field"[1]. Simply stated, however, migration field is the area about some destination from which migrants are drawn (Taylor, 1975 : 3). Using the popular thesis of distance decay in spatial interactions including migration, Taylor (1975) endorses the inverse relationship between migration and distance from London's migration field. The picture that emerges exhibits a spatial migration field where interaction with London varies with distances and sizes of other cities. This suggests that a migration field cannot be delimited a priori. Rather, it should emerge naturally from the data once the destination of migrants is known. The problem becomes more complicated if several destinations are being considered; for instance, migration fields may overlap and create difficulties as to which of the destinations exerts the greatest influence. A study by Allen (1972) delimits migration fields of provincial migrants in Canada. Based on ethnic data, the study defines a migration field in both Brown, et al.'s (1970) : 474) version as "... technically the area from which a destination place draws its migrants" and Hagerstrand's (1957) version as "the geographical distribution of migrants as seen from the parish or commune under investigation". Concurring with Lee's (1966 : 54-55) assertion that "migration tends to take place largely within well defined streams" (that) "... are highly specific both in origin and in destination", Allen (1972 : 367) argues that such patterns reflect the process of chain migration in which kinship and friendship contacts play the major role in directing later migrants toward particular destinations. In Kenya where the dominance of a single ethnic group is experienced in the provinces (see Figure 5), Allen's (1972) ethnically

oriented delimitation of migration fields is most instructive. One study so far made in this respect in the country is by Oucho (1980) on the migration field of Kisumu, the third largest urban centre[2]. From the foregoing it is evident that the definition of migration field has thus far been limited to rural-urban migration process. This is attributable to exclusive analysis of migration between the two poles, as has been explained in earlier chapters of the study, and to the fact that even the few isolated rural-rural migration studies have apparently been shy to apply the concept.

The application of "migration field" to rural-urban migration is justified by the nature and orientation of research and studies that are in keeping with existing phases of the "mobility transition hypothesis". Certainly, the concept is applicable in all migration streams of both internal and international concequences. It is by no means interchangeable with "origin", "source area" or "area of departure" which had been defined earlier. However, the latter tend to denote points rather than spatially cohesive areas from which migrants, following specified routes, are drawn. This gives the concept an advantage over the other concepts, especially where migrants are, as will be seen in migration-distance relationships, deemed to originate from administrative units whose area differs, and which are theoretically assumed to assemble prospective migrants at their headquarters whence they migrate to the destination. Migration field by administrative units therefore constitutes the average conditions of respective units. Moreover, it enhances disaggregating migrants at various scales within the hierarchy of a migration field. The tendency for migration to have a snowballing effect and for chain migrants to be clustered in particular areas of the destination gives considerable credence to this concept in migration analysis. Hagerstrand (1957 : 72-80) notes

that in Sweden migration fields tend to remain remarkably stable over time. This suggests that destinations are likely not only to maintain their migration fields, but also to extend them beyond the "traditional" areas. Indeed, being dynamic, migration fields generally reflect continuity much in keeping with dynamic systems with which the process interacts; and their cartographic representation which seems to be static is far from being realistic.

4.1.2 Functional Bases in Origin-Destination Context

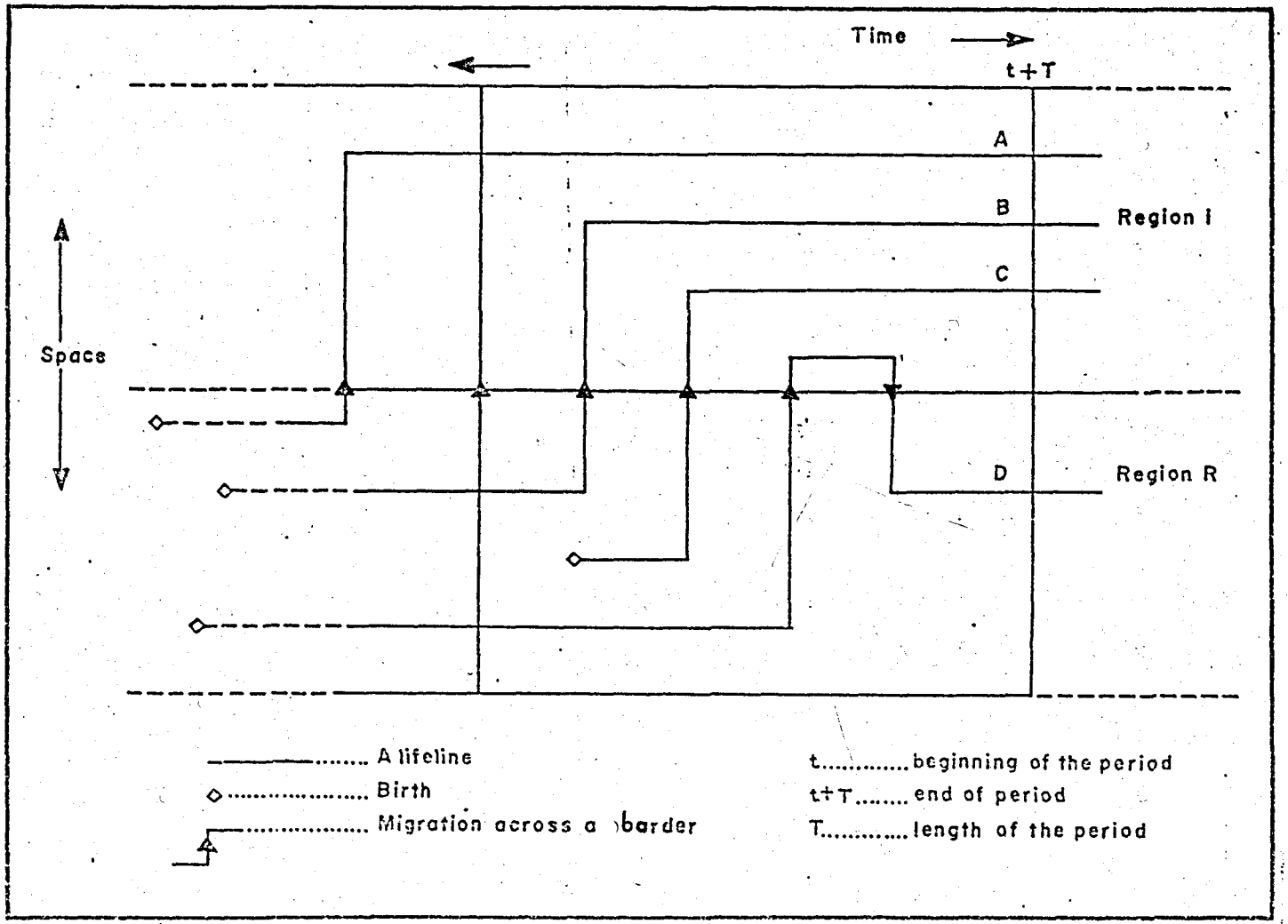
Since migration field is determined at the destination on the basis of migrants' responses, it is relatively problematic to identify. The standard means of doing so from census or survey data is by cross-tabulating "birthplace" and "usual residence" information emanating from migrants themselves. Sometimes, however, out - and in - migration areas are indicated by the sex ratio for administrative units being considered. This section demonstrates the use as well as short-comings of these functional bases of migration field.

Both "birthplace" and "usual residence" are important indices of migration field. While the former relates to where a person was born, or more correctly the assigned permanent residence of parents, the latter denotes the place regarded as home or permanent domicile, which could be identical with that of the parents. Migrants in the study area may belong to two main categories: those born and usually resident elsewhere including the same birthplace - usual residence area and those born in the study area but having usual residence elsewhere as regulated by residence-based obligations. Among the latter may be non-migrants who are born and permanently resident in and around the study area without intending to re-migrate elsewhere. All these are hardly

watertight categories since population in Western Kenya exhibits high mobility characteristics. In most migration studies, usual residence is preferred, simply because statistics on population dynamics are all gathered on a usual residence basis (Wilson and Rees, 1975 : 231). But irrespective of the form of enumeration adopted, usual residence is generally cross-tabulated with birthplace to detect migrants and non-migrants. In Kenya, application of this trend was originated by Ominde (1968a : 182) who sees it as an improvement over birthplace statistics alone which do not indicate the time at which a migration occurred. It has persisted in subsequent analyses where cross-tabulation is emphasised[3]. In African societies where a strong link exists between migrants' residence at any one time with their usual residence or permanent domicile, cross-tabulation of the two sources of statistics has significant advantages. It is on this basis that three migrant categories in the Kericho tea estates complex are identical with those identified by Wilson and Rees' (1975) theoretical construct (Figure 9). The first category comprises lifetime migrants whose current residence, being the tea complex, differs from their birthplace and/or permanent domicile. Second, there is the category of surviving migrants thus classified because of their survival within a specified period, in this case since they migrated to the study area. Thirdly, there are those who migrated into the study area from diverse sources of its migration field during a specified period. In this respect, this study omits the category of former migrants who are currently resident elsewhere where they could be, but were not, interviewed. These include returned migrants who could only be encountered in surveys mounted at the migration source areas.

Although cross-tabulation of birthplace and usual residence statistics reveals a migration process from migration field into the destination, it is but a crude index.

FIGURE . 9 . SPATIO-TEMPORAL SCHEMA OF MIGRATION TYPES . (after Wilson and Rees)



Refinement of performance of different administrative units constituting a migration field may be made from "sex ratio" which has been referred to numerous times in the previous chapters. Given the process of migration selectivity by sex, for instance, a low sex ratio is inimical to the origins of migration, primarily because among other things female preponderance vis-a-vis male deficiency disorganise family structures, societal economy and rural development in general. This will become evident in later chapters of the study. Explained in the context of age-sex population pyramid, sex ratio charts out the burden imposed by in-migration and that alleviated by out-migration.

4.2 SPATIAL CONTEXT OF THE MIGRATION FIELD

Migration field is by no means a theoretical concept. It is a factual, spatially definable and temporally delimitable concept which gives meaning to a migration process. The question we are attempting to answer here is, where do migrants in the Kericho tea estates complex originate from? It must be pointed out that this is not the place to consider why migrants originate from the migration field since that is a step further which forms the basis of the next chapter.

4.2.1 International Source Areas of Migration

Plantation areas, unlike national urban areas, tend to draw migrants from within and outside national boundaries. Examples abound in Western, Southern and even Eastern Africa. In the last region, studies by Southall (1961 : 1967) relating to the whole region, by Dak (1968) in Uganda and by Hirst (1969; 1970) in Tanzania mainland reveal inter-territorial movements of population into commercial farming areas, such as tea, coffee, sugar and sisal growing areas as well as mining zones.

In this study a modest proportion of migrants from Rwanda, Tanzania and Uganda were encountered. Of the total sample of 944, some 1.1 percent are Rwandese; 0.6 percent Tanzanian, exclusively the Kuria from Kenya-Tanzania border, and 0.4 percent Ugandans, most of whom immigrated during the difficult years of the Amin regime in their country. All of them except the Rwandese maintain contact with their permanent domicile to which they expect to return eventually; the Rwandese, having lost close contact with home areas, expect to stay either in the study area or elsewhere in Kenya. The dominance of Rwandese is attributed to the contractual labour recruitment way back soon after World War I. In 1956, for instance; there were 1042 Rwandese male heads of household compared to 332 women and 35 children in Kericho tea estates complex (Kipkorir, 1976 : 56). But their numbers have been dwindling consistently as more nationals migrated voluntarily to the area. Although numerically insignificant, these foreign migrants would have increased appreciably if the international migration was not checked by national labour laws.

4.2.2 National Pattern of the Migration Field.

Of intimate interest to this study and the national sentiment is the national migration field considered in this sub-section at provincial, district and locational levels. Identification of the origins of migrants in the study area is based on heads of household who, as principal migrants, initiated migration, accompanied or joined later by other household members (Table IV.1).

The national migration field covers fifteen districts, eight of which are within Western Kenya area alone, the rest in Rift Valley Province. (Figure 10). Apparently, the migration field of the Kericho tea estates

Table IV.1 - Sex Ratio and the Origins of Principal Migrants in Kericho Tea Estates Complex by Out-Migration Districts

District of Origin	Sex Ratio (M/F x 100) in 1969[a]	Principal Migrants (Percent) N = 396	Out-migration Locations			
			Total Number	Percent of all Locations.	Percent of all Locations in Province.	Percent of all Locations in District.
NYANZA PROVINCE	97	65.1	49	55.1	73.1	-
Kisii	101	21.8	12	13.5	17.9	92.3
Kisumu	104	6.1	5	5.6	7.5	41.7
Siaya	85	4.8	10	11.2	14.9	66.7
South Nyanza	98	32.3	22	24.7	32.8	81.5
WESTERN PROVINCE	93	19.1	14	15.7	38.8	-
Bungoma	97	0.5	1	1.1	2.8	10.0
Busia	90	2.0	2	2.2	5.6	33.3
Kakamega	93	16.5	11	12.4	30.6	55.0
RIFT VALLEY PROVINCE	106	15.8	26	29.2	20.0	-
Baringo	100	2.5	8	9.0	6.8	28.6
Kericho	107	10.4	9	10.1	7.6	90.0
Nandi	105	1.4	4	4.5	3.4	40.0
Narok	98	0.3	1	1.1	0.8	12.5
Samburu	104	0.3	1	1.1	0.8	10.0
Turkana	112	0.3	1	1.1	0.8	25.0
Uasin Gishu	110	0.3	1	1.1	0.8	16.7
West Pokot	96	0.3	1	1.1	0.8	8.3
ALL DISTRICTS	-	100.0	N = 89	100.0	100.0	-

Note: a Computed from the 1969 Kenya Census data.

complex has a westward tilt and does not extend beyond the Central Rift and Associated Highlands save for Kericho district in which the complex itself lies. Nyanza Province constitutes the core of this migration field, followed by Western Province as a poor second. The former accounts for 65 percent of all migrants originating from more than half of all locations contributing them, and slightly less than three-quarters of locations in the province alone. Corresponding proportions for Western Province are 16 percent and one-fourth respectively, and for Rift Valley close to one-third and over one-fifth respectively.

It is not explicitly evident that out-migration areas exhibit low sex ratios and in-migration areas the reverse. That the conventional high sex ratio districts of Kisii and Kericho, for instance contribute respectively the second and third highest proportions of all districts defies the popular assumption as well as the typical finding of most studies. Conversely, the conventional low sex ratio districts such as Siaya, Bungoma, Busia and Narok contribute only negligible proportions of migrants. The notion seems to be fulfilled by two low sex ratio districts, namely, South Nyanza and Kakamega on the one hand, and the rest of high sex ratio districts, on the other, which contribute substantial and very small proportions respectively. Several factors may have been in play to create this anomalous feature. The first is distance which favours short distance migrants from Kericho district, outside the confines of the tea estates complex and the neighbouring Kisii district. South Nyanza'a substantial share may be ascribed to the recruitment policy of the tea companies which, on the basis of cost-benefit system as well as prospective migrants' propensity to migrate, intensified recruitment programmes in either accessible or traditional cheap labour reserviors (personal communication with tea officials). It is probably

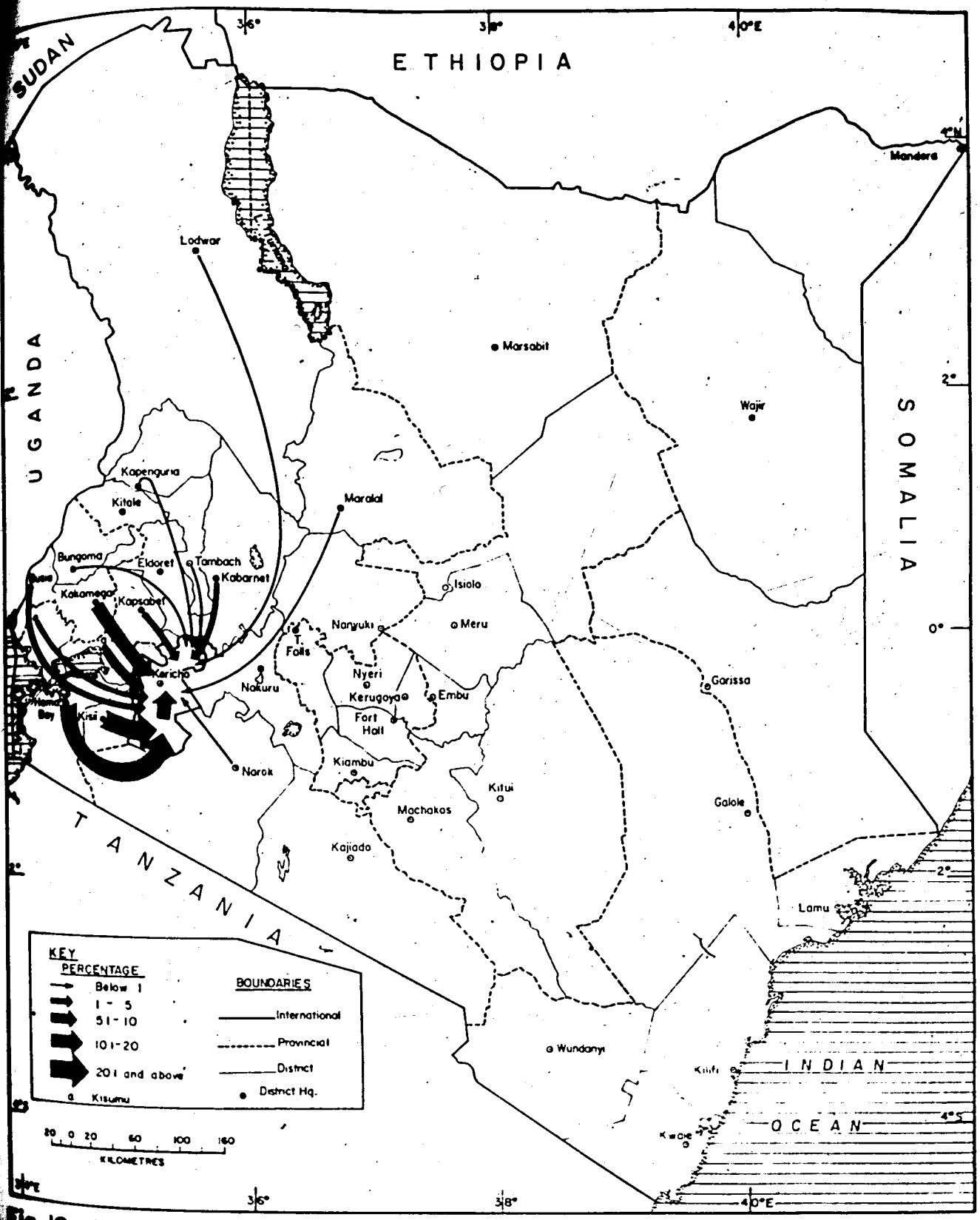


Fig. 10 NATIONAL MIGRATION FIELD OF KERICHO TEA ESTATES COMPLEX.

for this reason that the southern tilt of recruitment becomes apparent, and that the more distant districts which had equal or even greater out-migration potentialities were ignored. Voluntary migrants from other districts are few because the latter lie outside established migration source areas; and migrants moved into the tea estates complex as individuals rather than as the recruits tapped therefrom. These plausible arguments will be affirmed or refuted in chapter V when the determinants of migration are analysed more closely.

Perhaps a more vivid picture will emerge from analysis of the regional migration field in which the share of administrative locations will be considered. Throughout the foregoing analysis of the national migration field, the overwhelming contribution of Western Kenya districts, the regional migration field, has been most evident. This curious feature is examined in the next sub-section.

4.2.3 Regional Migration Field

Western Kenya, as many empirical studies have revealed, is an important out-migration area where migration among other things alleviates the demographic burden that would otherwise constrain development. From the total sample, 641 migrants originated from this regional migration field, making up some 68 per cent of all migrants constituting the sample; some 5.4 percent migrated outside this but from the rest of national migration field; and 2.1 percent were from international sources (Table IV.2). A substantial proportion of migrants failed to indicate their regional origins, males being greater defaulters in this than females.

Structurally, the regional migration field is dominated by South Nyanza District which accounts for more than one-third of all migrants with a higher share

Table IV.2 - Distribution and Sex Ratio of Migrant Population and Migration Rates of the Regional Migration Field.

Regional Migration Field (By District)	Overall Rank in the Field.	Migrant Population[a]							Migrationrates per 1000 Population*		
		Both Sexes		Males		Female		Sex Ratio	"Out"		"In"
		No.	Percent	No.	Percent	No.	Percent		Population at risk ('000)[b]	Rate	All Migrants (N = 641)
Kisii	2	138	21.5	86	23.1	52	19.3	165	408 (15.6)	0.3	215.3
Kisumu	4	59	9.2	24	6.5	35	13.0	69	277 (10.6)	0.2	92.0
Siaya	6	36	5.6	19	5.1	17	6.3	112	243 (9.3)	0.1	56.2
South Nyanza	1	234	36.5	127	34.1	107	39.8	119	458 (17.5)	0.5	365.1
Bungoma	8	3	0.5	2	0.5	1	0.4	200	233 (8.9)	0.0	4.6
Busia	7	11	1.7	8	2.2	3	1.1	267	130 (5.0)	0.1	17.2
Kakamega	3	102	15.9	65	17.5	37	13.8	176	501 (19.1)	0.2	159.1
Kericho	5	58	9.0	41	11.0	17	6.3	241	370 (14.1)	0.2	90.5
WESTERN KENYA		641	99.9	372	100.0	269	100.0	138	2620	0.2	679.0

* Migration rates are computed as "out", denoting out-migration from the districts and "in", relating to in-migration within the study area.

Table IV.2 Continued

Sources: a - Computed from the survey data.

b - Projected 1978 population aged 15-59 years (the working age population) computed by Population Studies and Research Institute, University of Nairobi, "Population profiles of the districts of Kenya", 1974. "Low projection" figures are used here. Percentages shown in brackets.

among females than males. It is followed by Kisii and Kakamega Districts in that order which are considered "population problem" areas as the aggravating population-land ratio suggests. High masculinity of in-migration process is characteristic of all districts excepting Kisumu whose female migrants exceed male ones. Disparate sex ratio of migrant population crudely depicts the ratio of heads of household to their spouses and other related female members. This feature whets the desire to investigate whether or not split or simultaneous migration of couples accounts for it; but this is taken up in Chapter VI.

Migration rates are computed using the following formula:

$$m = \frac{M}{p} \cdot k \qquad (1)$$

where: m is the migration rate for the specified migration interval, M is the number of migrants moving during the interval, p is population of a specified category and k is a constant, here 1,000. For out-migration rate the numerator remains the same but the denominator, p, is the population at risk of migration (15 - 59 years), thereby modifying the formula to:

$$M_{out} = \frac{M}{O_p} K \qquad (2)$$

where out denotes out-migration and Op population at risk in out-migration area.

Similarly, for in-migration rate, M_{in}, the numerator remains the same while the denominator, P_i, becomes the total number of in-migrants reported. The formula therefore changes to:

$$M_{in} = \frac{M}{P_i} K \qquad (3)$$

Using formula (2) above, out-migration rate is negligible in the whole regional migration field and all the component districts. This suggests that the proportion of out-migrants in the Kericho tea estates complex does not explain clearly respective out-migration rates of Western Kenya Districts. A better measure is given by formula (3) above which shows that in-migration rates for the regional migration field strikes 679 per 1,000, 32 percent of which is from South Nyanza District alone. (Figure 11). This "global" picture of the regional migration field however, masks significant locational disparities (Table IV.3).

The regional migration field may be better explained by micro-analysis (both Table IV.3 and Figure 11). Simply stated the position of locations in each of the districts is as shown in an earlier table (Table IV.1) of the reported out-migration locations in Kisii represent about 92.3 percent of all locations in the district; in Kericho 90 percent; those in South Nyanza 81.5 percent; in Siaya 66.7 percent and in Kakamega more than half of all locations. This demonstrates diversification of migration source areas in the regional migration field. Low diversification occurs in Busia where slightly more than one-third and Bungoma where only one-tenth of all locations contribute migrants. The modal percentage range is 1.0 - 9.9 in which all but the last two low-migration districts report migrants, it alone accounting for 61.1 percent of all locations involved in the migration process.

The spatial context of locational source areas in the regional migration field is explicable by the volume of out-migration (Figure 12). This is compatible with the performance of each administrative location in question, based on heads of household who shoulder greater responsibility than and on behalf of their spouses as well as other household members (Table IV.4).

Table IV.3 - Distribution of Migrants' Administrative Locations in the Regional Migration Field.

Out-Migration District	Total No.	Number of Locations by Percentage Range				
		<1.0	1.0 - 9.9	10.0 - 19.9	20.0 - 29.9	30.0+
Kisii	12	-	7	5	-	-
Kisumu	5	-	2	-	2	1
Siaya	10	-	6	3	-	1
South Nyanza	22	3	17	2	-	-
Bungoma	1	-	-	-	-	1
Busia	2	-	-	1	-	1
Kakamega	11	-	6	3	2	-
Kericho	9	-	6	1	2	-

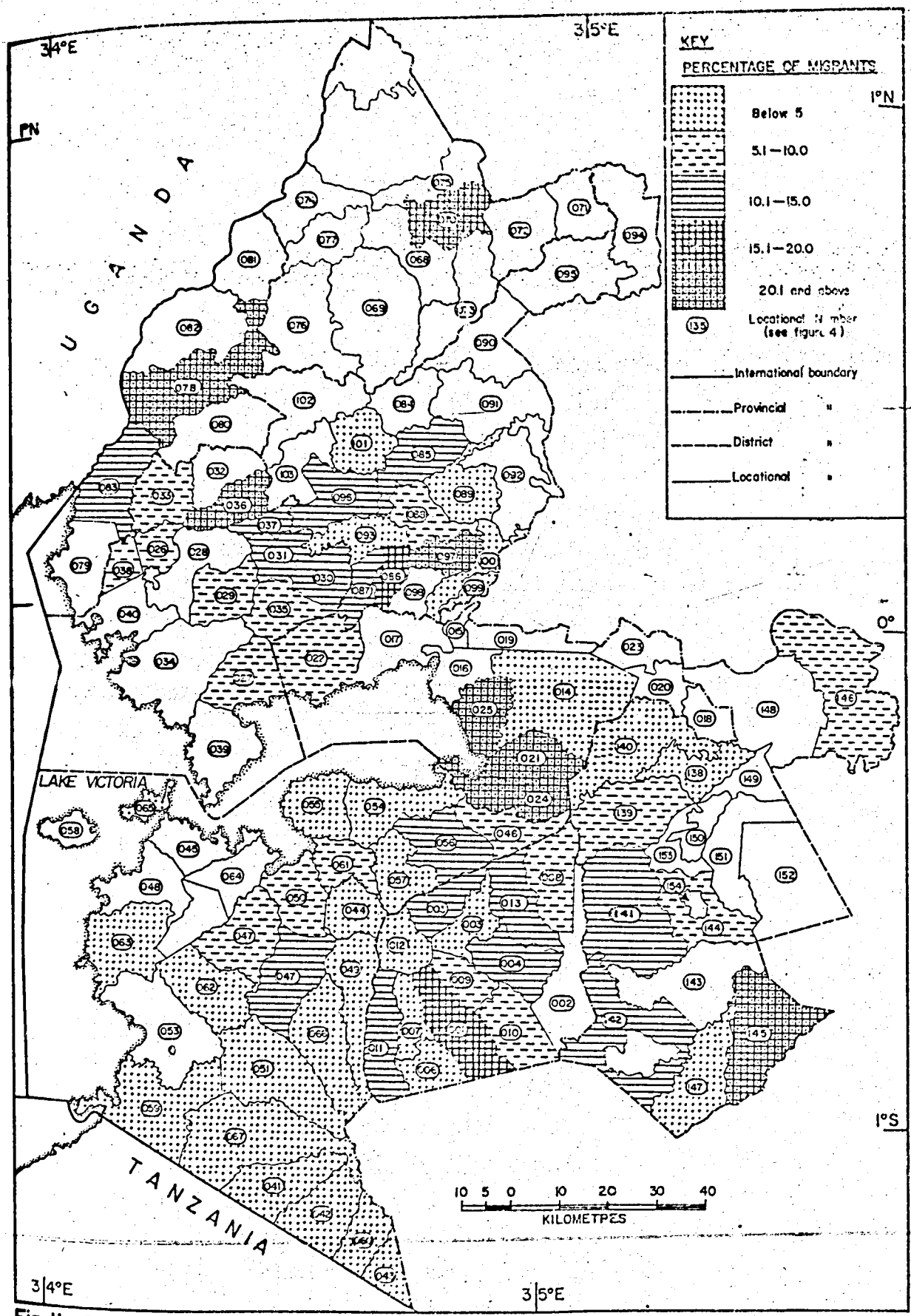


Fig. 11: REGIONAL PATTERN OF MIGRATION FIELD OF KERICHO TEA ESTATES COMPLEX

In Nyanza Province, half of all locational migrants involved in this rural-rural migration process are from South Nyanza District alone. Within the district Kabuoch and East Kaspul locations between them account for more than one-fifth of all heads of household encountered in the sample. Low out-migration occurs in the four Kuria-settled locations, namely Bugumbe, Bukira, Bwiregi and Nyabasi as well as Kanyamkago and the more ecologically hostile and distant locations of Gwasi and Rusinga, of the famous "lowlands". In Kisii District, the fifth, fourth, second and third most densely populated locations, Bassi, Kitutu West, Kitutu East and West Mugirango respectively contribute more than 10 percent each of migrant heads of household; but Wanjare is conspicuous by its very low contribution. Migrants from Kisumu hail mostly from the more problematic part of the district east of Kisumu which experiences the rhythm of excessive flooding and drought in wet and dry seasons respectively. Together with Seme location, these are the locations from which out-migration would be expected, the rest being the better endowed sugar-belt and Kisumu location in which the town is situated. Indeed, the latter rank as in-migration areas through rural-rural migration terminating at the sugarbelt and rural-urban migration stream flowing into Kisumu town. Locations in Siaya District excepting South Ugenya turn out negligible proportions of migrants. A surprising feature here is the dominance of higher parts of the district which are better endowed than the immediate lacustrine locations, exclusively Bondo Division, represented by Asembo location only. Thus Yala Division comprising all the three Gems, Ukwala Division consisting of the Ugenyas and Uholo, and Boro Division made up of Usonga and the Alegos (with Central Alego as exception) are all involved in this migration process. Apparently, while South Nyanza is the core migration field of this rural-rural migration in Western

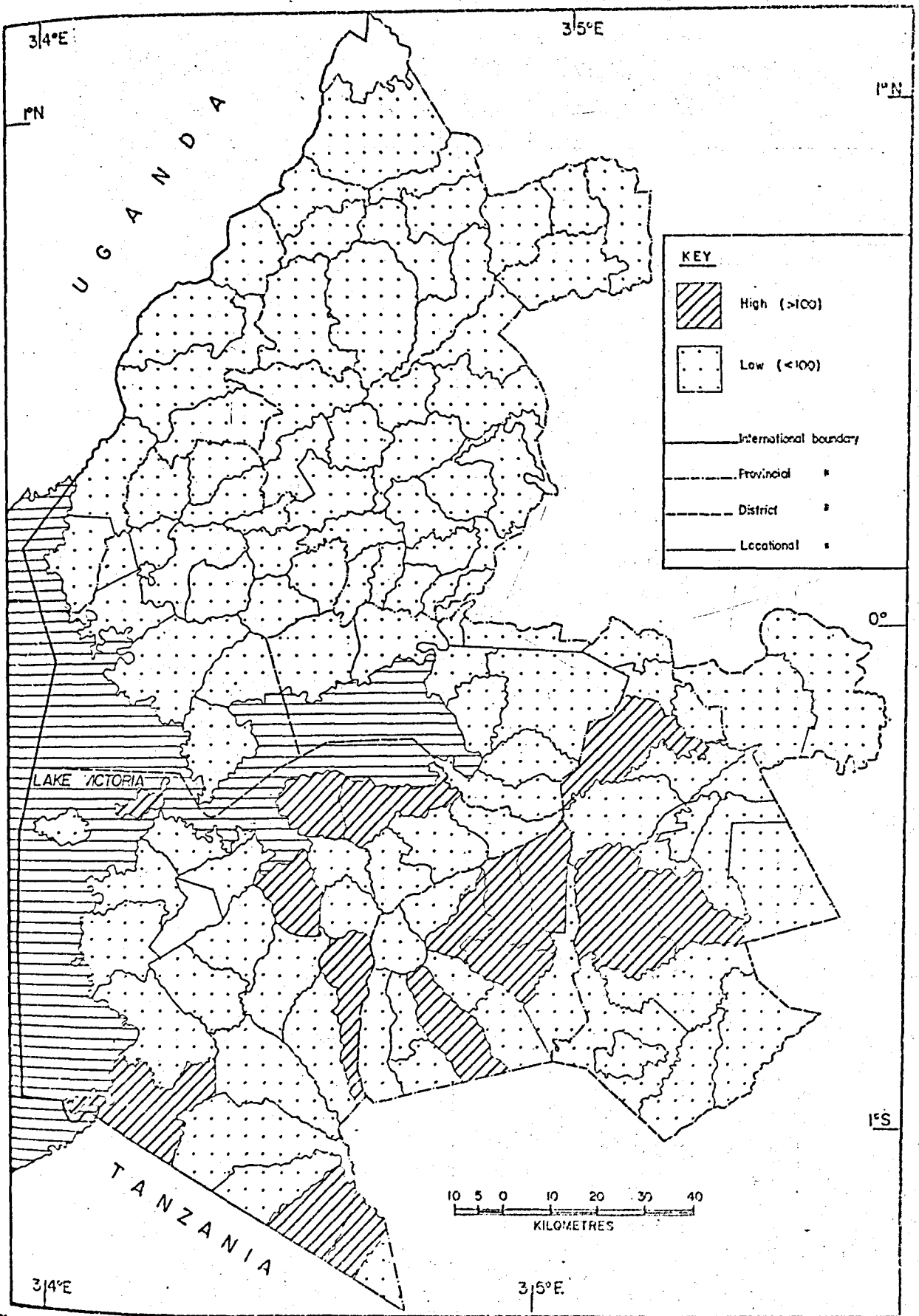


Fig. 12: SEX-RATIO PATTERNS OF THE REGIONAL MIGRATION FIELD OF KERICHO TEA ESTATE COMPLEX

Table IV.4 - Migration Source Areas of Heads of Household by Administrative Locations in the Regional Migration Field.

Out-Migration Administrative Location.	Migrants		
	Number	Percent of	
		District	Province
1. Kisii District	86	100.0	33.6
Bassi	16	18.6	6.2
Kitutu Central	3	3.5	1.2
Kitutu East	9	10.5	3.5
Kitutu West	12	13.9	4.7
Majoge Chache	3	3.5	1.2
Majoge Borabu	4	4.6	1.6
North Mugirango	8	9.3	3.1
Nyaribari Chache	7	8.1	2.7
Nyaribari Masaba	5	5.8	2.0
South Mugirango	9	10.5	3.5
Wanjare	1	1.2	0.4
West Mugirango	9	10.5	3.5
2. Kisumu District	24	99.9	9.4
East Kano	1	4.2	0.4
North Nyakach	5	20.8	2.0
Seme	2	8.3	0.8
South Nyakach	11	45.8	4.3
West Kano	5	20.8	2.0
3. Siaya District	19	100.1	7.4
Alego West	1	5.3	0.4
Asembo	1	5.3	0.4
East Alego	1	5.3	0.4
East Gem	2	10.5	0.8
North Gem	2	10.5	0.8

Table IV.4 Cont.

North Ugenya	1	5.3	0.4
South Gem	1	5.3	0.4
South Ugenya	7	36.8	2.7
Uholo	2	10.5	0.8
Usonga	1	5.3	0.4
4. South Nyanza District	127	100.0	49.6
Bugumbe	3	2.4	1.2
Bukira	4	3.1	1.6
Bwiregi	2	1.6	0.8
Gem	5	3.9	2.0
Kabondo	9	7.1	3.5
Kabuoch	13	10.2	5.1
Kamagambo	5	3.9	2.0
Kanyada	11	8.7	4.3
Kanyamkago	1	0.8	0.4
Kanyamua	8	6.3	3.1
East Karachuonyo	6	4.7	2.3
West Karachuonyo	5	3.9	2.0
East Kasipul	16	12.6	6.2
West Kasipul	6	4.7	2.3
Muhuru Kadem	4	3.1	1.6
Nyabasi	3	2.4	1.2
North Nyokal	11	8.7	4.3
West Nyokal	4	3.1	1.6
Gwasi	1	0.8	0.4
Rusinga	1	0.8	0.4
Sakwa	4	3.1	1.6
Suna	5	3.9	2.0
5. Bungoma District	2	100.0	2.7
Kimilili	2	100.0	2.7
6. Busia District	8	100.0	10.6
Bukhayo	7	87.5	9.3
Samia	1	12.5	1.3

Table IV.4 Cont.

7. Kakamega District	65	100.0	86.7
Butsotso	8	12.3	10.7
East Bunyore	13	20.0	17.3
West Bunyore	9	13.8	12.0
Idakho	5	7.7	6.7
Isukha	2	3.1	2.7
Kisa	3	4.6	4.0
Marama	7	10.8	9.3
North Maragoli	14	21.5	18.7
Nyang'ori	1	1.5	1.3
Tiriki	2	3.1	2.7
Wanga Mukulu	1	1.5	1.3
8. Kericho District	41	100.0	66.1
Belgut B	3	7.3	4.8
Belgut C	1	2.4	1.6
Belgut A	1	2.4	1.6
Buret	12	29.3	19.4
Chepalungu	6	14.6	9.8
Konoin	3	7.3	4.8
Longisa	9	21.9	14.5
Londiani	4	9.8	6.4
Sigor	2	4.9	3.2

Kenya, Siaya District has precedence over all the regional districts in the principal rural-urban migration destination, Kisumu town (Oucho, 1974 : 128). This contrast seems to corroborate Hagerstrand's (1957 : 72-80) assertion that, once established, migration fields tend to remain stable enhancing continuity in a migration process. It is tempting to argue that each of the Western Kenya Districts, having developed respective destinations, tends to continue sending out increasing bands of migrants to those rather than newly emergent destinations.

In Western Province, Bungoma and Busia Districts are relatively "dry" migration source areas. But a number of locations in Kakamega District contribute migrants, all of them being led by the densely settled North Maragoli followed by the neighbouring population pressure areas of the two Bunyores; and trailed by Nyangori and Wanga Mukulu locations. The chief source areas are notorious out-migration points in Kakamega District even within the national framework.

Locations in Kericho District exhibit two contrasting features. On the one hand, insignificant out-migration is experienced in the Belguts, Konoin and Sigor and, on the other, substantial contribution by Buret, Longisa and Chepalungu. In spite of their proximity to the Kericho tea estates complex, locations in the district have been far from being favourable source areas of migration.

In concluding this chapter some salient points may be reiterated before being discussed more closely in Chapter V. They all relate to probable determinants of out-migration from the migration field already elucidated. The first observation is that migration seems to have mixed relationship with distance, given that some of the farthest locations produce more migrants than those nearest

to the tea estates complex. Another is that migration into the study area seems to have some connection with recruitment systems as well as prevalent socio-economic climates which fluctuate over time. Furthermore, there is the tendency for migration to be influenced substantially by diverse environmental constraints, especially population pressure as reflected by population densities, climatically imposed problems such as floods and drought and a host of socio-economic deficiencies at the source areas. The array of issues could be multiplied, but it is made inconclusive at this juncture to avoid pre-empting critical analysis made of the issues in the next chapter. Permanent domicile is an index of migration that lends itself to meaningful detection of chain migration into the destination. It is perhaps because of this that migrants cannot be expected to originate from the whole spatial system of a migration field. Rather, pockets of them produce migrants in flows or trickles depending upon causal factors as well as possibilities for absorption among other variables at the appointed destination. In order to determine the correlation between population size and the number of migrants from the eight districts in the regional migration field, both product moment, r, and spearman's rank correlation co-efficients, rs, are computed. Both correlation co-efficients suggest very strong positive relationship between population size and out-migration rates: product moment correlation co-efficient is +0.78 compared with rank correlation co-efficient of +0.88. Thus the general tendency is for districts with larger populations to contribute larger numbers of migrants than their smaller counterparts; and the trend is exemplified by the three largest districts, namely Kakamega, South Nyanza and Kisii. Ascendancy of South Nyanza over the two districts which have larger populations, however, is attributable to other factors relating to its relative predominance as the source area for migrants in the tea estates complex. Apparently, while Kakamega

is affected by out-migration streams toward Trans Nzoia and Uasin Gishu Districts, where population from the district have acquired large farms, Kisii has generally been a sedentary population coming into the orbit of internal migration only recently. Indeed, out-migration from Kisii District into the Kericho tea estates complex tends to be an anomalous feature investigated from other dimensions in the next chapter. As rapidly increasing population threatens the carrying capacity of Western Kenya Districts, out-migration streams are likely to expand, terminating not only in the tea estates complex but also elsewhere in the country. This fact in itself also threatens the absorption capacity of the Kericho tea estates complex to which rural-rural migration streams have often gravitated. Perhaps expansion of potential destinations of this migration process in Western Kenya may alter this most probable situation.

NOTES:

1. For geographers the magnetic pole designates either two or variable points on the earth's surface, close to but not coinciding with the geographic poles, where the earth's magnetic field is most intense. From a given destination, the area from which a migration process draws the bulk of its migrants is its "migration field".

2. This study reveals the regional importance of Kisumu in Western Kenya where the migration field is limited to the area. For more details see Oucho (1980).

3. See, for example, Republic of Kenya (1977 : 69-74); Rempel (1977); and Sly (1978).

CHAPTER V

CHAPTER V

DETERMINANTS OF THE MIGRATION PROCESS

The crucial issue in migration analysis relates to the determinants of the migration process which, essentially, involves identification of variables that influence migration decisions taken by migrants. Given that a number of disciplines are involved in migration, the determinants generally considered may be as diverse as migrants themselves or as variable as conditions in various parts of the migration field and opportunities known or perceived to exist at the destination. Indeed, the matrix of determinants of migration varies in size and structure, depending, inter alia, on the migration process being investigated, the disciplinary bias of analysis and the method used in disaggregating variables involved in order to depict either their individual or corporate influence. To substantiate, spatial, economic or sociological analyses of the determinants of migration ultimately produce models that are far from complete but which, in their own right, present varied perspectives of the factors involved.

Determinants of migration may be either deterministic or probabilistic[1], reflecting the conventional stance of a given discipline(s). But this depends on the primary source of data which are likely to give different results as perceived by a researcher on the one hand, or reported by actual and potential migrants on the other. In an attempt to experiment with a wide option of techniques which can most effectively explain the determinants of migration, the present chapter analyses two broad concerns. First, from both the migrants' and the reseacher's standpoints, the matrix of the major determinants is examined. In a triadic dimension, they include geo-ecological explanations, economic considerations and non-economic

determinants. Second, against the background of different migration models, whose merits and demerits are analysed, the second part of the chapter attempts to construct an empirical model that best explains the determinants of rural-rural migration. Reconciliation of migrants' perceptions that either consciously or unconsciously enter into the decision to migrate, or that determine the propensity to migrate and a researcher's supposedly objective consideration of determinants of migration, is an attempt to deviate from the trodden path of analysing the determinants "without specific reference to the decision-making process at the individual or family level" (Huntington, 1974 : 77). More often than not, migration from area i to area j is a situation in which the phenomenon is treated as a dependent variable, dependent upon other independent variables. It is the latter that concerns us in this chapter, and by articulating their interactions with migration, construction of a posteriori rural-rural migration model has been realised.

5.1 THE MATRIX OF DETERMINANTS OF MIGRATION

The first part of this chapter is as deterministic as the second is probabilistic. It presents those factors that, as reported by migrants and considered by the researcher, are purported to have determined migration to the Kericho tea estates complex. Three categories of these determinants are of environmental, economic and non-economic or psycho-social consequences. No attempt is made in the present part of this chapter to have rigorous analysis of the determinants of migration thus identified as this is done in the second part which applies probabilistic techniques. In concurrence with Rothenberg (1977 : 185), notwithstanding his economic stance in analysing the determinants of migration, there exists a "calculus of rational migration choice involving various options: continuous perception of remaining a resident in a given

region or moving to another; perceiving that each region including the current place of residence possesses a set of opportunities and contraints that enter into one's decision to migrate, and on deciding to move a migrant expects to incur a set of costs". These options constitute perceived differential utility of supposed origins and destinations of a migration process; and the greater their differences the more probable is migration.

5.1.1 Geo-Ecological Explanations

The last statement in the foregoing introductory remarks assumes an environment in which economic forces interact to influence migration. Analysis of this is deferred to sub-section 5.1.2. In the present sub-section, attention is drawn to geo-ecological factors that determine migration between the migration field discussed in the previous chapter and the destination. It must be emphasised however, that geo-ecological explanations are but one set of determinants interacting with a host of other factors to generate migration.

In several geographical works already cited, an impressive set of geo-ecological factors influencing migration in Western Kenya have been identified. For instance, Ominde has consistently related environmental constraints in the region to out-migration and environmental endowments to in-migration within both regional and national settings. Geo-ecological factors - such as rainfall whose amount and reliability influence agricultural activity thereby separating well-from ill-endowed ecological zones, population distribution and density which result from this climatic factor thereby threatening the land-carrying capacity and varied potentialities of ecological zones arranged accordingly by ecological factors - constitute what determinists prefer to call the "push-pull" mechanism of migration[2]. The push of geo-ecological factors results

in out-migration outside Western Kenya but some pulling factors confine movements within the region. But a more intimate analysis of geo-ecological factors in intra-regional migration is by Ayiemba (1974) which reveals the effects of floods, drought and other constraints within a broader framework of environmental perception[3]. The foundation of geo-ecological explanations of population movements in or from Western Kenya seems to have been laid by Fearn's (1965, 1958, 1961) agrarian cum socio-economic studies. In spite of their important contribution to migration analysis, these works omit distance which is a very significant variable. Besides, they loosely interpret causal interrelations between migration, and identify geo-ecological variables. An effort to this end was made by Oucho (1980 : 12-20) in a rural-urban migration study which confirms the inverse relationship between migration and distance. In this study, two main geo-ecological factors are derived from the data: the distance factor and environmental perception of migrants.

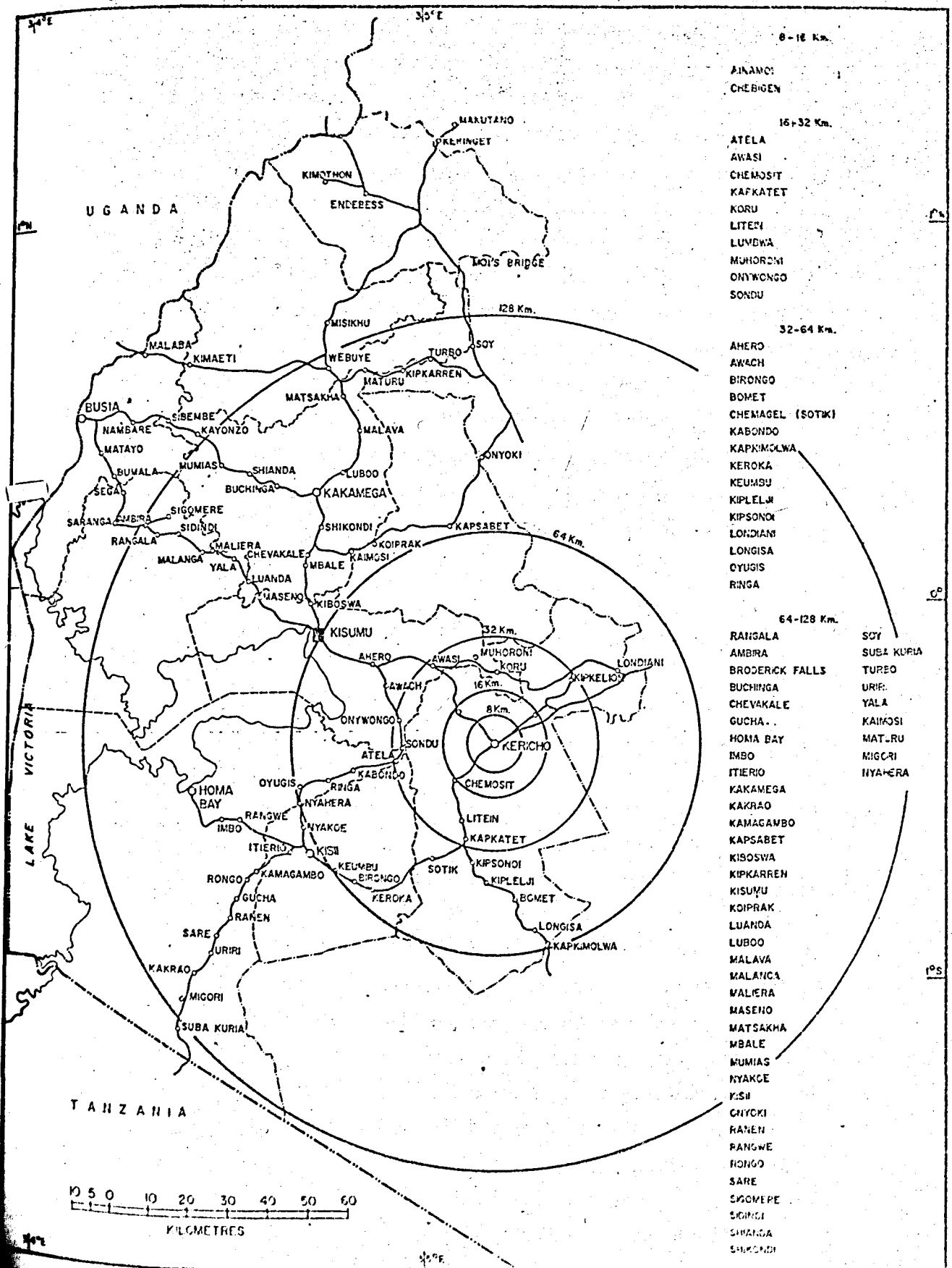
(i) Distance

Attempts to determine distance from migrants' responses ran into great difficulties. This is primarily because most migrants were unable to estimate distances between their origins and the tea estates/factories at which they were interviewed. Moreover, a substantial majority mixed miles (an abandoned but longstanding measure of distance to which most people are used) with kilometres (the current but less conceptualised measure). Even the alternative they were given to report their home schools, markets or other notable institutions, from which distance could be measured, led into problems; a substantial proportion of migrants were in fact dumb on this question. That only a small proportion of respondents gave specific, albeit incorrect, distances substantiates the foregoing argument. An independent measure of distance was thus formulated in two ways. One,

by taking distances between Kericho and district headquarters from which migrations are purported to have occurred. Two, by using the map of concentric distance-rings which give distance bands, regarding Kericho as the centre of these rings (Figure (13). In both cases these are geographical distances representing road and often devious distances and the shortest distances to Kericho tea estates complex respectively. When the results of the two were compared to see which one works better with the data, it was found that road distances linking the district population centres with Kericho has advantages over the concentric rings method.

Distances used in the study are those between the major population centres (district headquarters) of Western Kenya Districts (Table V.1.) Migration flows are therefore estimated between the eight population centres from survey data. But only seven columns related to Kericho are empirically revelant in the present study because they show distances between seven population centres and Kericho which is the population centre of Kericho District whose migrants are shared out between the town on the one hand, and the tea estates complex on the other. Inclusion of Kericho in this context of migration - distance analysis distorts the "population centre" interpretation of distance as applied here, because there is no substantial distance between the two entities; but by convention it has to be included in the "gravity model" interpretation (Table V.7). While Busia District lies farthest, Kisumu is nearest to Kericho (Table V.1.). The irregular migration-distance curve gives the impression that the relationship between migration and distance is inconsistent with the results realised by a number of studies (See Figure 15). However, computation of the product moment correlation of the two variables, regarding migration as the dependent variable and distance as the independent variable, gives a correlation

FIG.13 RADIAL DISTANCES FROM KERICHO TOWN AND MAIN ROAD LINKS IN WESTERN KENYA.



coefficient of - .369. Although this result confirms that migration to the Kericho tea estates complex is inversely related with distance, the relationship is much weaker than most studies have revealed. Irregularity of the migration distance curve seems to be influenced, inter alia, by the dominant South-Nyanza migration stream which, compared with the Kakamega stream for instance, originates farther than the latter. In that stream however, 13 percent of migrants come from the much nearer East Kasipul location. The sheer size of South Nyanza District defies the application of "population centre" measure of distance in determining migration-distance relationship. This curious feature was accordingly probed by the researcher. It revealed a plausible explanation of the distortion, namely, that recruitment of cheap labour for the tea industry was intensified in South Nyanza relative to other districts in the defunct Nyanza Province thereby procuring more migrants than in the latter[4].

In a number of migration studies, mainly rural-urban, the inverse relationship between migration and distance is a persistent feature[5]. Analysing the determinants of labour mobility in India, Greenwood regards distance as a proxy involving either money or non-money or both costs which are deterrents of migration (Greenwood, 1971 : 141) and computes a simple correlation coefficient of - .609 (Greenwood, 1971 : 149). This correlation coefficient nearly doubles that computed in the present study, presumably because, unlike the latter, it relates to rural-urban migration in a country where urban-rural differentials, coupled with diverse socio-cultural conditions, exert considerable influence and generate noticeable disparities. Within Western Kenya, disparities between out-and in-migration rural areas are of such lower magnitude that they are unlikely to impose great impact on migration-distance relationship. Olsson (1965) also computes a much higher correlation coefficient of - .763 between migration distance and population in an

Table V.1 - Distance between major Population Centres of Western Kenya Districts

(Km.)

District Headquarters	1 Kisii	2 Kisumu	3 Siaya	4 Homa Bay	5 Bungoma	6 Busia	7 Kakamega	8 Kericho
Kisii	-							
Kisumu	113	-						
Siaya	183	70	-					
Homa Bay	53	166	236	-				
Bungoma	240	127	125	295	-			
Busia	258	138	63	311	62	-		
Kakamega	163	53	88	219	74	95	-	
Kericho	104	80	150	157	207	218	133	-

Source: Survey of Kenya, Route Map of Kenya SK 81, n.d.

out-migration area in Sweden. The vast difference between these correlation coefficients and that computed in this study raises some curiosity, necessitating continued work in migration-distance relationship in rural-rural migration. Calibrated and other transformed forms of distance are discussed in sub-section 5.2.1 in which migration - distance relationship will be examined further.

Generally, the inverse relationship between migration and distance is confirmed in this study. But the smoothness of the curve is distorted by a number of factors of both historical and spatial consequences which influence the out-migration performance of respective Western Kenya Districts.

The other technique involving concentric distance lines, marking distance bands, is in keeping with the recruitment systems of the tea companies. However, it found no backing from the data since only a small proportion of current migrants, unlike their earlier counterparts, was recruited by the process of bus route (Figure 13).

(ii) Environmental Factors

Another dimension of geo-ecological explanations relates to migrants' environmental perception and closely related issues. On the assumption that migrants left their home areas for Kericho with valid reasons for changing their occupation in the process, both "reasons for leaving home area" and "reasons for changing occupation" were investigated. These constitute the determinants of migration in migrants' view and the framework for analysing them from the researcher's viewpoint. However, the former are more relevant in the present discussion, especially for understanding the influence of the so called "push" factors that have a geo-ecological dimension. Specific geo-ecological variables which come into play in the out-migration process may now be considered (Table V.2). All reasons considered, the "other"

category accounts for 36.0 percent of reasons for migrants being pushed out of their home areas. But this amorphous category apart, population pressure is reported as the principal explicit reason for out-migration, followed by unreliable crop yields, a factor closely related with other environmental hazards, specifically floods and drought, both of which cause famine. Spearman's rank correlation between poor crop yields and famine gives a correlation coefficient of 0.839 which suggests a very strong positive correlation between the two phenomena. Both floods and witchcraft, however, are unimportant reasons since the former is confined to the immediate lacustrine lowlands and the latter is unlikely to be so stated by respondents.

A vivid picture emerges from the reasons given among various tribal groups. As regards population pressure, the Gusii are the most affected, evidence of this being high population density in Kisii District which they inhabit (Figure 4). That more than half the Kikuyu responding to the question report the same reason also underscores its importance in their out-migration. Environmental problems such as floods, drought, unreliable crop yields and famine in that order, to mention specific reasons, affect the Luo more than any other tribal group. Indeed, Allan (1967) recognises a sharp contrast between Nilotic Luo who inhabit the lacustrine area with some of the largest farmlands but poorer and drier ecology and the Luhya and other Bantu peoples occupying the more fertile areas in Western Kenya with rapidly diminishing sizes. Although crude population density in areas settled by the Luo is lower than that settled by the Bantu peoples, the former is less endowed ecologically. Climatically, the area inhabited by the Luo suffers from a rhythm of two extremes: heavy rainfall, causing floods, during March-May thereby inhibiting cultivation of crops; and drought for the rest of the year, with the exception of the short rains in August/September, resulting in precarious subsistence. Since this point has already been

Table V.2 - Reasons for Migrants leaving their Home Areas by Tribal Group

(Percentages in brackets)

Reasons	Tribal Group							
	Luo	Luhya	Gusii	Kuria	Kalenjin	Kikuyu	Other	Total
Population Pressure	46	17	50	7	30	3	11	164
	(28.8)	(10.4)	(30.5)	(4.3)	(18.3)	(1.8)	(6.7)	(100.0)
Unreliable Crop yields	47	18	19	5	24	0	7	120
	(39.2)	(15.0)	(15.8)	(4.2)	(20.0)	(0.0)	(5.8)	(100.0)
Floods	11	2	1	1	0	0	0	15
	(73.3)	(13.3)	(6.7)	(6.7)	(0.0)	(0.0)	(0.0)	(100.0)
Drought	12	4	1	2	6	0	3	28
	(42.9)	(14.3)	(3.6)	(7.1)	(21.4)	(0.0)	(10.7)	(100.0)
Famine	16	8	5	2	11	0	6	48
	(33.3)	(16.7)	(10.4)	(4.2)	(22.9)	(0.0)	(12.5)	(100.0)
witchcraft	5	3	5	0	1	0	1	15
	(33.3)	(20.0)	(33.3)	(0.0)	(6.7)	(0.0)	(6.7)	(100.0)
Other	97	32	24	2	49	2	14	220
	(44.1)	(14.5)	(10.9)	(0.9)	(22.3)	(0.9)	(6.4)	(100.0)

discussed in section 1.1 of Chapter 1, it is unnecessary to belabour it here. Western Kenya apparently experiences a "vicious circle of push factors of migration" (Figure 14).

It is asserted here that economic prosperity of Western Kenya is affected interchangeably by persistent floods and drought which cause unreliable crop yields. This results in precarious subsistence which arouses environmental perception in the light of these constraints, generating out-migration which, in turn, constrains development, further perpetuating stagnation of the economy.

Thus the relationship between Western Kenya Districts and the Kericho tea estates complex is that of "push" from the former and "pull" to the latter. Given that the migrants are involved in some form of subsistence economy prior to moving to Kericho, they changed their occupation in the process of settling in the tea estates complex. There are principal reasons for changing occupation or "pull" factors (Table V.3). Diverse circumstances, by far the most dominant reason for occupational change, account for close to 38 percent of all the reasons stated. But the most dominant among the more specific reasons is job opportunities which, understandably, is closely followed by the need for better income. Between the two variables, the computed spearman's rank correlation coefficient is 0.643, suggesting a strong positive relationship. The overriding influence of income may be substantiated presently. Of the 539 respondents to this item, more than half felt that their income, after migration, was more favourable than before migration, explaining why they must have migrated. This factor is later included in our model. Three tribal groups, the Luo, the Gusii and the Kalenjin in that order, are the most affected by the desire for better income. But the Kalenjin also prefer their current work to that in their home areas. Finally, "other" reasons feature prominently among the Kalenjin followed by the Luhya.

Fig.14. VICIOUS CIRCLE OF 'PUSH' FACTORS OF MIGRATION.

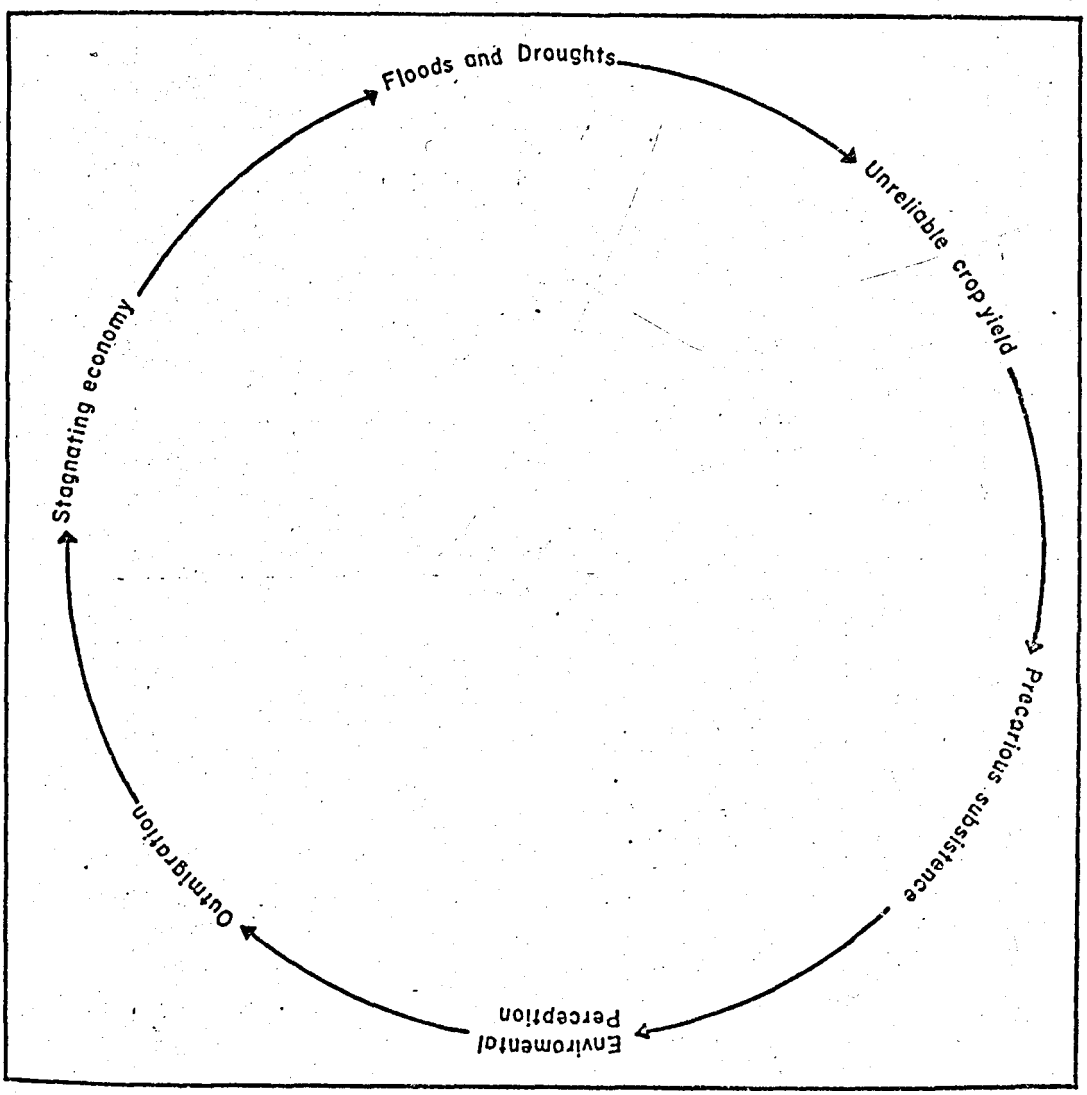


Table V.3 - Distribution of Reasons for Migrants Changing occupation by Tribal Group.

(Percentages in Brackets).

Reasons	Tribal Group							
	Luo	Luhya	Gusii	Kuria	Kelenjin	Kikuyu	Other	Total
Job Opportunities	57 (41.6)	25 (18.2)	12 (8.8)	8 (5.8)	20 (14.6)	0 (0.0)	15 (10.9	137 (99.9)
Better Income	39 (32.8)	10 (8.4)	32 (26.9)	0 (0.0)	24 (20.2)	3 (2.5)	11 (9.2)	119 (100.0)
Easier Work	5 (38.5)	0 (0.0)	4 (30.8)	0 (0.0)	3 (23.1)	0 (0.0)	1 (7.7)	13 (100.0)
Preference of present work	8 (25.8)	3 (9.7)	6 (19.4)	2 (6.4)	10 (32.3)	0 (0.0	2 (6.4)	31 (100.0)
Forced by circumstances	75 (37.3)	35 (17.4)	34 (16.9)	6 (3.0)	38 (18.9)	1 (0.5)	12 (6.0)	201 (100.0)
Other	4 (11.8)	8 (23.5)	7 (20.6)	0 (0.0)	10 (29.4)	0 (0.0)	5 (14.7)	34 (100.0)

The reasons specified above are largely economic determinants of the rural-rural migration process (Table V.3).

5.1.2 Economic Considerations

Almost exclusively the consensus reached in migration analysis is that economic factors are the main causes of migration. This thread of consensus attributed to the "Depression" economists (such as Hicks, who holds that" ... differences in net economic advantages, chiefly differences in wages, are the main causes of migration" (Hicks, 1932 : 76)) runs across the whole spectrum of economic literature on migration[6]. It is in this regard that urban-rural income differentials have become crucial in the analysis of determinants of migration, often marking the significance of non-economic factors.

This last statement cannot go unqualified. In the first place, economic factors generally constitute the 'push-pull" model of migration as the previous sub-section explains. Alonso (1977) recognises a general model of inter-regional gross migration which includes basically the push-pull and gravity models, articulating either origin or destination characteristics. But this argument is taken up for closer analysis in section 5.2.

One of the crudest but moststraightforward economic indices in this respect is income (Table V.4). Income is concentrated in the range of shillings (KShs.) 200-299: while the mode is within that range, the mean income is KShs. 228/90. This explains the category of unskilled labour force on whom the study concentrates; and it may be seen at a glance that from KShs. 300/= onwards income tapers off consistently. The modal income class alone accounts for 44.1 percent of all income levels. In order to appreciate the relationship between income and other closely connected variables, correlation coefficients are accordingly computed. Between the two tea companies there is a strong

positive correlation (using Spearman's rank correlation), the computed correlation coefficient being 0.714. Indeed, this is expected since the wages paid by the two tea companies are determined by the Kenya Tea Growers' Association, though tea pickers are paid according to the weight of tea picked rather than on fixed monthly wages.

Table V.4 - Distribution of Income by Migrants' Wages in the Kericho Tea Estates Complex.

Income (KShs. permonth)	(Rank)	Respondents		
		Number	Percent	Cumulative Percent
Not stated	(6)	12	2.1	2.1
0-99	(4)	37	6.3	8.4
100-199	(2)	186	31.8	40.2
200-299*	(1)	258	44.1	84.3
300-399	(3)	64	10.9	95.2
400-499	(5)	16	2.7	97.9
500-599	(7)	6	1.0	98.9
600-699	(8)	3	0.5	99.4
700-799	(9)	2	0.3	99.7
800-899	(10)	1	0.2	99.9
Total		585	99.9	
Mean (R) = 228.90				

*Modal class.

5.1.3 Non-economic Determinants

Students of migration are now unanimously agreed that, while economic factors are most crucial in migration, a number of intangible non-economic factors also call the tune. For instance, in Taiwan, Speare (1971 : 126) cautions that personal and other factors, although not generally

included in most migration models, may be more important to older migrants (see also our model in 5.2.3). Evidence is available from multifarious variables, here limited to three: other reasons for changing occupation, given by migrants; the presense of prerequisites for settling at the destination; and job prospects, anticipated or revealed by earlier migrants. (See our model in subsection 5.2.3).

Responses of those reporting other reasons for changing occupation are shown in percentage, in brackets: better status (40.0), closeness to home (20.0), more secure (20.0), other (11.1) and more time for children (8.9). Since all these are factors enabling migrants to have the cost - benefit perception of migration, they demonstrate the significance of personal as well as psycho-social issues.

The question of settling in the new abode, the in-migration area, has farreaching repercussions on the process of migration. Being a relatively important sociological issue, it is here considered in the context of tribal groups in the tea estates complex (Table V.5). Of the 564 responding to it, 70.4 percent alone stayed with relative/friend and 26.2 percent were given own house at the time of in-migration; only 1.2 percent rented a house elsewhere. It would appear that the presence of relatives/friends acts as a major incentive for not only in-migration but also chain migration which generally operates on social or tribal network.

Finally, the medium for learning of job prospects is a further test case in non-economic determinants of migration. Of the five media, namely, relative/friend, radio, newspapers, recruitment by estate staff and other, the first is by far the most important, followed by the last item. Some 59.3 percent learnt of job prospects from relatives/friends, which explains why the latter are most involved in new migrants' initial settling at the time of

Table V.5 - Method of Migrants' Settling in Kericho Tea Estates Complex by Tribal Group

(Percentage in Brackets).

Method of Settling	Tribal Group							
	Luo	Luhya	Gusii	Kuria	Kalenjin	Kikuyu	Other	Total
Stayed with relative/friend	157 (31.5)	61 (15.4)	63 (15.9)	13 (3.3)	73 (18.4)	1 (0.2)	29 (7.3)	397 (100.0)
Given own house	52 (35.1)	19 (12.8)	32 (21.6)	4 (2.7)	29 (19.6)	2 (1.4)	10 (6.8)	148 (100.0)
Rented a house elsewhere	5 (71.4)	1 (14.3)	0 (0.0)	0 (0.0)	1 (14.3)	0 (0.0)	0 (0.0)	7 (100.0)
Other	0 (0.0)	5 (41.7)	1 (8.3)	0 (0.0)	4 (33.3)	1 (8.3)	1 (8.3)	12 (100.0)

in-migration. In consistency with the low socio-economic status and educational level of the migrants, both radio (1.2 percent) and newspapers (0.9 percent) are the most unimportant media. Recruitment by estate staff, an important medium in the forties, fifties and early sixties, but fast losing grip since the seventies, accounts for only 7.6 percent of all the media. Perhaps the importance of relatives/friends in this regard is attributable to the fact that, among various media, interpersonal communication is the cheapest and least sophisticated method (Schwartz, 1973 : 1160). The web of incentives that accompany the presence of relatives/friends includes the fact that they can be a source of psychological satisfaction; of economic support during the job-search process as well as initial settling on securing a job; and of reliable information about employment opportunities. This explains why it is later included in our model in (sub-section 5.2.3).

Although it is now agreed that the determinants of migration include the more tangible economic forces as well as the less tangible non-economic ones, delineation of the boundary between their singular or combined impact has been rather problematic. Perhaps for rural-rural migration the impact of the two sets of determinants may be best understood by examining them afresh rather than gauging them against the stereotyped findings of rural-urban migration studies. In the light of the foregoing, however, we accept the seventh hypothesis, namely that environmental constraints in the source areas "push" migrants to the tea estates complex where favourable conditions "pull" them. However, the significance of relatives/friends and company recruitment in chain migration may be appreciated from a more analytical discussion (Table V.6). Two related hypotheses, (i) and (ii), may now be tested: while the former states that chain migration is engendered by the presence of relatives and friends in the tea estates, the latter states that it is caused by the deliberate policy

of the tea companies in Kericho to recruit cheap labour from selected rural areas. Since recruitment was made through tribal chiefs the two hypotheses are tested on tribal dimension. Using a X^2 test, the following hypothesis is tested (Table V.6):

H_o : There is no significant difference between relatives/friends and company recruitment as the medium for learning of job opportunities leading to chain migration along tribal lines.

H_1 : There is significant difference between the two media.

The result is significant hence H_1 is accepted in lieu of H_o (Table V.6).

Table V.6 - Chi-square test for Relatives/Friends and Company Recruitment as Media for Learning of Job opportunities.

Tribal Group	Source of Information				Total
	Relative/Friend		Company Recruitment		
	Observed	Expected	Observed	Expected	
Luo	131	132.0	14	13.0	145
Luhya	54	58.3	10	5.7	64
Gusii	59	63.7	11	6.3	70
Kuria	49	49.2	5	4.8	54
Kalenjin	96	87.4	0	8.6	96
Kikuyu	1	0.9	0	0.1	1
Others	28	26.4	1	2.6	29
All Tribal Groups.	418		41		459

X^2 = 18.16 $\quad \alpha$ 0.05 = 12.59

df = 6 $\quad \alpha$ 0.01 = 16.81

5.2 APPLIED MIGRATION MODELS AND THEIR IMPLICATIONS

It is perhaps in migration, more than in fertility and mortality, that various models have been constructed. Disciplinary intercourse in this is considerable, yielding spatial interaction models by geographers, econometric models by economists, sociometric models by sociologists; and, outside the social sciences, mathematical, especially statistical, as well as models by social physicists[7]. Since the early 1960s there has been a major shift in social science research in which methodological tools for empirical research have been sharpened. In geography, social analysis has involved among other things re-evaluation of the central themes of the discipline, considerable stimulus emerging in migration analysis at various scales: from the behavioural through the individual decision to migrate to aggregate levels of spatial interaction (Clarke 1973). In tropical Africa, four main types of explanatory model of migration, generally emphasising rural-urban migration, have been developed (Masser and Gould, 1975 : 7-14). First, a systems model of rural-urban migration, developed by Mabogunje (1970), explains the individual migrant's response to stimuli from the environment and upon him within the system itself. However, incorporating unquantified elements in the system, the model is non-operational but provides a comprehensive explanation of observed experience of the migration process. Also, the system ignores rural-rural component which aids understanding of rural-urban relationships. Second, economic models of rural-urban migration attributed to Todaro and his associates, Harris and Rempel[8]. The essence of these models is a two-sector movement between rural and urban areas due to expected income differentials. Todaro's model has been much criticised: for its simplistic nature, for not quantifying rural incomes that may be contrasted with urban incomes, for excluding non-economic variables and for lack of spatial perspective. Perhaps income differentials in rural-rural migration could enrich it.

Third, spatial interaction models which have had widespread empirical testing in several developing countries[9]. These models constitute the cream of analysis in this study because of their evolution and wide application in geography. Finally, sequential models of migration process which take on temporal dimensions as well as sequential effects of migration in tropical Africa. Initiated by Mitchell (1954) in the context of labour circulation, sequential models have been more rigorously developed by Riddell (1970) and Riddell and Harvey (1972) in Sierra Leone. Sequential absorption of individual migrants, stage by stage, into the modern sector of the economy is typical of these models. But despite their relevance to rural-rural migration, sequential models have hardly been tried out in this migration process. The models analysed in this section of the chapter are simply intended to illustrate merits as well as demerits in theoretical cum empirical studies of migration.

5.2.1 Spatial Interaction Models

The interplay of the three components of spatial interaction, namely, complementarity, intervening opportunities and transferability, appears in different parts of this study[10]. Models developed to explain the spatial perspective of migration involve multiple regression techniques or revolve around the gravitational hypothesis. Most relevant for this study is the much discussed "gravity model". Simply stated, two places interact with each other in proportion to the product of their masses and inversely according to some function of the distance between them (Abler, et al., 1972 : 221). Expressed mathematically the formula becomes:

$$I_{ij} = f \frac{M_i M_j}{d_{ij}} \qquad (4)$$

where I_{ij} = the number of interactions between i and j during some time period,

d_{ij} = the distance between i and j,

M = some measure of the size or mass of the interacting pair of places, and

f = a constant of proportionality.

Thus the gravity model is best suited for analysing the interaction between several places (and has often been applied thus) rather than between one place and others, as in the present study. However, this is by no means a major constraint since, theoretically, the model still works. In the context of migration, the terms "mass" and "interaction" may be substituted with population (or migrants) and migration respectively. Using data available for the present study, interaction between the district population centres and Kericho tea estates complex has been computed (Table V.7). Comparison of Table V.7 with Figure 15 reveals interesting features. First and foremost, the migration curve is irregular, a fact attributable to differential interaction between respective population centres and Kericho which does not satisfy the inverse migration-distance relationship. Homa Bay, the sixth ranked in distance, has the greatest interaction with Kericho, followed closely by, Kericho itself. Another anomaly exists between Kisumu on the one hand and Kisii and Kakamega on the other, the last two outstripping Kisumu which is closest to Kericho. But evidence of distance decay exists for Siaya, Bungoma and Busia respectively, although Busia, surprisingly, outstrips Bungoma. Thus the gravity model makes little sense with the data used in the present study. However, transformed log-migration and log-distance relationship using log-linear regression, is relatively inverse (Table V.7), suggesting that this theoretical feature may have been distorted by sampling errors among other unidentified variables.

Table V.7 - Interaction Between Kericho and Population Centres of Western Kenya Districts.

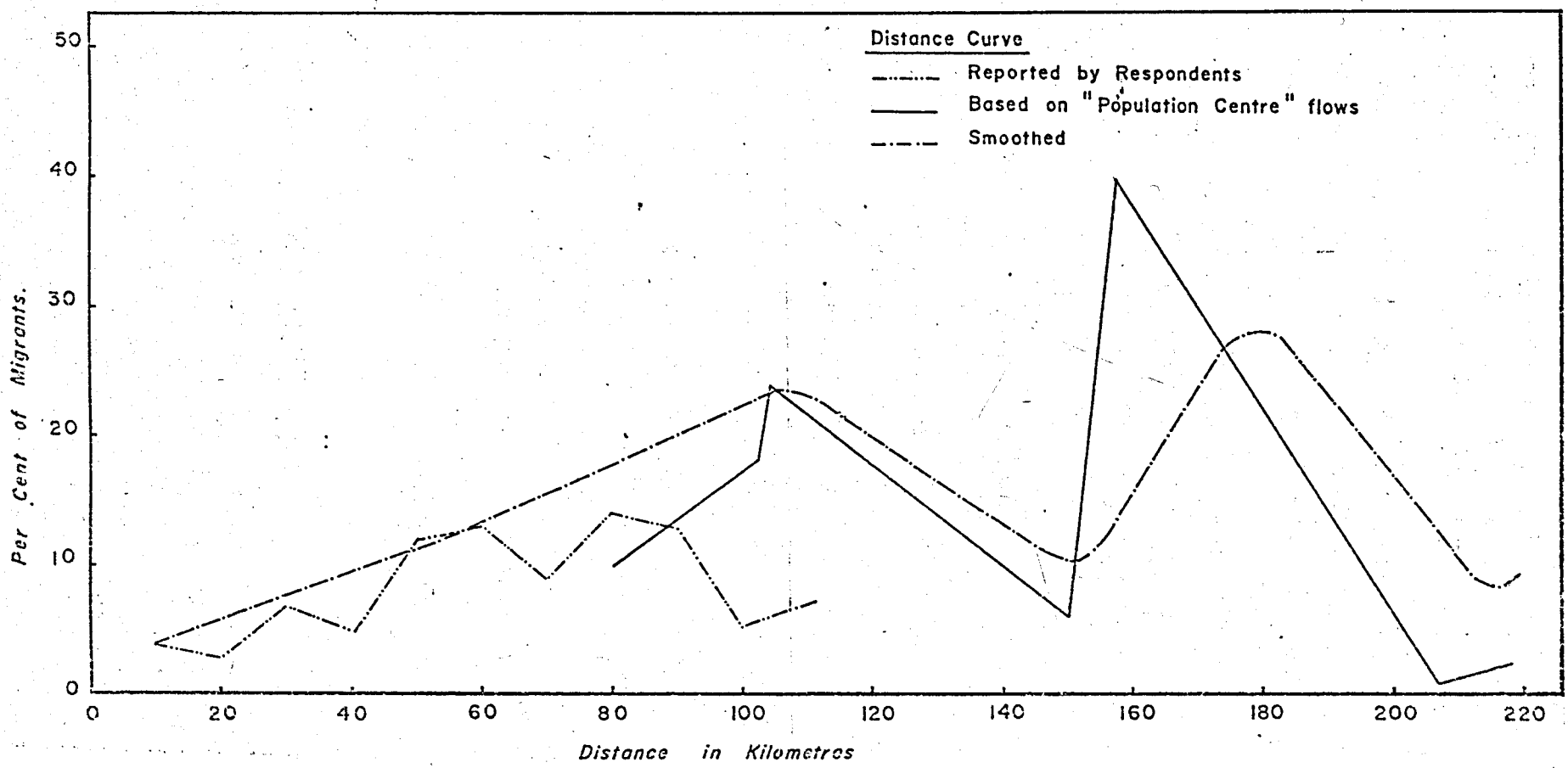
From District Population Centres	To Kericho				
	Distance (in Km)	Log-Distance	Number of Migrants	Interaction Energy Factor $\frac{M_i M_j}{d_{ij}}$	Rank Rank
Kericho	40*	1.6	58	1.45	2
Kisumu	80	1.9	36	0.45	5
Kisii	104	2.0	138	1.33	3
Kakamega	133	2.1	102	0.77	4
Siaya	150	2.2	59	0.39	6
Homa Bay (South Nyanza)	157	2.2	234	1.49	1
Bungoma	207	2.3	3	0.01	8
Busia	218	2.3	11	0.05	7

*Conventionally, the distance of place from itself is taken as half the distance of its nearest neighbour; for Kericho the nearest neighbour is Kisumu.

Performance of the gravity model with our data, and as observed in other studies, defies its acceptability in migration analysis. Since the Western Kenya Districts are heterogeneous, their interaction with the tea estates complex cannot be explained in the context of distance alone. Rarely do population movements originate from the population centres themselves thereby fulfilling this basic requirement of the gravity model. That the majority of migrants from South Nyanza, for example, originate from locations nearer Kericho than Homa Bay, the local population centre, defies this rule (See Figure 12). Moreover, the laws of spatial interaction presuppose aggregate rather than individual human behaviour; and idealise homogeneity which hardly exists in the real world (Abler et al., 1972 : 233). Due to an apparent conflict between macro and micro spatial forms of human behaviour, it is necessary to distinguish between the two and ascertain their performance in gravity models. These and other criticisms have been levelled against the gravity model in a steadily growing body of literature[11]. The theoretical fascination vis-a-vis empirical farce of the gravitational hypothesis is evident in early works on the concept by social physicists, notably Stewart (1948). That human numbers are equated with mass in physics, and that their behaviour is expected to be identical with that of the latter, demonstrate the ridicule of the whole model.

Yet ever since the 1940s the thesis remains that migration, like other elements of spatial interaction, is directly proportional to the product of the population of the two regions involved and inversely proportional to the distance between the regions. This hypothesis is attributed to Zipf (1946; 1949) who derived the following formula:

Fig.15. MIGRATION–DISTANCE RELATIONSHIP BETWEEN KERICHO AND OUT-MIGRATION AREAS IN WESTERN KENYA.



$$M = \frac{P_1 P_2}{D} \qquad (5)$$

where M = gross migration between two regions;
P = Population of regions 1 and 2; and
D = distance.

Zipf's P_1P_2/D hypothesis, which assumes that migrants make the least effort in the process of migration, has been modified in different countries where it has generally been accepted. Among the chief criticisms of the hypothesis is its tendency to overestimate short-distance migration (ter Heide, 1960 : 58). Though not rigorously tested in this study, overestimation of short distance migrants, especially by the gravity model formula, is evident.

To conclude this sub-section, it should be stressed that the inverse relationship between migration and distance, as different authors do recognise, is due to three aspects of circumstantial evidence: the expense and difficulty of travelling over long distances, which underscores the distance-decay principle; migrants' wish to maintain contacts, personal or business, with their origins or permanent domicile; and the fact that information about opportunities decreases with distance[12]. In the case of the study area, the first and third circumstances do not seem to hold because migrants travelled to Kericho by either tea company or personal means and the cohesiveness of Western Kenya facilitates nearly uniform dissemination of information. But migrants' maintenance of contact with their home areas has already been realised in the previous chapter.

5.2.2 Socio-economic Models of Migration

Several socio-economic models have been developed to explain the determinants of migration, all of them exclusively

concerned with rural-urban migration. Two broad categories here are the "intervening opportunities" in the context of competing migrants and a host of econometric models a few of which are discussed here for illustrative purposes.

(i) Intervening Opportunities and Migrants.

As a component of spatial interaction the concept of "intervening opportunity" has already been defined. In contrast to Zipf's P_1P_2/D hypothesis, Stouffer gave an explanation based on a variety of intervening opportunities in a given distance spectrum, for example, employment opportunities, housing vacancies, and so on. The germ of Stouffer's (1940) argument in 1940 was that the number of people moving a given distance is not a function of distance directly but rather a function of the spatial distribution of opportunities; and revisiting his hypothesis a score years later, he incorporated the idea of competing migrants (Stouffer, 1960). Thus from the initial position that the number of persons going a given distance is directly proportional to the number of opportunities at a given distance and inversely proportional to the number of intervening opportunities between places i and j, Stouffer later also attributed the latter to other migrants competing for opportunities at place j. Unlike most migration models, it describes urban-urban migration. Stouffer's initial formula

$$Y = \frac{a^{X_M}}{X^b_A}, \quad \text{where } b = 1 \qquad (6)$$

changes to

$$Y = \frac{K\, X_M}{(X_B\, X_C)b} \qquad (7)$$

where:

Y = number of persons going a given distance;

X_M = number of opportunities at that distance,

X_A = number of intervening opportunities in between places,

XB = revised concept of intervening opportunities, and

XC = new concept of competing migrants.

In a study of U.S. Negro migration from the South to major Negro urban centres for the periods 1935-40 and 1955-1960, Lewis (1971) found that the intervening opportunities model performs slightly better than the gravity model. Given the sociological framework of Stouffer's model which incorporates among other things social distance, it is not applicable in the present study. Moreover, the model overemphasises the role of one factor only, the intervening opportunities, which may in fact rank lower than other explicit factors: economic, psycho-social and others. But as data on intervening opportunities in and competing migrants from Western Kenya were not collected, testing it remains a matter for further research. As more opportunities emerge in the area and pose a threat to Kericho's economic predominance, testing the model will in future become more appropriate than ever before.

(ii) Econometric Models

Among social scientists, economists have had relatively an uppermost hand in developing models, albeit on the assumption of homo economicus. All economic models may, for simplicity sake, be reduced to the cost-benefit framework about which different authors have written and in which different variables surface. Originated by Schultz (1962), the cost-benefit migration model was developed by Sjaastad (1961; 1962) in the following formula:

$$M_{i\ j} \sum_{j=1}^{N} \frac{(Yd_j - Y_i)}{(1 + r)^j} - T > 0 \qquad (8)$$

where:

$M_{i\ j}$ = migration from place i to j,

Yd_j = earnings in qnth year at the destination j,

Y_i = earnings in qnth year at the origin, i,

T = cost of moving,

r = discount rate in future earnings, and

N = total number of years in which future returns are expected.

But this broad formulation has been enriched further by calculating the costs C_i variables (e.g. costs incurred in leaving place i, earnings forgone at it, non-monetary or psychic costs of leaving i, and costs of moving from place i to j) on the one hand, and calculating the returns R_j at destination j on the other. The latter include earnings potential at destination j specific to age of migrant, profile of prices or costs of living at j, earnings potential at j specific to earnings potential specific to skills at j, risk of unemployment, non-monetary/amenity benefits at j and additional socio-economic factors operating at j. Difficulty in quantifying, leave alone enumerating the costs and returns, of migration renders the applicability of the model "chaotic". For example, in a survey among actual or potential mover and stayer populations, Shaw (1974) found that 45 percent of actual movers were able and the same proportion unable to enumerate costs and returns, and that while 60 percent of potential movers did, the rest could not. Application of Sjaastad's (1962) formulation of migration as human investment has had mixed results in different countries. Among the best is Speare's (1971) cost-benefit model of rural-urban migration in Taiwan. Due to the type of data available, Speare (1971 : 122) ended formulating an

additive rather than a multiplicative cost-benefit equation in which over and above the earnings, other variables were included, notably job information, home ownership, location of parents and location of wife's parents. These diverse variables make the model more relevant to the present study on which it has a bearing (see sub-section 5.2.3). Variables found to have the strongest effect on the propensity to migrate are location of parents, cost of moving which has a negative effect and unemployment at i, income being relatively less important than either of the first two (Speare, 1971 : 124).

Todaro's (1969) model is a simplified conception of the cost-benefit framework placing greatest emphasis on expected rather than observed incomes as well as urban employment opportunities. In formula form it is:

$$\frac{M}{L_u} \quad f \quad \frac{(V_u - V_r)}{V_r} \qquad (9)$$

where:

M = the net number of rural-urban migrants,

L_u = the size of the urban labour force,

V_u = the discounted present value of the expected urban real income over an unskilled worker's planning horizon, and

V_r = the discounted present value of the expected rural real income over the same planning horizon.

Despite considerable attack of the model from both empiricists and theoreticians, Todaro and his associates have maintained their original thesis and rationalised its workability in the developing countries[13]. To rebuff their adversaries, Todaro cites six studies to substantiate the success of his theoretical construct; and House and Rempel (1980 : 26)

use the polytomous logistic or linear logit model which "has been used to determine the probability that a certain mode of urban transport will be used by commuters rather than some alternative mode". This polytomous logistic model of migration is expressed by the following formula:

$$\frac{P_{ij}}{P_{ii}} = \frac{\exp(Z_{ij})}{\exp(Z_{ii})} \qquad (10)$$

where:

P_{ij} = the probability that an individual, faced with n possible alternative locations, including birthplace i, will be residing in a region other than i in anytime period;

P_{ii} = the probability that an individual will be sedentary at i; and

Z_{ij} = weighted personal characteristics (e.g. wage levels and employment opportunities);

Note: (a) the distance between the regions is expressed thus:

$$P_{ij} = \frac{\exp(Z_{ij})}{\sum_{j=1}^{n} \exp(Z_{ij})}, \quad i, j = 1, \ldots, n.$$

The sum of P_{ijs} for each region is 1

(b) the probability of the individual remaining in region i is:

$$P_{ii} = \frac{\exp(Z_{ii})}{\sum_{j=1}^{n} \exp(Z_{ij})}, \quad i,j=i, \ldots n; i \neq j$$

In contrast to Todaro's model and the House-Rempel polytomous logistic model, as derived here, studies by Huntington (1974) and Rempel (1981) found income to be a significant deterrent to migration; and Greenwood's (1971) finding in India that the lower

the rural income the less well-suited the migrant is for urban employment. This suggests that certain generalisations which have become pertinent in migration analysis, especially on income differentials of origins and destinations, have to be viewed with suspicion. In concluding their study, House and Rempel (1980) : 32) call for an in-depth study of migration that will generate data allowing for ascertaining a much finer profile of migrants as well as a better disaggregation of the determinants of migration. The present study is an attempt to do this in a small way, in the area of rural-rural migration where the gap of income levels of origins and destinations is supposedly smaller than that of urban-rural areas. It attempts to lay the foundation for more empirical research geared towards testing econometric and other migration models. The next sub-section addresses itself to this.

5.2.3. Towards a Rural-Rural Migration Model

The preoccupation of migration modelers with rural-urban stream is appropriate on the one hand, and deficient on the other. It is appropriate because in the developing countries, as Zelinsky's "migration transition hypothesis" holds, rural-urban migration best explains regional economic differentiation in a two-sector economy. It is deficient because rural-rural migration which involves a relatively different category of migrants, does account for a higher proportion of internal migration but, paradoxically, remains little studied. The importance of a rural-rural migration model cannot, therefore, be overemphasised.

The Model.

This rural-rural migration model based on a double logarithmic transformation is conceived on the premise of several explanatory variables generally influencing migration,

the dependent variable. It incorporates spatial, geo-ecological (environmental), economic and non-economic variables already discussed in the previous section, but here considered in the context of Western Kenya. The model was initially derived as follows:

$$Mij/Pi = f(Dij, Pj, Wij, Iij, Tij, Fi, Fj, Xi, Xj, \ldots) \quad (11)$$

where:

Mij/Pi = migration of a proportion of population at origin i to the destination j,

Dij = the geographical road distance in kilometres between j and the district population centre (headquarters) in i,

Pj = population resident at j,

Wij = a measure of the difference in income between i and j limited to favourable income at the latter,

Iij = a measure of information flow (about employment opportunities) emanating from j to i,

Tij = tribal linkage between i and j evidenced by the presence of relatives and friends at j from the same i,

Fi = a measure of the dominant environmental factors "pushing" migrants at i,

Fj = a measure of the dominant environmental factor "pulling" migrants to j,

Xi = a measure of proxy variables of personal or psycho-social (non-economic) consequence operating at i,

Xj = a measure of proxy variables of personal or psycho-social (non-economic) consequence operating at j.

Empirical Results of the Regression Model

All computations for the regression model were processed on the George 2,ICL 1900 computer at the Institute of Computer Science, University of Nairobi. The programme used was the Statistical Package for the Social Sciences (SPSS) H, Version 5.01. Although nine independent variables are included in the model, only six of them, the significant ones, appear in the stepwise regression analysis. This technique is designed to include one independent variable at a time. In each step where a variable is entered, there will be computed correlation and regression coefficients for explanatory variables and partial correlation coefficients for "non-explained" variables entered (see Appendix II). Simple regression coefficients are estimated by ordinary least square technique, completing step 1 in the analysis. In step 2, partial correlation coefficients are derived, their F-ratios determined to show which variable accounts for most of the remaining variations in the dependent variable (Mij/Pi), and the step is completed by determining a new regression equation which includes both the variable in question and the one from step 1. This procedure is repeated for subsequent steps in which new variables are added.

Both multiple and stepwise regression analyses shed some light on the relationship between migration and the various explanatory variables. Reference to simple correlation coefficients matrix (Table V.8) and the summary table for the regression model (Appendix II) will clarify the following analysis.

The general picture emerging from the relationship between migration and the independent variables (Table V.8) is that it has strong positive correlation with all the variables excepting distance (Dij). But its negative correlation with distance is weaker than that experienced in rural-urban

Table V.8 - Simple Correlation Coefficients

	Mij/Pi	Dij	Pj	Wij	lij	Tij	Fi	Fj	Xi	Xj
Mij/Pi	1.00	-.416	.883	.776	.856	.981	.877	.831	.715	.798
Dij		1.000	-.421	.063	-.430	-.427	-.256	-.119	-.422	-.458
Pj			1.000	.863	.977	.954	.977	.929	.957	.983
Wij				1.000	.809	.836	.941	.979	.797	.807
lij					1.000	.934	.950	.878	.940	.974
Tij						1.000	.946	.898	.831	.894
Fi							1.000	.983	.922	.947
Fj								1.000	.873	.888
Xi									1.000	.989
Xj										1.000

migration studies : a correlation coefficient of -.57 has been computed for Kenya in a recent study by House and Rempel (1980 : 35); and -.609 for India in Greenwood's (1971: 149) study. The difference is attributable to the fact that distance is less important in this rural-rural study (as already shown in section 5.1.1) than in rural-urban migration probably due to greater disparities between the two poles in the latter than in the former. Migration is most strongly correlated with tribal dominance of tribal groups maintaining links with their origins, links that enhance chain migration as well as information flow to potential migrants. While all the independent variables have strong positive intercorrelations, distance has much weaker negative correlation; only positive, albeit very weak, with income differential. Deeper insight into the model may now be made.

(i) Tribal Dominance (Tij)

Tribal dominance of tribal groups identified in Kericho is almost identical with that of the contribution of Western Kenya Districts in this rural-rural migration process. Migration is positively correlated with this variable. But the relationship is not significant on either 95 percent or 99 percent levels. Except for distance, tribal dominance is very strongly correlated with all other variables. This fact may not appear important at face value, but the dominance of the Luo, the Gusii and the Luhya in Kericho testifies to it. Huntington(1974 : 50) has found that "friends and relatives can be (since his migration study was rural-urban) an urban source of psychological benefits, economic support during the job-search process, and/or information about employment" because ... "family members often eases one's entrance into an urban centre" (Huntington, 1974 : 51). In Kericho tea estates complex, this aspect of ethnic linkage is even more important.

(ii) Personal and Psycho-social Factors (Xi)

The origin personal and psychological factors may be considered as proxies for non-economic or environmental factors generating migration. On being entered in the model, it assumes importance, being significant at both 95 percent and 99 percent levels. This together with Tij, the two complementary factors, begin to exert considerable impact in determining migration. It is also strongly correlated with destination population (Pj), information flow (Iij) and environmental push factors (Fi) in that order.

(iii) Environmental "Push - Pull" Factors (Fi,Fj).

Within Western Kenya different environmental factors - ecological constraints,(floods, drought, famine) and population pressure on the land - tend to push migrants from their origin districts. In step 3 of the model, this variable and Xi are not significant; but tribal dominance retains significance at both 95 percent and 99 percent levels. That some dominant environmental factor is important is demonstrated by its strong positive correlation with destination population (Pj) which migrants themselves make up; information flow (Iij) which emanates from destination population to i; tribal dominance that gives linkages between i and j; and income (Wij) between the two (Table V.8). The "push-pull" theory often entrenched in migration studies, has tended to take on either a geographical or an economic stance without being treated more comprehensively. This study attempts to marry the two at both poles of migration. At the destination another set of environmental factors pull migrants to Kericho, the most salient being employment opportunities. With four independent variables entered in step 4, only tribal linkage remains significant at both 95 percent and 99 percent levels. Fj is most strongly correlated with its opposite number at the origin (Fi), followed by income (Wij) and destination population (Pj) in that order.

(iv) Distance (Dij)

There is practically no migration study that does not analyse migration - distance relationship. As in most studies, geographical road distance is adopted here; and, as most studies have shown, it is negatively correlated with migration as well as other independent variables. In step 5 both distance and origin personal/psycho-social factors (Xi) are non-significant as opposed to tribal dominance (Tij), which is significant and both levels of significance; and environmental factors at both poles (Fi, Fj) which are significant on 95 percent level only. The weak relationship between distance and other variables suggests its unimportance in rural-rural migration or less importance in it than in rural-urban migration. Indeed given our premise of this study, this contrast seems to be a question of short-distance vis-a-vis long distance migration irrespective of the migration stream being considered.

(v) Income Differential (Wij)

In an area with substantial employment opportunities such as Kericho tea estates complex, the role of income differential cannot be overemphasised. Yet it is the least important among the six salient explanatory variables. On entering all the six variables in step 6, they are found to be significant at both 95 percent and 99 percent levels. Income is most strongly correlated with both origin and destination environmental factors (Fi, Fj) and tribal dominance (Tij). Since our index for income differential is its being favourable at the destination relative to the origin, the relationships just explained are understandable. In the developing world, income forms the basis of Todaro's (1969) famous model (see equation 9). Suffice it to add here, income reliability or even favourability seems to be a better measure than income differential per se considered in origin vis-a-vis destination.

In the final analysis, the empirical model is derived as follows:

$$Mij/Pi = \alpha + \beta_1 Tij + \beta_2 Xi + \beta_3 Fi + \beta_4 Fj + \beta_5 Dij + \beta_6 Wij \qquad (12)$$

Since the performance of the regression model has already been discussed, there is no need in extending a discussion of the above equation (12). Regression coefficients can be substituted for notations; and empirical results will simply corroborate what has already been discussed in the analysis. Although three variables, namely, destination population (Pj) as well as personal/psycho-social factors (Xj) and information flow are not included in the stepwise regression analysis, this by no means suggests their relative unimportance. After step 6 both F-level and tolerance level of explanatory as well as "non - explained" variables became insufficient for further computation. However, that these factors have highly positive relationship with migration becomes clear in the correlation coefficients matrix (Table V.8).

To conclude this analysis, it may be stated that the basic derivation of this rural-rural model is almost similar to that of Rempel's (1974) rural-urban model. The two models relate migration to the origin population hence their similar derivation, Mij/Pi.[14] Rempel's model is based on sixteen independent variables generated from varied data sources including census data, employment and earnings data, farm surveys data and the like. The present study derives the model primarily from survey data as well as census data, the latter relating to origin population (Pi) only. These points of departure have to be appreciated when considering the performance of the two models. For a dynamic phenomenon such as migration no model can claim to be omnipotent. Migration models may be both general and situation-specific; and the two models inquestion fall in the latter category. They are expressions of continued attempts to develop comprehensive migration models relating to particular migration streams in the country.

A General Model of the Decision to Migrate.

The foregoing regression model considers migration in the context of a group selected as migrants. But this does not explain an individual's decision to migrate, an aspect of micro-analysis. For an individual the general model of the decision to migrate is an either-or alternative (Figure 16).

Temporal factors include the process of labour recruitment in Western Kenya. It began as a forced process under the colonial government during the incipient stages of the tea industry; but later became voluntary as migrants turned for employment opportunities at the tea estates complex. Also, changing values and aspirations at origins as well as prerequisites for job offers at j have influenced reaction of potential migrants. The presence or absence of earlier (ancestral) migrants at j is another important factor with temporal dimension. Spatial factors, on the other hand, include the concentration of labour rectruitment at particular origins, South Nyanza and Kisii Districts being the most notable examples. They alse include environmental constraints discussed earlier (Figure 14).

These spatio-temporal factors, acting in concert rather than separately, constitute the information-perception matrix in which prospects of movement from i to j are perceived; initial support as well as job opportunities at j are considered; and the contrasting advantages at the two termini are realised. They generate either interest in or indifference to migration.

For potential migrants the propensity to migrate is reinforced by perceived differences between i and j, noticeable advantages of j over i and possibilities for initial support at the time of migration. These are further enhanced by whether actual movement can actually be made,

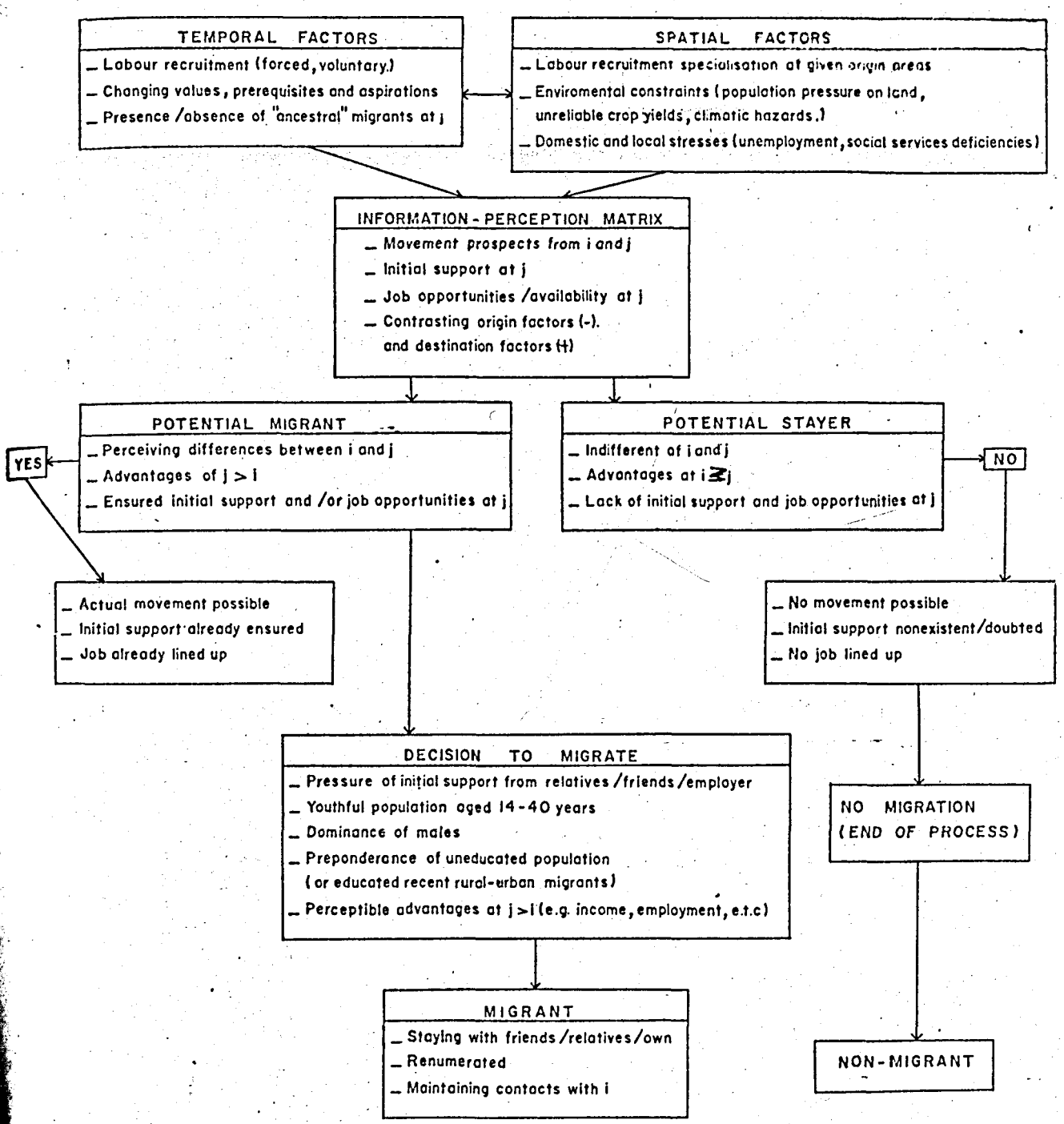


Figure 16. A MODEL OF THE PROCESSES OF THE DECISION TO MIGRATE.

whether initial support has been enlisted and whether a job is already lined up. If all these are favourable, the decision is made to migrate, the decision itself being a function of migration determinants as well as differentials, notably age, sex and educational attainment. In the final analysis, the migrant has the option of staying with relatives/friends for initial support or on his own; is renumerated on securing employment or subsidised by relatives/friends before then; and maintains some contact with i depending on the presence there of relatives and/or property. But for potential stayers at i, factors such as indifference to perceptional advantages of j over i or the reverse inhibit further consideration of migration. Equally important is the perceived lack of initial support or job opportunities at j. All these result in non-migration and seals up the whole decision-making process.

In summary, this chapter has demonstrated the complexity of determinants of migration which may now be reiterated. While it is virtually impossible to draw an exhaustive list of all causal factors, it is feasible to identify the salient determinants or the relationship between migration and a number of independent variables. At the individual level, however, these factors may induce the origin population either to migrate or to remain intact. In fact, at both group and individual levels these determinants of migration or factors involved in the decision to migrate show the complexity of migration analysis itself.

NOTES:

1. While some studies approach analysis of the determinants of migration from a deterministic standpoint, that is in keeping with "environmental determinists", others apply probabilistic techniques dominated over the last few years by quantitative methods. For appreciation of the two incompatible approaches, see Harvey, D. (1969).

2. This thread of argument has been running through all the writings of Ominde on out-migration from the area as well as intra-regional migration. It all started with his analysis of population-land relationship in Western Kenya (Ominde, 1963) through his masterpiece on Kenya (Ominde, 1968a) to his article on the former which examines rural economy (Ominde, 1971).

3. From his M.A. Thesis Ayiemba (1974) has published subsequent papers which throw considerable light on the role of geo-ecological factors on migration: for the articles, see Ayiemba, (1974a; 1974b; 1976).

4. Personal communication with the tea company officials, which corroborates the colonial Kericho District Commissioners' reports, asserted that South Nyanza was for a long time the main reservoir of cheap labour at a point in time when the defunct Central Nyanza (now separated into Siaya and Kisumu Districts) and North Nyanza (the bulk of which is now Kakamega District) recorded higher indices of socio-economic development e.g. education, agricultural development and the like. As an economic backwater, therefore, South Nyanza (incorporating Kisii upto 1962) provided labour to the study area as a mortgage to livelihood in the area. Tribal perspective of labour recruitment bias in the tea estates complex is adequately depicted in Osoro (1979).

5. These are summarised in Huntington (1974), Table 5.1.

6. There is massive economic literature on migration, all of it recognising the dominance of economic over non-economic determinants of migration. Among the most informative bibliographic material is Greenwood (1976).

7. For a detailed analysis of migration models, see ter Heide, (1963).

8. Detailed analysis is available in Rempel, Harris and Todaro (1970).

9. Literature on spatial interaction models is massive. Some notable examples are cited in various parts of this study e.g. Beals, Levy and Moses (1967) in Ghana; Sahota (1968) in Brazil; Adams (1969) in Jamaica, Greenwood (1969) in Egypt and India (1971); and Levy and Wadycki (1972) in Venezuela.

10. These constitute the bases of spatial interaction discussed extensively in Abler et al, (1972).

11. These include: Carrothers (1956), Isard and Bramhall (1960) and Olsson (1970).

12. For derivation of such a complex formulation, see Shaw (1975 : 87-89).

13. These include the latest analysis by House and Rempel (1980).

14 Quoted in Knowles and Anker (1977), Rempel's (1974 original independent variable, Mij/Pi., differs from its more recent form, Mij, (Rempel, 1981).

CHAPTER V1

CHAPTER VI

MIGRATION DIFFERENTIALS AND MIGRANT CHARACTERISTICS

In the previous chapter it was implied that certain qualitative attributes of the population do in fact influence the propensity to migrate. The present chapter extends this discussion by examining two different but closely related issues. First, migration differentials or the process of migration selectivity by specific demographic as well as socio-economic characteristics of migrants relative to the rest of the population are considered. In a crude sense, this is analogous to the Darwinian selection process whereby the surviving species (in this case migrants) have some peculiar features that enhance their selection. Second analysis is made of migrant characteristics, either observed or reported by them during their enumeration. Thus migrant characteristics are, by and large, the sum total of migration differentials distinguishing migrants as a distinct group from the sedentary population.

6.1 MIGRATION DIFFERENTIALS

6.1.1. The Process of Migrant Selectivity

The push-pull or cost-benefit factors considered in the previous chapter do not generally exert their force uniformly in a given population. Rather, they generate self-selection by which migrants differentiate themselves from the sedentary population, primarily by such variables as ethnic origin, sex, age, marital status, education, occupation and position in the family life cycle. This array of migration differentials consists of demographic attributes which are generally innate and socio-economic characteristics which signify creative aspects of the population.

Most assertions made on migrant selectivity often relate to rural-urban migration precisely because, as already explained in Chapter II, internal migration has tended to be biased toward that stream. For example, Browning (1971 : 275) asserts that migrant selectivity by demographic variables, socio-economic variables and psychological characteristics may change over time in response to changed conditions. He cites the interrelationship among all forms of migrant selectivity excepting sex in a statement which runs as follows: "... the young migrate, and being young, they are more likely to be single, or at least without large families", (and) "... in developing countries there are generally pronounced age-cohort differences in educational attainment, so their education will be higher than that of the adult population as a whole"[2]. These seem unequivocal assertions, yet ones requiring re-examining in analysis of rural-rural migration to which they might not apply. The problem is attributed to lack of a general theory of migration selectivity despite the landmark study by Thomas over forty years ago (Thomas, 1938) as well as much sociological, economic, geographical and educational literature to that end.

A cautionary remark seems appropriate here. Although migration differentials describe the average conditions of migrants as a group, they mask considerable disparities. There are likely to be a few odd ones among a given category of migrants purported to be selected by some characteristic(s). However, such deviant cases do not invalidate the dynamics of migration selectivity. In the next sub-section, the basic migration differentials in the Kericho tea estates complex are analysed.

6.1.2 Basic Migration Differentials

Distinction has already been made between demographic variables on the one hand, and socio-economic as well as psychic variables on the other. Some light must now

be shed on each of the basic migration differentials of migrants in the Kericho tea estates complex.

(a) Demographic Variables.

The first set of migration differentials consists of four demographic variables: tribal origin, sex and age and marital status. While all females reported their respective tribal groupings, some 5 (0.9 percent) males did not do so (Table VI.1). This underlines differential response of thetwo sexes. The pattern of sex ratio relates to those interviewed only and differs from that of households which will be discussed later. Two striking features of sex ratio may, however, be mentioned: first, high masculinity among the Kalenjin and "other" tribal groups and, second, low sex ratio evidencing female dominance among the Kikuyu. The Luo are by far the most dominant tribal group followed by the Gusii, a situation which explains the substantial contribution of Nyanza Province. Both of them account for 61.6 percent of both sexes, 54.1 percent of males and 73.9 percent of females. That the number of these two tribal groups transcends the Kalenjin, who are indigenous in the Kericho area, may be explained by the following statement:

> "The large tea estates and many dispense with Lumbwa (Kipsigis) labour, who have no idea of working, a week of work and two at home is their principle, and with tea which must be plucked day after day, such labour is useless"[1].

This explains the numerical insignifance of the Kalenjin group who are indigenous in the area. The proportion of Luo females is higher than that of male counterparts, this being attributed partly to a large female stream from South Nyanza District; and the reverse is observed among the Kalenjin, most of whom stay without their spouses.

Table VI.1 Tribal Origin of Migrants By Sex in Kericho Tea Estates Complex.

Tribal Group	Sex					
	Both		Male		Female	
	Number	Percent	Number	Percent	Number	Percent
Luo	389	41.4	207	35.7	182	50.7
Luhya	133	14.2	86	14.8	47	13.1
Gusii	190	20.2	107	18.4	83	23.2
Kuria	33	4.5	18	3.1	15	4.2
Kalenjin	133	14.2	119	20.5	14	3.9
Kikuyu	9	1.0	4	0.7	5	1.4
Other	52	5.5	39	6.7	13	3.6
All Tribal Groups	939	100.0	580	99.9	359	100.1

A notable feature of tribal composition of the tea estates is the presence of the three largest and most migratory tribal groups in Kenya, namely, the Luo the Luhya and the Kikuyu. But the small number of the last group seems to be due to its detestation of farm labour, and therefore less involvement in rural-rural migration other than the land-colonising type. Of population enumerated elsewhere in Kenya in 1969, outside their provinces of residence, the Kikuyu accounted for 20.4 percent; the Luhya, 15.4 percent; the Kuria, 12.8 percent; the Gusii, 11.7 percent; the Luo 11.6 percent; and the Kalenjin, 2.6 percent (Kenya, Republic of, 1977). These proportions give relative propensity to migrate among the major tribal groups encountered in the sample. Both the census enumeration and the present study corroborate Ominde's earlier finding which portrays the ethnic pattern of Kenya in terms of the major linguistic groups (Ominde, 1968a: 86). Redistribution of population has been more selective of these tribal groups than others.

Migration selectivity by sex has, since the time of Ravenstein, dominated the debate regarding different migration streams and the sex differential and its relationship with migration distances. That only 38.0 percent of migrants are females suggests a high sex ratio in favour of male population. Ravenstein's (1885) fifth law, that there is predominance of females among short-distance migrants", is certainly as questionable in this study as it is in other studies in the developing world where spouses' decision to migrate is subsidiary to that of their husbands. Although it applies to Latin American cities (Browning, 1971 : 287-288) and is likely to be the case in African cities in the near future, it is not expected to be important in rural nodes of development such as the study area where males, the bread-winners, are generally attracted. As argued by Mincer, "within the family, higher market earning powers of husbands reduce a lesser market participation,

Table VI.2 - Age-Sex Structure, Sex Ratio and Age Ratio of Migrants in the Kericho Tea Estates Complex.

Age group (in years)	Sex						Ratios	
	Both		Male		Female		Sex	Age (Both)
	Number	Percent	Number	Percent	Number	Percent		
15-19	125	13.4	31	5.4	94	26.6	33.0	-
20-24	232	24.9	133	23.0	99	28.0	134.4	.570
25-29	202	21.7	129	22.4	73	20.7	176.7	1.345
30-34	143	15.4	88	15.3	55	15.6	160.0	1.629
35-39	105	11.3	84	14.6	21	5.9	400.0	1.273
40-44	60	6.5	55	9.5	5	1.4	1100.0	1.348
45-49	29	3.1	25	4.3	4	1.1	625.0	.921
50 +	34	3.7	32	5.5	2	0.6	1600.0	-
All Age group	930	100.0	577	100.0	353	99.9	163	-

lower market earnings, and a diminished migration pay off for the wife (Mincer, 1978 : 753). This seems to be the case in the Kericho tea estates complex in which female employment is in fact a recent phenomenon, generally procured during their stay in the area.

The most important and consistent migration differential is age. Bogue holds that "only one migration differential seems to have systematically withstood the test - that for age"[2]. Unlike most rural-urban migrations in which the peak of migration occurs in the 25-29 years age group, the peak is 20-24 years age group. Upto age 29 years both sexes account for 60 percent of all age groups, males for 50.8 percent and females for 75.3 percent (Table VI.2). Thus younger females than their male counterparts are selected within the 15-29 years age bracket. The youthful characteristic is typical of migrant populations because, as Clarke argues, late adolescents and young adults are usually preponderant, often migrating to their first job (Clarke, 1965 : 124). With the school-leaver population becoming increasingly younger, in the face of contracting employment market, the process of migrant selectivity by age is likely to intensify in the future.

All age groups, excepting the 15-19 year age group, exhibit high sex ratios typical of migrant population. From the age of 40 years onwards there exists a vast sex differential, attributable to earlier return migration of females than males. Age ratios are generally high, more than doubling in all age groups within the 25-44 age bracket; thence age ratio decreases.

Marital status constitutes the last of the demographic variables by which migrants are selected. It is related to sex ratio, depending on the proportion of husbands to their wives in the case of respondents

and that of males and females in the case of the entire migrant population.

Table VI.3 - Marital Status By Sex of Migrants in the Kericho Tea Estates Complex.

Marital Status	Sex					
	Both		Male		Female	
	Number	Per cent.	Number	Per cent.	Number	Per cent.
Single	442	47.6	109	18.9	17	4.8
Married	477	51.3	460	79.6	333	94.9
Separated	4	0.4	3	0.5	1	0.3
Divorced	6	0.6	6	1.0	-	-
Widowed	-	-	-	-	-	-
Total	929	99.9	578	100.0	351	100.0

Females are predominantly married because the sample was confined to married females only, although single and separated ones were encountered, too (Table VI.3).
It may further be seen from the table that, despite being a significant group, single population are not the most migratory. Bogue and Zachariah's (1962) study of Bombay, Caldwell's (1969) analysis of rural-urban migration in Ghana and other works attest to this. In this study married population, controlling for age, are the most selected of all other categories. But whether or not couples migrate together remains to be considered in the sub-section 6.2.1. The absence of widowed population is very surprising in a population where the inclination of the category to paid employment is to be expected.

(b) Socio-economic and Psychic Variables.

Migration is also selective by a number of socio-economic and psychic variables: educational attainment, economic status; and the propensity to assume risk where prior decision to migration has not been made. Brief analysis of each of these is made here.

If migration is selective of the youngest, best educated and most able-bodied breed of the population, as many studies have affirmed, then the rapidly expanding band of job-seekers must be expected to be selected. For unskilled population, such as those with whom this study is concerned, low educational attainment coupled with a restricted margin of bargain for renumeration tends to exercise a controlling effect. Out of a sample of 571, a staggering figure of 475 (83.2 percent) do not have any training for skilled jobs as against 96 (16.8 percent) who do. This explains partially migrant selectivity of non-skilled labour for labour-intensive tasks that the tea industry entails; thus unemployed persons are more selected than employed population. The importance of economic factors in determining migration suggests among other things that closer analysis of occupational categories vis-a-vis their renumeration is desirable.

Educational attainment is a very important migration differential. This is especially so in rural-urban migration where the swelling numbers of job seekers compete for fast diminishing employment opportunities. Educational attainment is perhaps the most unstable migration differential because it changes with time as different time-scales demand varied levels of it. To amplify the assertion, before World War II the labour force in the Kericho tea estates complex and indeed the whole unskilled labour market required no educational attainment; but over the years those with primary education have come into the picture and,

with the turn of the seventies, even secondary school leavers offer themselves for employment in a sector at which they would have scorned before. Whereas the majority of migrants have no formal education, in the case of males primary school education is by far the most significant educational attainment (Table VI.4). Indeed, illiteracy and semi-literacy are experienced more among females than

Table VI.4 - Educational Attainment By Sex of Migrants in Kericho Tea Estates Complex.

Education	Sex					
	Both		Male		Female	
	Number	Per cent.	Number	Per cent.	Number	Per cent
None and illiterate.	261	27.8	79	13.6	182	51.0
None but literate.	163	17.4	42	7.2	121	33.9
Not stated	5	0.5	2	0.3	3	0.8
Primary Stds. 1-8.	437	46.6	397	68.3	40	11.2
Secondary Forms I-IV.	66	7.0	55	9.5	11	3.1
High School Forms V-VI.	4	0.4	4	0.7	-	-
University	2	0.2	2	0.3	-	-
Total	938	99.9	581	99.9	357	100.0

males. The dominance of low and lack of formal education has farreaching implications for opportunities in the job market, fixation of remuneration and stabilisation of employed persons. As most parents prefer educating males to females, higher educational attainment by the former than the latter

is by no means surprising. In this study, it may therefore be argued that migration is highly selective of the illiterate or little educated and that high educational attainment is not as important in rural-rural migration as in rural-urban migration.

Apart from the basic migration differentials which are by no means universal or immutable, migration is selective of a host of psychic factors that are more personal than impersonal. While it may be true that rural-urban migrants are more disposed to assume risk than the sedentary population (Browning, 1971 : 211), rural-rural migrants with less competitive qualities may assume even greater risk. This is because, as it were, they have less to lose than the former, their only commodity, labour, being bought cheaply and almost instantaneously. However, risk-taking eludes prediction, for those ranking high in it may remain while the ones ranking low migrate (Browning, 1971 : 292). Risk-taking, at one stage or another, is inevitatble, especially when the totality of environmental perception depicts pessimism out of which the escape route may be migration.

In conclusion to the foregoing, migration differentials operate in varied combinations rather than unilaterally. Changes in their interplay depend on a number of tangible and, sometimes, intangible factors through time and space. Our findings on migration differentials tend to be incompatible with stereotyped findings often relating to rural-urban migration; the very difference between the two streams in itself validates this anomaly.

The extent to which each of these migration differentionals may be proven depends on the analytical instruments at an analyst's disposal. For example, Wolpert (1967) has devised a technique known as AID (Automatic Interaction Detector), as an alternative to further the study of migration differentials. In this scheme, there

is use of an iterative analysis of variance (anova) classification which permits classification of a population into relatively homogeneous group on a continuum from the least to the most migratory. For example, given a number of predictor variables, a group of households may be organised according to similar migration histories and those predictor variables which best define these homogeneous groups. But AID is an elaborate, expensive and still experimental scheme which requires substantial data, heavy computer inputs and empirical application in different areas other than where it may have been used. By the look of its operations, it seems most ideal for census population rather than survey data hence its peripheral relevance to this study.

6.2 MIGRANT CHARACTERISTICS

In the previous section of this chapter the main thrust has been the variables by which migrants tend to be most selected. As already noted, they range from the more easily detected demographic and socio-economic variables to the more intractable psycho-social ones of which migrants are themselves scarcely conscious. Against the previous discussion of migration selectivity, we are better prepared to plunge into analysis of migrant characteristics in the study area. Although this amounts to repeating some of the variables already touched on, the strategy of analysis will be different. Among other things, our analysis will depict the spatial perspective of migrant characteristics within the tea estates complex. Particular attention is given to such demographic characteristics as fertility, mortality and mobility behaviours; and to socio-economic characteristics such as household formation and sizes. No doubt, all these have important implications for migration and population

change, not only in the study area but also in the whole of Western Kenya.

6.2.1 Demographic Characteristics

The question we are trying to answer is, given the respective demographic aspects of migration selectivity, how are migrants distributed within the Kericho tea estates complex? Once again four characteristics, namely, tribal composition, sex distribution, age structure and marital status are examined in answering the question. Besides, the interplay of the components of population dynamics and their impact on demographic trends in the tea complex are also discussed.

(i) Ethnic Pattern

Ethnically, the Nilotic stock who, like the Bantu Luhya, are encountered in all the sample areas, are dominant. The ethnic pattern shows the relative mixture of the seven tribal group categories (Figure 17). Concentration of the Kikuyu within three estates/factories in the African Highlands Produce and one estate cum factory in the Brooke Bond Liebig group suggests the gravitational tendency of chain migration whereby, as the saying goes, "birds of the same feather flock together". A striking feature is the dominance of the Luo and the Gusii within Brooke Bond Liebig Kenya establishments. Similarly, the Luhya, the Kuria, the Kalenjin and others are more dominant in African Highlands Produce units. Although the Luo dominate in the entire area, in all units but Tagabi in BBLK and in half of the units in AHP, there is a better tribal mixture (Table VI.5). This feature cannot wholly be attributed to selectivity of the tribal groups by the estates/factories. Rather, it is partly due to the settler-farmers' policy which regulated settlement of a given tribal group in a given area in order, so they

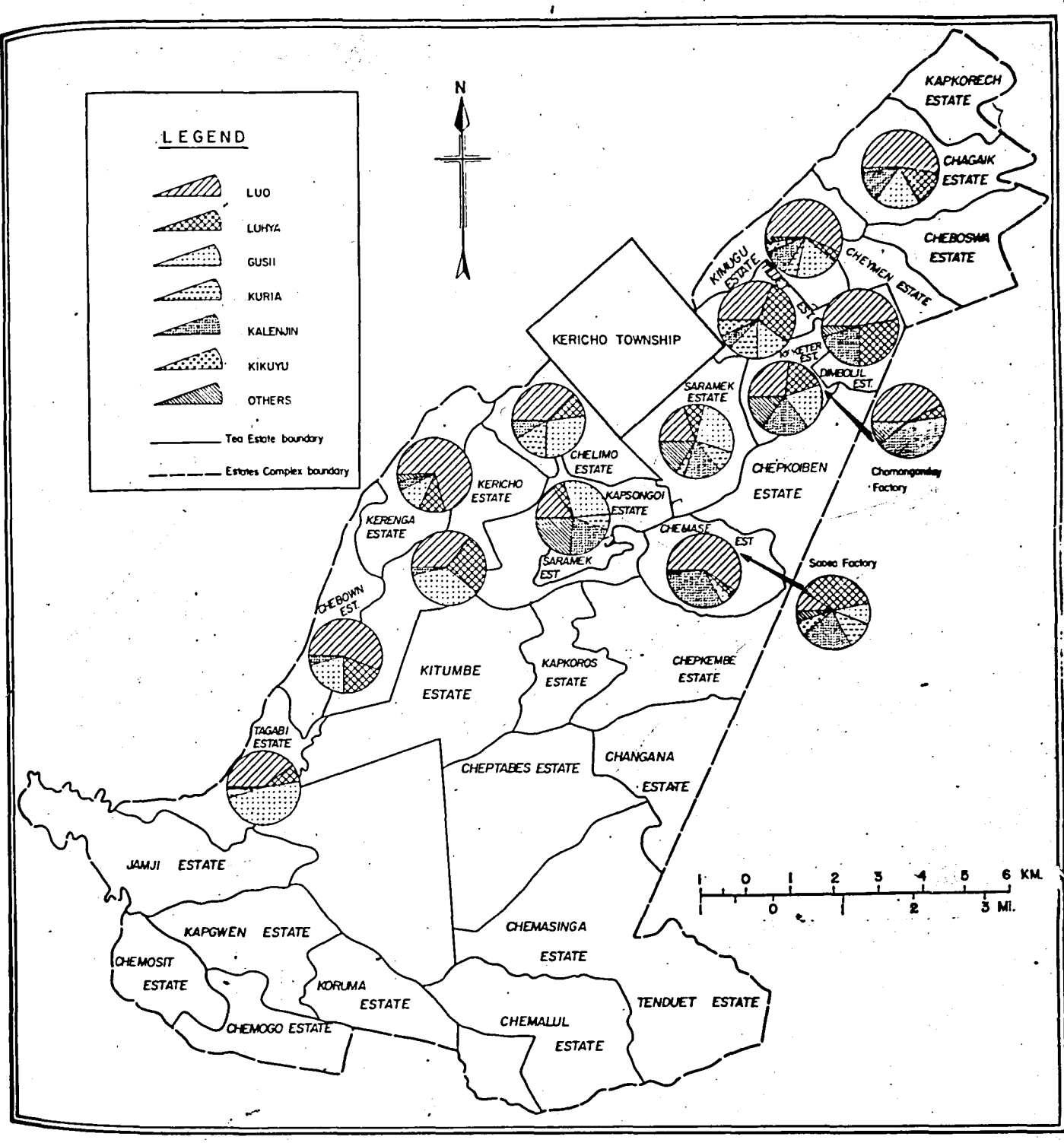


Fig. 17 ETHNIC PATTERN OF KERICHO TEA ESTATES COMPLEX

Table VI.5 - Percentage Distribution of the Major Tribal Groups in Kericho Tea Estates Complex by Sample Area.

Sample Area	Tribal Group							
	Luo	Luhya	Gusii	Kuria	Kalenjin	Kikuyu	Others	Most Dominant
BBLK	68.6	48.9	69.7	52.9	27.3	40.0	8.3	Luo
Chagaik (EF)	12.5	9.8	9.0	-	8.3	-	2.8	Luo
Kimugu (RF)	16.9	3.8	11.2	17.6	9.1	40.0	2.8	Luo
Chelimo (E)	5.6	4.5	8.5	26.5	3.8	-	-	Luo
Kericho (E)	5.1	11.3	10.1	-	1.5	-	-	Luo
Kerenga (EF)	10.0	4.5	3.2	-	1.5	-	2.8	Luo
Chebown (E)	10.3	10.5	8.0	-	2.3	-	-	Luo
Tagabi (EF)	8.1	4.5	19.7	8.8	0.8	-	-	Gusii
AHP	31.3	51.1	30.3	47.1	72.7	60.0	91.6	Luo
Chomogonday (F)	4.2	1.5	-	-	12.1	-	8.3	Luo
Kipketer (E)	3.2	4.5	4.3	-	6.1	-	11.1	Luo
Dimbolil (E)	4.2	13.5	-	-	9.8	-	5.6	Luhya

Table VI.5 - Continued.

Sample Area	Tribal Group							
	Luo	Luhya	Gusii	Kuria	Kalenjin	Kikuyu	Others	Most Dominant
Saramek (E)	2.9	3.8	8.0	14.7	6.8	20.0	16.7	Gusii
Tiluet (E)	3.9	10.5	3.7	2.9	3.8	20.0	8.5	Luo
Kapsongoi (E)	2.9	3.0	10.6	14.7	11.4	-	33.3	Gusii
Saosa (F)	1.0	12.8	2.1	14.7	7.6	20.0	3.6	Luhya
Chemase (E)	9.1	1.5	1.6	-	15.2	-	2.8	Luo
All Sample Areas	99.9	100.0	100.0	100.0	100.0	100.0	100.0	Luo
	389	133	190	33	133	9	52	

believed, to avoid tribal conflict or African solidarity especially during African nationalism including the Mau Mau emergency. The fashion has become an entrenched practice, indeed an acceptable way of life for the majority of migrants. Finally, there is greater concentration of "others" in AHP, a situation largely attributable to the effect of chain migration.

(ii) Age-Sex Structure

As sex distribution of migrants in the tea estates complex has been discussed time and again, there is no need to consider it here. Emphasis is therefore placed on the age-structure of the migrant population, a feature most crucial for appreciation of other demographic variables as well as trends. But since age is often a notorious variable in demographic analysis, there is need to test its reliability, completeness or otherwise, and whether or not the age structure of the sample reflects a normal age curve. Distinction is here made between raw data presented in the form in which they were collected and calibrated data polished by appropriate demographic techniques.

It has been necessary to determine the extent of "age-heaping" among the enumerated population. By "age heaping" in meant, basically, the tendency for enumerators or respondents to report certain ages at the expense of others; but it is also known as "digit preference" or "digit avoidance" (Shryock, et al., 1975 : 204). Thus some respondents prefer ages ending in 0 and others 9 or 1 and so on. Although this may not affect the quinquennial age interval that is conventional in demographic usage, its cumulative effect may lead to gross errors. These errors may belong to one of the four categories: errors in single years of age; errors in grouped data; reporting of extreme old age; and failure to report age (Shryock, et al., 1975 : 204). In order to determine age heaping

there are three alternative indices that may be used: Whipple's index, Myers' index and the United Nations index. The most useful for our purpose is the Myers' blended method based on:

"The underlying assumption ... that if there are no systematic irregularities in the reporting of age, the 'blended' sum at each terminal digit should be approximately equal to 10 per cent of the total 'blended' population. If the sum at any digit exceeds 10 per cent ... it indicates overselection of ages ending in that digit (digit preference). Conversely, a negative deviation when the sum is less than 10 per cent ... indicates underselection of ages ending in that digit (digit avoidance)" (Stockwell and Wicks, 1974 : 164).

Myers' index computed from census, post-enumeration baseline survey and the Kericho survey data is presented (Table VI.6). For both sexes, the most preferred terminal digit is 0, followed by 8 and 1. Other digits, with the exception of 2 where indifference occurs, are avoided by the enumerated population in the Kericho tea estates complex. In the case of males, 0 again is the most preferred digit followed by 5 and 2, but the last two are preferred very slightly. Females, on the other hand, prefer 8, followed by 0 and both 7 and 9 which exercise tied preference. The picture just portrayed suggests that there is need to ascertain why those terminal digits are preferred relative to the rest, that is, 3, 4 and 6. Comparative analysis of census, baseline and Kericho surveys, although not indicating whether the deviations are either positive or negative, shows successively decreasing estimates of Myers' index. However, the baseline survey, which is more relevant to the present study than the census, estimates digital preference as 0, 5 and 8 for both sexes, 0, 5, 8 and 2 for male population and female

Table VI.6 - Estimates of Digital Preference on Myers' Index and Comparison from Different Data Sources.

Terminat Digit	Male Population		Female Population		Both Sexes		Deviations Index Reported By		
	% Distribution	Deviation from 10.00	% Distribution	Deviation from 10.00	% Distribution	Deviation from 10.00	Census Pop. 1969[a]	Baseline Survey 1973[b]	Kericho Survey 1978-79
0	15.19	5.19	13.46	3.46	14.52	4.52	6.28	4.29	4.52
1	11.84	1.84	9.89	0.11	11.07	1.07	2.84	2.39	1.07
2	10.07	0.07	9.89	0.11	10.00	0.00	0.06	0.14	0.00
3	8.13	1.87	6.59	3.41	7.53	2.47	2.50	0.86	2.47
4	9.19	0.81	4.95	5.05	7.53	2.47	1.70	0.83	2.47
5	10.60	0.60	8.24	1.76	9.68	0.32	2.75	3.26	0.32
6	9.36	0.64	9.89	0.11	9.57	0.43	0.80	1.03	0.43
7	8.48	1.52	10.16	0.16	9.14	0.86	1.94	1.81	0.86
8	7.60	2.40	16.76	6.76	11.18	1.18	1.79	0.80	1.18
9	9.54	0.46	10.16	0.16	9.78	0.22	0.99	1.30	0.22
Total	100.00	15.40	99.99	21.20	100.00	13.54	21.65	16.71	13.54
Indices	$\frac{15.40}{2} = 7.70$		$\frac{21.20}{2} = 10.60$		$\frac{13.54}{2} = 6.77$		$\frac{21.65}{2}$ =10.82	$\frac{16.71}{2}$ = 8.36	$\frac{13.54}{2}$ = 6.77

Table VI.6 Continued.

Sources: [a]Republic of Kenya: 1969 Population Census, Vol. VI: Analytical Report, Table 1.4, p.5.

[b]Republic of Kenya: Demographic Baseline Survey Report 1973, Table II.6, p.17.

Note: The rest are computed from the Kericho survey data.

population separately (Oucho, 1979 : 44). The most avoided digits, as in this study, are 3, 4, 6 and 9. It is tempting to conclude that, notwithstanding differences in demographic and socio-economic attributes of populations encountered in the three respective surveys, there is digital preference for all terminal digits other than 3, 4 and 6.

But a major shortcoming of Myers' index is that, unlike Whipple's and the United Nations indices, it does not indicate the quality of age data. Whipple's index, for instance, shows whether age data are accurate or inaccurate by specified margins. Because of the notoreity of age data it is important either to ascertain their accuracy or otherwise or "smooth" them to give the expected age distribution of any given population. The former is avoided here because it would amount to duplication of what has already been done. In order to avoid the so-called "saw tooth" effect of age errors there are several alternative techniques that may be used: a simple "moving average" which, however, has serious weaknesses; a "smoothing" mathematical formula; and the "freehand graph" method (United Nations, 1956 : 11-13). Only the last two are used, but for specific purposes, the one to correct age errors (Table VI.7) and the other to construct the age-sex pyramid of the enumerated population in the Kericho tea estates complex and illustrate the difference of age curves down from enumerated and graduated data. (Figure 18).

Age errors are "smoothed" for each sex separately or for both sexes together using the following formula:

$$\Sigma = 1/16\ (-S_{-2} + 4\,S_{-1} + 10\,S + 4\,S_{1} - S_{2}) \quad (1)$$

where Σ = the adjusted number of persons in the same five-year group;

S = the reported number of persons in the same five-year group,

S_{-2} and S_{-1} = reported numbers in the two preceding five-year groups, and

S_1 and S_2 = the reported numbers in the two subsequent five-year groups.

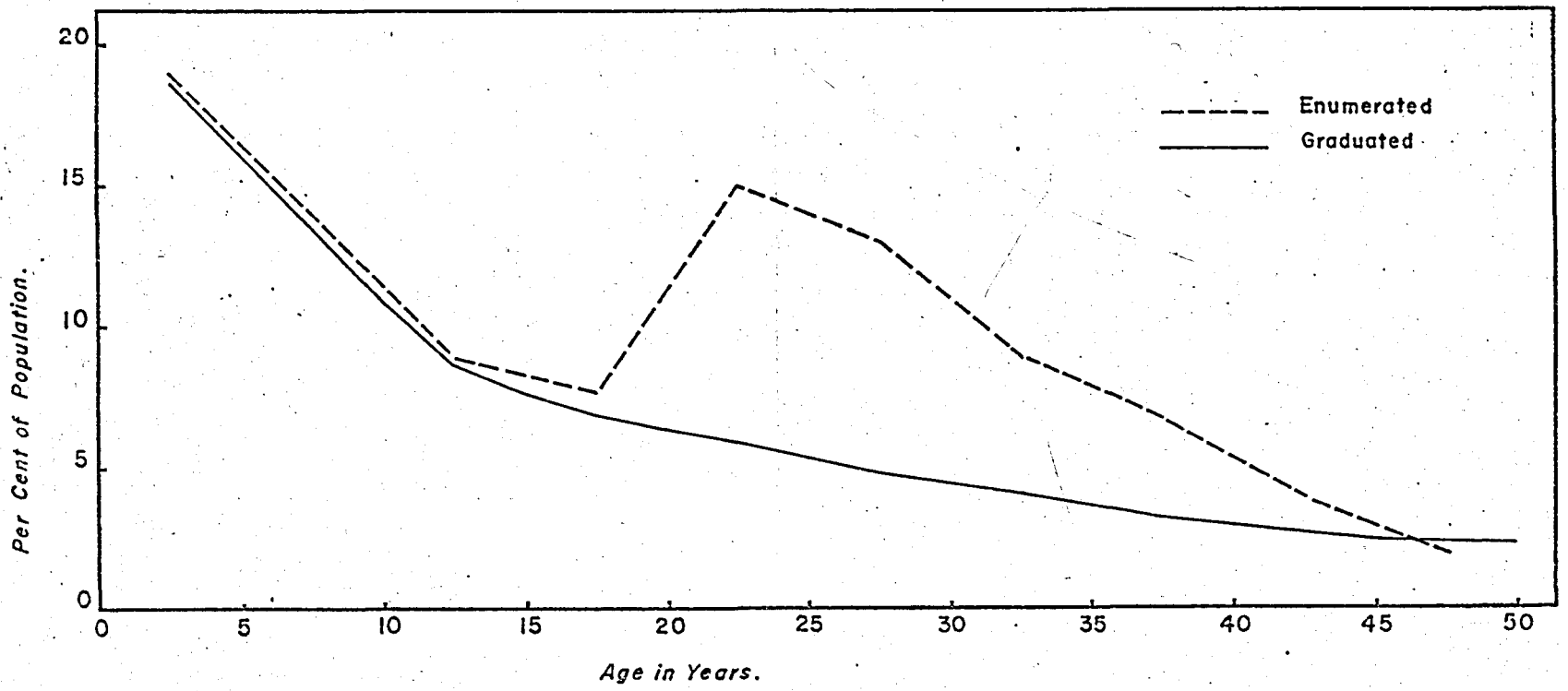
Application of the formula yields the result presented (Table VI.7). Requiring clarification at the outset is the anomaly of population size at certain age-brackets: that population aged 10-14 is smaller than that of the next age-group and that a swelling in the 20-29 age bracket is much bigger than population aged15-19 years. In an area such as Kericho where most children either stay with their mothers back home or are in school elsewhere, the 5-9 years age bracket contracts due to absence of population aged thus. To substantiate, although children born after parents' migration to Kericho constitute 51.7 percent of all children born at the time of and since migration, they tend to stay with their mothers, 56.1 percent of whom live outside Kericho (54.2 percent at home and 1.9 percent elsewhere). The bulge of population aged 20-29 is attributed to the influx of migrant streams into the area as older population decreases due to either death or return migration. Some salient features may now be stated (Table VI.7). First, age understatement is apparent in the ages 10-19 and 30-39 among both sexes; 10-19, and 30-34 among males; and 15-19, 25-29 and 35-39, 30-34 among females. Conversely, age overstatement occurs in the ages 20-29 of both sexes as well as males; 35-39 of males; and 10-24, 20-24 and 30-34 of females. Second and more important, there is no marked difference between enumerated and adjusted populations; and any slight cases of this are more due to the aforesaid age mis-statements as well as sampling errors than to population size.

Table VI.7 - "Smoothing" of Age Data By Sex of Population Enumerated in Kericho Tea Estates Complex, 1978-79.

Age group (Years)	Males		Females		Both Sexes	
	Enumerated Population.	Adjusted Population.	Enumerated Population.	Adjusted Population.	Enumerated Population.	Adjusted Population.
0 - 4	181	-	128	-	309	-
5 - 9	124	-	98	-	222	-
10 - 14	40	44	95	93	135	137
15 - 19	31	53	94	97	125	150
20 - 24	133	115	99	94	232	209
25 - 29	129	103	73	77	202	180
30 - 34	88	97	55	51	143	148
35 - 39	84	79	21	30	105	109
40 - 44	55	-	5	-	60	-
45 - 49	24	-	4	-	28	-
50 +	32	-	2	-	34	-
	921	-	674	-	1,595	-

Note: Children aged 0 - 14 are those reported by mothers and as Table VI.7 shows do not reflect household fertility hence their small size.

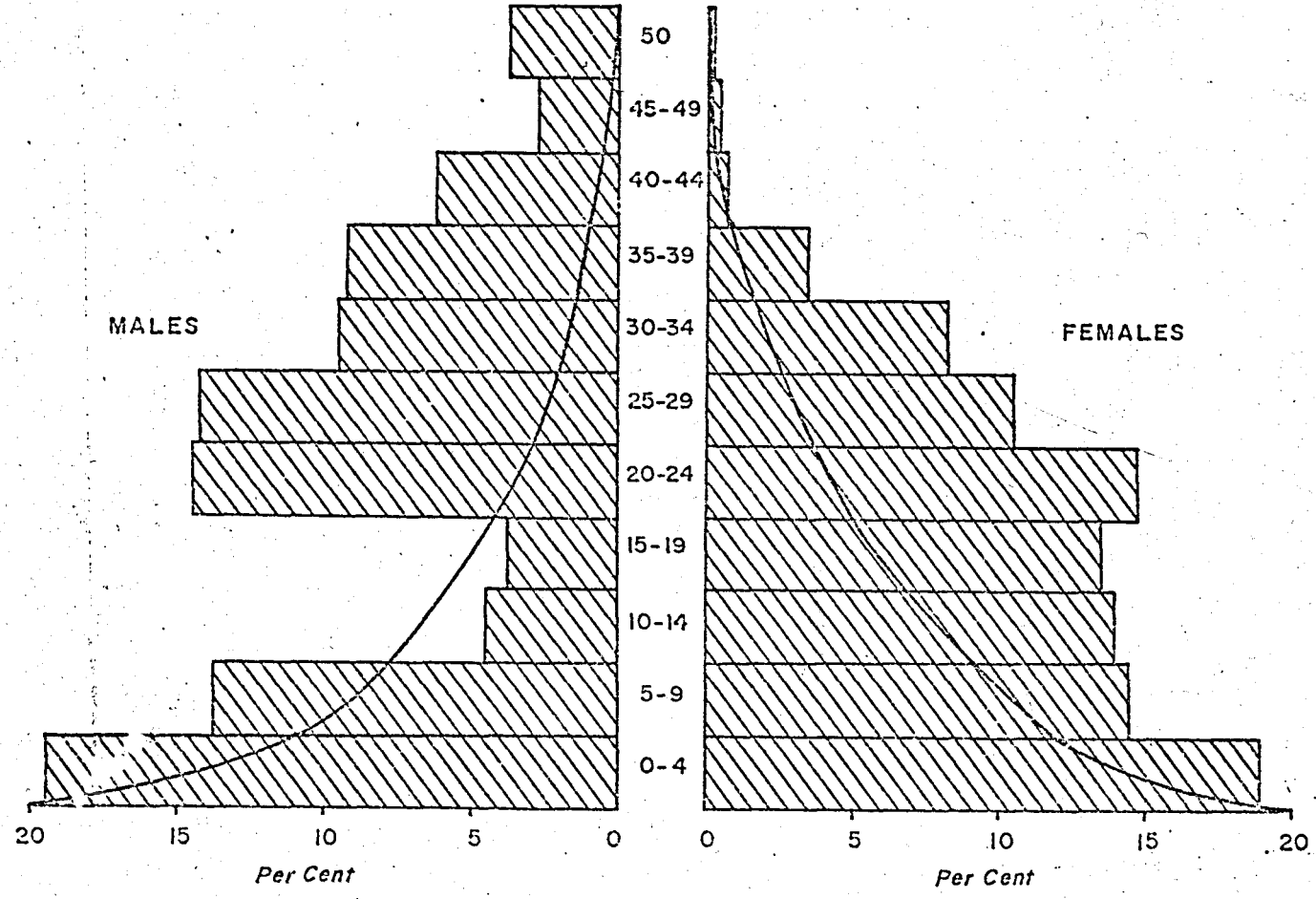
FIGURE.18. AGE CURVE OF ENUMERATED AND GRADUATED POPULATION IN KERICHO TEA ESTATES COMPLEX.



Application of the "free hand graph" method has resulted in the construction of the age-sex pyramid of the populations (Figure 18). Basically, the method involves six stages (i) computing the proportions of all age groups by five-year interval; (ii) plotting the proportions on a line graph, the line generally showing "saw tooth" curve; (iii) drawing a free hand curve that reflects the norm, "smooth" curve; (iv) computing new proportions from the "smoothed" graph and getting the sum of all the new proportions; (v) computing the adjusting factor by dividing the sum of the initial proportions (100 usually or 99.9 percent) by the sum of the new proportions; and (vi) multiplying the enumerated population of each age group by the adjusting factor to get age-specific populations which should add up to the sum of the enumerated population. A cursory examination of the pyramid (Figure 19) shows that the male part of the pyramid is generally unsystematic. Besides, it shows that males predominate in the old ages from 40 years onwards as the population of their female cohorts contracts systematically. The difference may be explained by among other things the fact that while there is a drastic drop in rural-urban migrants aged 30 years onwards, there is a gradual one in rural-rural migrants of the same ages. This curious feature demands more intimate analysis in future comparative studies of the two migrant groups.

In order to test hypothesis (iii), chi square (X^2) test is taken. This hypothesis states that "there are significant demographic and socio-economic differences between rural-rural migrants investigated in this study and rural-urban migrants already investigated in many studies in the country". Given the wide coverage of Rempel, Harris and Todaro's (1970) study of Kenyan eight major urban centres, its data have been used in our analysis. Both age and education, by the far the most dominant demographic

FIGURE.19. AGE-SEX PYRAMID OF ENUMERATED POPULATION IN KERICHO TEA ESTATE COMPLEX.



and socio-economic migrants' characteristics respectively are used to test the following two hypotheses:

First, on age distribution:

H_o' : There is no significant difference in age distribution between rural-rural migrants in this study and rural-urban migrants in Rempel et al's study.

H_1 : There is significant difference in age distribution between the two migrant categories in these studies.

The contrast in the two age distributions is clear in our result (Table VI.8). Since the computed X^2 exceeds the two at both levels of significance (α 0.05 and α 0.01), we reject H_o and accept H_1.

Table VI.8 - Chi Square test for Age Distribution of Migrants in the Kericho Survey and Rempel et al's Survey.

Age group	Kericho Survey		Rempel et al's Survey.		Both
	Observed	Expected	Observed	Expected	
15 - 19	125	177.4	257	204.5	382
20 - 24	232	311.2	438	358.8	670
25 - 29	202	179.8	185	207.2	387
30 - 34	143	106.4	86	122.6	229
35 - 39	105	73.9	54	85.1	159
40 - 49	89	63.2	47	72.8	136
50 +	34	18.1	5	20.9	39
All Age groups	930		1,072		2,002

X^2 = 165.43

df. = 6

Table VI.8: Continued.

α 0.05 = 12.59
α 0.01 = 16.81

Second on educational attainments:

H_o There is no significant difference in educational attainment between rural-rural migrants in this study and rural-urban migrants in Rempel et al's study.

H_1 There is significant difference in educational attainment between the two migrant categories in the two studies.

In this second hypothesis, H_o is again rejected and H_1 accepted (Table VI.9). The two results of the X^2 test

Table VI.9 - Chi Square test for Educational Attainment of Migrants in the Kericho Survey and Rempel et al's Survey.

Educational Attainment	Kericho Survey		Rempel et al's Survey.		Both
	Observed	Expected	Observed	Expected	
No formal education.	121	89.8	136	167.2	257
Primary 1-8	397	371.3	666	591.7	1063
Secondary 1-6	59	116.0	273	216.0	332
Total	577		1,075		1652

X^2 = 70.82
d.f = 2
α 0.05 = 5.99
α 0.01 = 9.21

suggest that, ceteris paribus, both age and education of the two migrant categories are in sharp contrast. This leads to accepting hypothesis (iii), a curious finding for subsequent comparative rural-rural and rural-urban migration studies. Acceptance of H_1 in both cases rationalises our acceptance of the main hypothesis tested here.

(iii) Marital Status

The fact that the majority of migrants in the Kericho tea estates complex are married raises the question as to whether married couples migrated separately or there was "split" migration[4]. A plausible explanation of the predominance of married heads of household is that, once offered employment, they are readily provided with housing and their food subsidised. In the entire sample, 69.2 percent initially stayed with friends at the onset of migration, which explains why, at the material time, only 41.4 per cent of all married females (including those married while in Kericho) migrated together with their husbands. Thus split migration, generally typical of married couples, is confirmed in this study; and it might have farreaching implications for fertility trends among couples especially where the heads of household fail to acquire housing immediately.

(iv) Population Dynamics of the Migrants

The three components of population dynamics, namely, fertility, mortality and migration are mainly responsible for population composition by variables already discussed and population change in a given time-scale. Indeed, they have given the tea estates complex its demographic structure as well as trends which persist or change depending on their interplay.

(a) Fertility Situation

Fertility is a most sensitive item to elicit information about in retrospective surveys (Brass, et al. 1968). In most African Societies it is more to be taken for what it is than reviewed, not least with a view to reducing it. The general situation is that increasing fertility, cancelled inappreciably by rapidly declining mortality is responsible for rapid population growth in Kenya, now deemed to have one of the highest growth rates in the world[5]. Fertility data used in this study were retrospective and thus might be pregnant with errors, such as memory lapse, age reporting, double reporting of children staying in Kericho, home or elsewhere; and a host of other errors. However, this is expected of any enumeration and does not in any way invalidate the data. Some fertility indices are computed to explain certain characteristics of fertility behaviour of the population.

Perhaps the most crude measure for our purpose is the child-woman ratio (CWR) computed by the following formula:

$$CWR = \frac{P_{0-4}}{f_{15-49}} \cdot k \qquad (2)$$

where P_{0-4} = the number of children under 5 years old,

f_{15-19} = the number of women in the reproductive ages, and k = a constant, usually 1,000.

Given that there are 309 children aged 0-4 years and 351 women aged 15-49 years, the computed child-woman ratio, by substitution, is 880 per 1,000 (Table VI.7). This ratio is lower than both the national one (900 per 1,000) and that for Western Kenya (924 per 1,000) computed in 1969 from census data[6]. After trying out various methods of computing the total fertility rate, it was found that the Coale-Demeny method works best with the data. In this

method, the total fertility rate, F, is expressed by the following formula:

$$F = \frac{P_3^2}{P_2} \qquad (3)$$

where P_3^2 is the square of the mean number of children ever born to women in the third age group (25-29 years), and P_2 is the mean number of children ever born to women in the second age group (20-24 years). Substituting with data (in Table V.10), the computed total fertility rate is 5.00 children per woman. That reported births assume a decreasing trend from the age group 35-39 years onwards is rather anomalous. But in a situation where women are generally illiterate and often forget to include their older children who may be living elsewhere, this feature has to be expected. Age-specific mean births are expectedly low in the first two age groups but rise in the 25-34 years age bracket following the peak of fertility in these reproductive years. The greatest problem encountered in fertility reporting by mothers, another

Table V.10 - Age-Specific Mean Number of Births in Kericho Tea Estates Complex.

(1) Age of Women	(2) Number of Women	(3) Total Number of Births	(4) Mean Number of Births (3)
15-19	94	59	0.63
20-24	99	148	1.49
25-29	73	199	2.73
30-34	55	186	3.38
35-39	21	63	3.00
40-44	5	8	1.60
45-49	4	6	1.50

plausible source of error, is their mixture of both "retrospective" and "current" fertility. This was a weakness of the questionnaire which asked for retrospective rather than current fertility information.

(b) Mortality Situation

Mortality is even more difficult to determine from retrospective data. To many households in which it has been experienced, investigating it is like opening the old wounds which are supposed to have healed. Scanty mortality data were therefore collected particularly on children. However, the picture of crude mortality experience among different age groups of mothers is presented (Table VI.11). With the exception of the 25-29 years age group, mean child mortality increases in direct proportion with the age of women. It represents the theoretical regular and linear probability of dying which many empirical mortality studies have affirmed. In the last column of

Table VI.11 - Proportions of Child Mortality by Age group of Mother in Kericho Tea Estates Complex.

Age group (years)	Number of Women	Total Number of Deaths	Mean Death per Mother	Ratio of Mean Deaths to Mean Births.
15-19	94	12	0.13	0.206
20-24	99	37	0.37	0.248
25-29	73	26	0.36	0.132
30-34	55	32	0.58	0.172
35-39	21	13	0.62	0.207
40-44	5	5	1.00	0.625
45-49	4	7	1.75	1.167

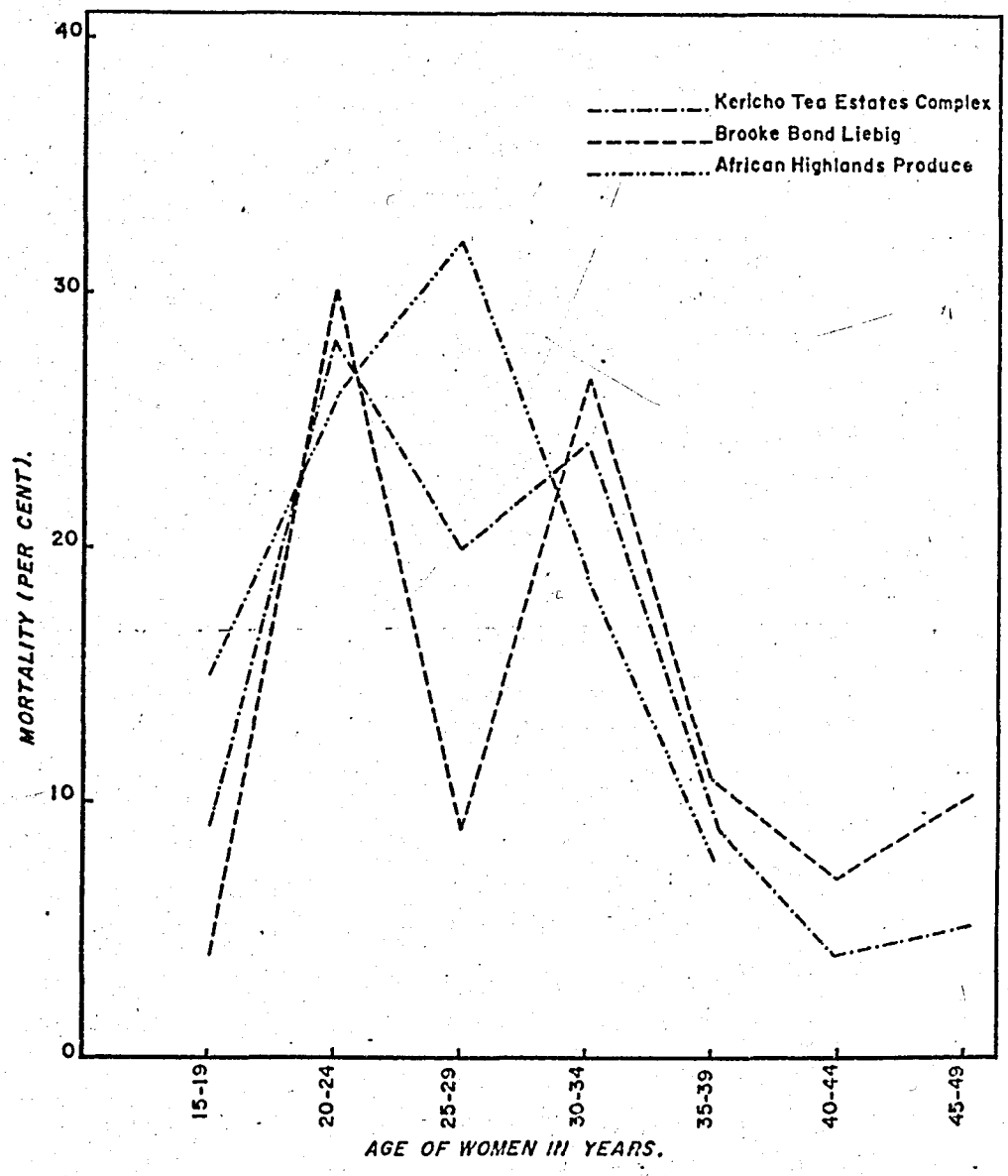
Table VI.11, the ratio of mean deaths to mean births at different age groups of women is generally irregular. This irregularity is attributable among other things to incomplete reporting of deaths in the African Highlands Produce sample areas and to the anomalous mean births already referred to. Also presented is a more crystallised picture of reported child mortality in the whole tea estates complex as well as its two components (Figure 20). A striking feature is the relative similarity between mortality curves for the whole tea estates complex and the Brooke Bond Liebig group. Rising mortality is bi-peaked at women's age groups 20-24 and 30-34 years respectively; but it ebbs at 25-29 and 35-39 years respectively. This feature arouses curiosity as a distortion probably rendered by memory lapse of mothers, non-reporting of deaths or non-response to an item that opens old wounds which had healed sometimes back.

The fertility - mortality relationship enunciated in the foregoing enalysis seems to have a strong influence on the will of mothers to have more or no children. Computation of the product moment correlation of the age of women population with their will to have more children gives a correlation coefficient of - .946. This suggests a very strong negative relationship between the two, and suggests further that the will to have more children decreases with age as fertility increases correspondingly.

(c) Mobility Behaviour of the Population

Human mobility is a continuous process involving an intricate network of movements back and forth in a spatio-temporal perspective. Migrants in Kericho may or may not have made other movements in the past, are currently involved in yet others and are likely to continue to do so in future.

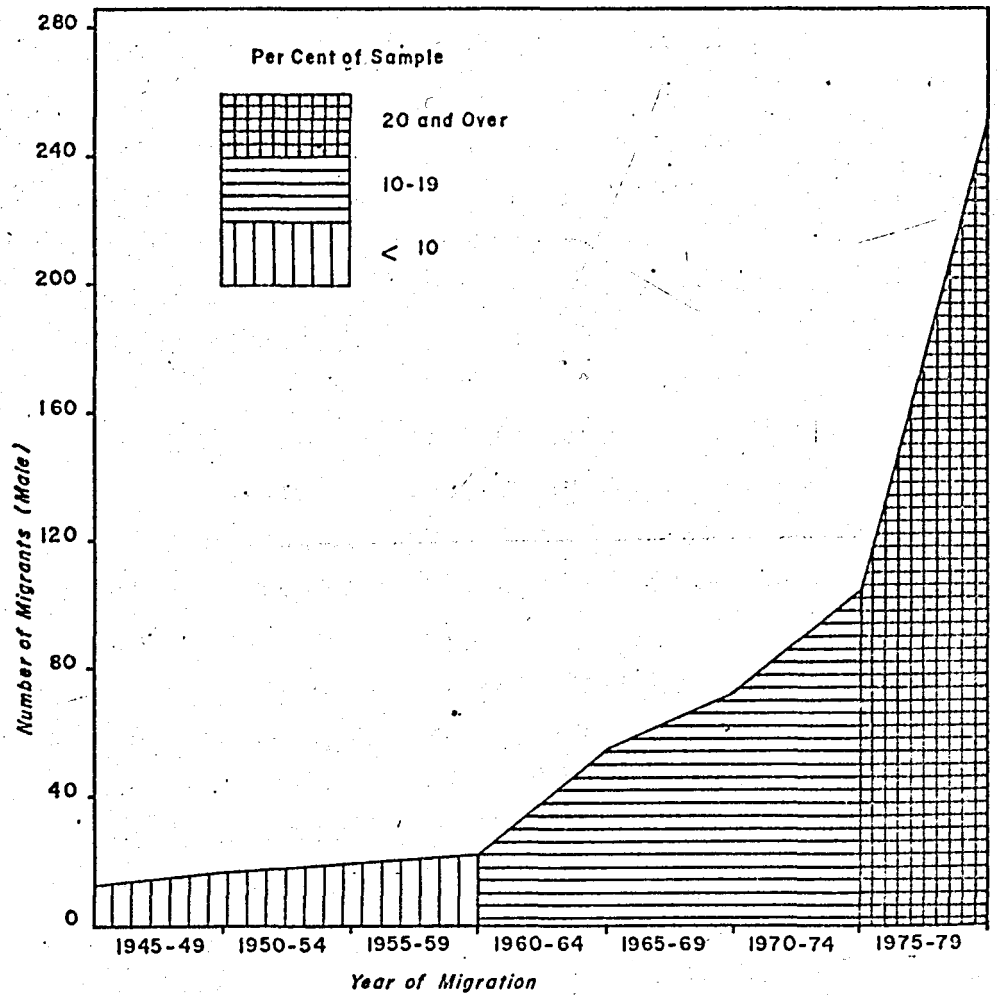
Fig.20. REPORTED CHILDHOOD MORTALITY AMONG CHILDBEARING WOMEN IN KERICHO.



The first thing is to get an insight into mobility trends before and since World War II, emphasis being placed on the latter which has been the period of expansion in all facets of economic life in Kenya. The bulk of migrants have moved into Kericho over the last five years to the time of completion of the survey in 1979 (Figure 21). These constitute 34.0 percent of the total male sample or 89.9 percent of those who migrated into the area during the period in question. The first post-war decade was one of relatively insignificant in-migration. But at the turn of the 1960s a leap-frog in-migration trend was set in motion and continued unabated to the close of the last decade.

A most curious fact is whether the migrants encountered in the sample had any previous mobility experience prior to their moving to Kericho. Responses to this question indicate that of 418 (71.5 percent of all males) migrants who reported their movements over the last five years, 58.6 percent had been involved in rural-urban migration. This suggests that more than half had probably migrated to Kericho after failing to get employment in some urban areas. It also corroborates the assumption that as urban unemployment worsens, rural economic islands such as the study area become the obvious second-rate destination. It is apparent that as, Todaro holds, notwithstanding some weaknesses of his rural-urban migration model, the contemporary dilemma is one in which "redundant" or "surplus" rural labour force cannot be absorbed in the growing urban-based industrial economy (Todaro, 1971). That newer migrants in Kericho are becoming increasingly better educated is consistent with the notion that, after urban unemployment especially experienced by school-leavers, places like Kericho are the next most logical destination.

FIGURE.21. GROWTH OF MIGRANT POPULATION IN THE KERICHO TEA ESTATES COMPLEX. 1945-1979.



Periodic spurts of mobility since moving to Kericho were investigated in the context of both permanent domicile and future migration plans for which they have important implications. A plausible hypothesis runs like this: circular migration is inevitable because migrants, having both property and relatives/friends at their permanent domicile, make periodic visits there and, will ultimately, return there. Evidence is forthcoming from the data which render this hypothesis acceptable. A sizeable proportion (83.6 percent of the total) of migrants have made visits home since migrating to Kericho; 83.0 percent alone have farms among other property at home; and 94.0 percent make the visits as and when opportunities exist: 42.5 percent of the total male sample during the holidays, 27.8 percent on month end, 20.7 percent on various occasions and 8.9 percent every weekend. Even without rigorous testing, the hypothesis is acceptable at varying levels of significance.

Anticipated migration network in the future was also investigated to determine migrants' terminal mobility aspirations after their sojourn to the Kericho tea estates complex (Table VI.12). Out of 506 males reporting their future migration plans, 422 (83.4 percent) stated specific plans. Those expecting to return home constitute 28.6 percent of the entire males reporting their plans or just over one-third of specified anticipated moves. Conversely, those intending to stay in Kericho permanently account for a mere 3.2 percent of all respondents. That 80.2 percent of male migrants are sure of moving out of the tea estates complex, with the majority returning to their permanent domicile, underlines the circular nature of this migration process. Of 137 reporting their movement elsehwere, 61.3 percent expect to be involved in rural-urban migration. This seems to suggest step-migration of which this rural-rural migration is an earlier stage; and the dominance here of the 20-24

years age-group explains the propensity of youth to migrate to urban destinations. The category of migrants expecting to return home is dominated by the 30-34 years age group, a feature suggestive of stock-taking of accomplished and projected movements at the middle age.

6.2.2. Some indices of Socio-Economic Attributes

In discussing migration differentials, it was seen that education and economic activity are among the most important attributes of migrants. Some indices are derived from education and economic status data to explain this further.

(i) Educational Output

The term "education" has certain overtones which render its connotation ambiguous. In the sense used here, it denotes formal attainment of school-based literacy and numeracy from the barest minimum to subsequent higher levels. This raises questions about literacy, especially where it is defined as "the ability of one to read and write with understanding, a short simple statement on one's everyday life" (United Nations 1970 : 50; Shryock, et al.; 1975 : 325). Distinction is made between illiterate and literate recipients of "none" education (Table VI.4). Whereas the former applies to the statement just made, the latter, as in the case of some Muslims, for example, can read those scripts with which they are familiar but fail to be articulate in other literals or numerals; and some become literate in the process of self-tuition.

The crude illiteracy rate (CIR) is therefore a useful index of educational attainment. It is expressed as:

$$CIR = \frac{I}{p} \times 100 \qquad (4)$$

Table VI.12 - Reported Future Migration Plans of Male Migrants in Kericho Tea Estates Complex by Age group (Percent).

	Future Migration Plans						
	Total Respondents.	Stay in Kericho on Service.	Stay in Kericho Permanently.	Move elsewhere (Rural-Rural)	Move elsewhere (Rural-Urban)	Return Home.	Uncertain
15-19	12	1.6	6.3	1.9	3.6	1.4	3.6
20-24	104	15.3	18.7	26.4	23.8	20.7	21.4
25-29	120	30.6	25.0	15.1	21.4	20.0	27.3
30-34	90	14.5	12.5	11.3	16.7	23.4	19.0
35-39	78	15.3	18.7	20.8	19.0	12.4	13.1
40.44	46	8.9	6.3	7.5	9.5	10.3	8.3
45-49	24	7.3	-	9.4	-	4.1	4.8
50-54	22	3.2	12.5	3.8	4.8	6.2	1.2
55-59	7	2.4	-	1.9	1.2	1.4	-
60+	3	0.8	-	1.9	-	-	1.2
All Age groups	506	99.9	100.0	100.0	100.0	99.9	99.9
N =		124	16	53	84	145	84

where I = Number of illiterates in population covered,

$\bar{p}$ = Population covered.

Using data on Table VI.4, the crude illiteracy rate for the whole tea complex is equivalent to the proportion indicated on the table but 27.6 for the whole sample and 16.4 for the enumerated population of households. This low index is better explained by the age-specific illiteracy rate (ASIR), expressed as follows:

$$ASIR = \frac{I_a}{p_a} \cdot X\ 100 \quad (5)$$

where I_a = Number of illiterates in age group a

p_a = Population in age group a

Illiteracy rates are higher among females than males, a situation already rationalised in our analysis; they are at their highest in the 35-39 age group (Table VI.13). Males on the other hand, have very low age-specific illiteracy rates. All in all, illiterates among both sexes account for less than one-third of respective age groups, this attributable to the dominance of literates without initial formal education as well as primary education graduates.

(ii) Economic Status and Activity

Given the relative homogeneity of the category of migrants encountered in the tea estates complex, there is considerable uniformity in their economic activity as well as status. But this feature does not obtain among females, a substantial proportion of whom are engaged in domestic and therefore economically unquantifiable activity. Both the proportion of economic activity and dependency ratio of migrants underscore the significance of their economic participation (Table VI.14). More than two thirds of males, over half of females and close

Table VI.13 - Illiteracy Rates By Sex and Age for Migrants in Kericho Tea Estates Complex

Age group (years)	Both Sexes			Male			Female		
	Total	Illiterate		Total	Illiterate		Total	Illiterate	
		Number	Percent		Number	Percent		Number	Percent
15-19	125	40	32.0	31	3	9.7	94	37	39.4
20-24	232	48	20.7	133	6	4.5	99	42	42.4
25-29	202	38	18.8	129	14	10.9	73	24	32.9
30-34	143	38	26.6	88	12	13.7	55	26	47.3
35-39	105	30	28.6	84	14	16.7	21	16	76.2
40-44	60	10	16.7	55	10	18.8	5	-	-
45-49	28	6	21.4	24	6	25.0	4	-	-
50+	34	10	29.4	32	10	31.3	2	-	-

Table VI.14 - Economic Activity and Dependency Ratio of Migrants in Kericho Tea Estates Complex by Sex.

Category	Sex		
	Males	Females	Both Sexes
Economically Active	62.6	52.4	58.1
Economically Inactive	37.4	47.6	41.9
Dependency Ratio*	60	91	73

*Expressed as $\frac{P_0 - P_{14} + > P_{60}}{P_{15-59}}$, here denoting percentage.

to 60 percent of both sexes are economically active, in Kenya deemed as aged 15-59 years. A substantial proportion of economically inactive population consists of children aged 0-14 years; and those aged 60 or more years are insignificant, females being conspicuously absent in these older ages. Consequently, the dependency ratio is very low; but that of females, for reasons already stated, exceeds the male dependency ratio. This feature suggests that most heads of households are economically active and that the dependent population does not pose problems typical of urban in-migration areas. It explains partially why the rate of out-migration is directly proportional to dependency ratio in the Western Kenya Districts: in 1978 estimated as 127 in Kisii, 119 in Kakamega, 112 in Siaya and 108 in South Nyanza[7]. These high dependency ratios have detrimental effect on the underdeveloped rural economy of Western Kenya because they suggest considerable burden shouldered by the working-age population.

Two features of economic activity may explain conditions that exist in the Kericho tea estates complex, based on information provided by the two tea companies.

In the Brooke Bond Liebig Kenya sub-complex, out of 13,190 persons engaged as at the end of February, 1979 under the unemployment relief scheme, 86.2 percent alone were employed within the field department and the rest in the factories which are less labour-intensive. In both units, a substantial majority of those employed were citizens, non-citizens accounting for a mere 0.05 percent of the total. Disaggregated by occupational category, the majority (83.2 percent) were regular unskilled workers with which the study has been concerned; but casual employees were predominantly females. This suggests that the costs accruing to the labour-intensiveness in the tea industry are offset by engaging more casual than regular workers, especially in the tea-picking process. That most migrants often stay in the tea estates complex for relatively short periods is evidenced by records kept by the African Highlands Produce Company. Of the 2680 employees reported in the employ of the company, 1,337 (49.9 percent) alone have been employed for a period under 1 year, 34.6 percent for 1-5 years; and only 15.5 percent for 5 or more years [8]. In the light of this, it is tempting to argue that perhaps because of their unskilled nature, migrants in the tea estates complex are rather unstable, constantly looking for "greener pastures" elsewhere in the employment market.

(iii) Household Characteristics

Although household as the unit of our survey has been mentioned repeatedly in previous chapters, its general characteristics have not been considered more intimately. It is now appropriate to do so briefly. Among 585 males in the sample, 88.9 percent alone were heads of household to whom the rest were related in proportions shown in brackets: friends (4.4 percent), brothers/sisters (2.7 percent), children (0.3 percent)

and spouses (0.2 percent); and the rest 3.4 percent comprised those with no relation and those who withheld their response to the question. The insignificance of spouses and children of heads of household partly explains the small household sizes and the shortage of children in the area. That two closest relatives live away from the tea estates complex has been discussed before, and implies the divided responsibilities of household heads. Since most migrants' spouses and parents stay at the permanent domicile, it becomes obvious why household heads intend to return to them at the end of their sojourn in the tea estates complex.

To conclude this chapter two hypotheses relating to rural-rural migration vis-a-vis rural-urban migration and three others concerning migrant characteristics as well as migration selectivity may now be considered. First, hypothesis (iii) is accepted because demographic and socio-economic characteristics of rural-rural migrants in this study differ markedly from those of rural-urban migrants hence several refutations of findings by rural-urban migration studies. In three different countries, Colombia, Brazil and Liberia, rural-rural migration is as selective of the illiterate poor as rural-urban migration is of better educated persons [9]. Second, that the most important aspect of future migration plans of migrants expecting to move elsewhere other than home involves rural-urban migration renders acceptable hypothesis (iv). This hypothesis, stating that rural-rural migration is an important prelude to stepwise migration, is tested using X^2 test at the following two stages.

First, testing whether or not a significant difference, on tribal basis, exists between staying intact in Kericho or moving elsewhere involves the following hypothesis (Table VI.15):

H_o : There is no significant difference between staying in Kericho and moving elsewhere.

H_1 : There is significant difference between staying in Kericho and moving elsewhere.

Table VI.15 - Chi-Square test for Migrants' Staying in Kericho and Moving Elsewhere by Tribal Group.

Tribal Group	Future Migration Plan				
	Staying in Kericho[a]		Moving Elsewhere[b]		Total
	Observed	Expected	Observed	Expected	
Luo	93	79.1	58	71.8	151
Luhya	19	26.2	31	23.8	50
Gusii	41	34.6	25	31.4	66
Kuria	30	21.5	11	19.5	41
Kalenjin	42	60.3	73	54.7	115
Kikuyu	0	1.6	3	1.4	3
Other	15	16.8	17	15.2	32
All Tribal Groups	240		218		458

Notes: a. Staying permanently/temporarily.
b. Including rural-rural, rural-urban and return migrants.

$X^2 = 34.28$

d.f. = 6

α 0.05 = 12.59

α 0.01 = 16.81

Since the computed X^2 exceeds the two at both levels of significance, H_o is rejected and H_1 accepted.

Second, it is necessary to test whether any significant difference exists between anticipated rural-rural and rural-urban migration. Using X^2 test the following hypothesis is tested (Table VI.16):

H_o : There is no significant difference between anticipated rural-rural and rural-urban migration.

H_1 : There is significant difference between the anticipated two migration streams.

Table VI.16 - Chi-Square test for Anticipated Rural-Rural and Rural-Urban Migration by Tribal Group.

Tribal Group	Future Migration Plan				Total
	Rural-Rural		Rural-Urban		
	Observed	Expected	Observed	Expected	
Luo	11	19.4	23	14.6	34
Luhya	18	18.8	15	14.2	33
Gusii	13	9.7	4	7.3	17
Kuria	6	3.4	0	2.6	6
Kalenjin	38	31.9	18	24.1	56
Kikuyu	0	1.1	2	0.9	2
Others	4	5.7	6	4.3	10
All Tribal Groups	90		68		158

X^2 = 22.04
d.f. = 6
α 0.05 = 12.59
α 0.01 = 16.81

On the basis of the result of the test, we reject H_o and accept H_1, indicating that there is significant difference between

the two anticipated moves. From the foregoing analysis of migrant characteristics and anticipated stepwise migration, in which hypotheses (iii), (iv), and (vi) have been accepted, contasting features of rural-rural migration and rural-urban movement may be ascertained. It is therefore necessary to caution students of migration to desist from jumping into the band-wagon of stereotyped findings which, emanating from the latter, should always be investigated.

NOTES:

1. The Kalenjin group have been drawn into economically inspired migrations more recently than their neighbours, such as the Luo and the Luhya, for instance. For an appreciation of this, see Kosgei (1979) and archival material (KNA/DC/KER/1/3/1928).

2. Quoted in Bouvier, Macisco and Zarate (1976). Also see Bogue (1969).

3. This sentiment is attributed to the tea estates officials with whom the researcher held verbal discussions on the issue. Even up till now, very little attempt has been made to redistribute tribal groups and thereby attain tribal mixture. But in the newer estates the policy has been changed in favour of the latter option.

4. "Split migration" has been found to be an important feature of a rural-urban migration survey; and therefore seems to obtain in the two dominant forms of internal migration in Kenya, See Oucho (1974 : 87).

5. It must be pointed out, however, that there exists a controversy between planners/policy makers and researchers about population growth rates in the developing countries. In Kenya, for instance, while researchers compute the provisional growth rate from 1979 census (provisional figures) as 3.4 percent per annum, government and family planning circles come up with a staggering rate of 4 percent or more.

6. It has been noted that the higher the rate of child and infant mortality, the greater the tendency for child-woman ratios to underestimate the true fertility level. For detailed analysis of this, see Bogue (1971).

7. For a detailed analysis of demographic trends in Kenya based on 1969 census as well as post-enumeration surveys (1973 - 1978), see Henin (1979).

8. This information was procured from the latest records of the employment situation in the two tea companies in the study area: from returns made to the Ministry of Labour unemployment relief records and office records.

9. Several studies analyse this contradiction, Lipton (1980 : 5), being a case in point. Studies on Colombia (Haney, 1965), Brazil (Sahota, 1968) and Liberia (Riddell, 1970) also testify this.

CHAPTER VII

CHAPTER VII

CONSEQUENCES OF MIGRATION AND POPULATION CHANGE

In the previous chapters the methodological framework, nature and determinants of the migration process under study have been discussed. As a corollary to the latter, the present chapter explores the consequences of migration and some aspects of population change in Western Kenya. It needs to be reiterated that Western Kenya is a relatively underdeveloped region with great potential where migration has farreaching consequences. Indeed, as the first region in the country to have attracted agricultural and demographic studies[1], it has persistently lurked in the orbit of continued research and study, now coming to closer grips with development potential than ever before. For example, longstanding conceptualisation of Western Kenya as a "development region" echoed by Waller et al. (1968) and Ogendo (1967), among others, has culminated in its promulgation as the Lake Basin Development Authority (LBDA), already discussed in the opening chapter. This chapter analyses two main issues: the dualist perspective of the dynamics of population change and the consequences of migration in Western Kenya. Particular emphasis is placed on the implications of these two issues for rural transformation in the area.

7.1 DUALISTIC PERSPECTIVE OF THE CONSEQUENCES OF MIGRATION

The consequences of migration, operating both at the origin and the destination of migration streams, are demographic as well as socio-economic. Underscored here is the fact that migration, being a dynamic phenomenon, continues to redistribute population thereby exerting changing influence at both losing and gaining areas.

7.1.1 Consequences in the Source Areas of Migration

Delineation of migration source areas has already been made in Chapter IV dealing with migration field. Analysis of important demographic and socio-economic attributes of "residual" population in these areas will portray a crude picture of some consequences of migration. The present analysis, however, differs from the one relating to migration selectivity discussed in the previous chapter.

On the aggrégate, the selective nature of migration suggests that its demographic consequences are inimical to the development of out-migration areas in Western Kenya Districts. The case of sex ratio of migrant vis-a-vis residual population verifies this (Table VII.1). Perhaps the most striking feature is the substantial difference of sex ratio between the two population categories. This evidences high masculinity in the survey area compared to high femininity in Western Kenya Districts. Even from the more complete census data, only Kericho District does not lose male population relative to other districts which are disadvantaged in this respect. Added to this is the fact that migrants are a lot younger than the residual population, the most migratory age bracket being 20-29 years old (see Table VI.7 and Figure 19). Demographic characteristics of the residual population are, therefore, deficient of the most development conscious population: female dominance underlines the problem of absentee heads of household; mature and aging population, again predominantly female, who are impervious to innovative ideas; and what Houghton (1960) terms, "men of two worlds", conveniently "separated" from their spouses resident in the source areas. The problem of female dominance in rural Kenya has become an increasingly important research topic in recent years[2]. Yet its demographic as well as socio-economic implications have hardly featured on the threshold of migration research

Table VII.1 - Sex Ratio of Migrant Population in Kericho Tea Estates Complex and Western Kenya Districts by District, 1979.

District	Sex Ratio			
	Migrant Population 1979[a]	Residual Population 1979[b]	Difference	Population Category favoured.
Kisii	165	95	70	M
Kisumu	69	97	28	R
Siaya	112	82	30	M
South Nyanza	119	94	15	M
Bungoma	200	96	104	M
Busia	267	88	179	M
Kakamega	176	90	86	M
Kericho	241	104	137	M

M = Migrant population; R = Residual Population

Sources: a Primary survey data used in this study (see Table IV.1).

b Computed from district populations reported in 1979 census.

resulting in delicate academic conjecture. Okeyo, on identifying research priorities on women in Africa, hypothesizes among others that "male labour (out) migration creates changing social structures and leads to sex role restructuring, psychological stress on women, female-headed households, and changes in household decision-making patterns" (Okeyo, 1979 : 403). Decennial change of sex ratio in the last intercensal period (1969-1979) shows a decrease in all Western Kenya districts: Kisii (- 6.0),

Kisumu (- 6.2), Siaya (- 1.4), South Nyanza (- 4.7), Bungoma (- 1.1), Busia (- 1.4), Kakamega (- 2.0) and Kericho (- 3.2). A plausible cause of this trend is increased out-migration from Western Kenya. As the female population are forced by circumstances to assume men's longstanding traditional roles pertaining to family welfare besides performing their immense household responsibilities, there is considerable challenge to them as catalysts of rural development. Also, given that the residual population is devoid of the economically active population, either in school or migrated elsewhere in the region or parts of the country, the older, generally unskilled population, tend to perpetuate old-age modes of economy, leaving little room for innovations. This partially explains why the traditional economy which supports the residual population has generally stagnated at the expense of in-migration modern farming areas such as the tea estates complex.

Socio-economic consequences of out-migration are equally detrimental to development programmes envisaged in rural areas. Both educational attainment and economic activity of migrants vis-a-vis stayers are instructive indices that may reinforce this assertion. That education is among the most significant migration differentials, more positively correlated with rural-urban than rural-rural migration, suggests denudation of educated persons from out-migration areas. Analysis of this fact in the context of the LBDA cautions that the tendency for highly educated population to migrate outside the Lake Basin demonstrates that investment in education and, subsequently, manpower is wasted because that manpower only benefits other regions of the country (Oucho, 1979c: 21). The notion that Western Kenya ranks highest among those regions of Kenya with high educational attainment holds only in so far as de jure population is considered; the de facto population, often reported in censuses, in fact exhibitsthe converse of this norm. As regards economic activity, Western Kenya has for

a long time been the preserve of subsistence agriculture, only recently moving into commercial agro-industrial activity. In 1969, Western Province had a high dependency ratio of 136.5 compared to Nyanza Province's 120.4. But the figures shown in brackets show the district disparities: Kisii (143.8), Kakamega (140.7), Bungoma (134.1), Busia (125.1), Kericho (124.8), Siaya (119.7), South Nyanza (113.8) and Kisumu (99.1). Spearman's rank correlation between the district population size and dependency ratio, however, gives a weak correlation coefficient of only 0.290. It would appear that there is very weak but positive correlation between the two demographic parameters and that neither of them has any relationship with out-migration. Yet out-migration would tend to augment the dependency ratio, aggravating the plight of population in the districts in question. Moreover, the low income of migrants in the tea estates complex (see Table V.4) might suggest lack of insignificant transfer of remittances to the permanent domicile. If it is assumed, as Johnson and Whitelaw (1972) argue, that urban-rural remittances account for 21 percent of urban migrants' earned incomes, which are markedly higher than those of rural-rural migrants, then remittances from migrants in the tea estates complex might be negligible. Nevertheless, the fact that a substantial proportion of migrants make periodic visits to their homes might be construed as substituting remittances because they are consistently exposed to family and community obligations for which the latter are normally used. Revisits home supposedly constitute the strongest link between migrants' origins and destinations[3].

From the foregoing it may appear that out-migration is all detrimental to rural development. But it is also a positive force. The role of remittances and revisits just explained above is double-pronged. While they compensate for losses of income and human resources in out-migration areas, however, they add fuel to the blaze of

out-migration steams. Returned migrants also play a similar compensatory role: using their skills developed over the past migration episode in the development of their permanent domicile and their experience to spread a "contagious effect" on the younger potential migrants. A further argument, posed by regional analysts, is that out-migration alleviates the burden of population pressure and ecological stresses which persist in the higher and lower parts respectively of Western Kenya[4]. This could apply to Kisii and Kakamega Districts, but we are reluctant to belabour the point because additional data would be required to substantiate it.

Thus the economy of Western Kenya, which has been stagnating for many decades, especially during the colonial period, has been rendered so by two main factors. First, population pressure on the land in Maragoli-Bunyore locations in Kakamega District and several locations in Kisii District[5]. This is related to the second factor, namely, the land tenure system and low level of agricultural technology which has little scope for the modernisation of agricultural activity[6]. But there is evidence from the consistently lowering sex ratio of disintegration of some aspects of this old order since agricultural modernisation of the area started to take off at the turn of the sixties and especially in the post-colonial era.

7.1.2 Consequences in the Kericho Tea Estates Complex

The consequences of rural-rural migration at the destination have been less documented than those of rural-urban migration. It is now possible in Kenya to compile details of consequences at urban destinations where researches have profilerated. Comparatively, the Kericho tea estates complex has been more favoured by in-migration than out-migration. Once again, both demographic and socio-economic consequences of this rural-rural migration

process are discussed, now in the context of the receiving area.

Demographically, the area has been receiving migrants who are increasingly better equipped to service the plantation agriculture. As younger, more able-bodied, better educated and more development conscious population is drawn into the area, for the tea companies they are assets in many ways. For instance, the tea companies develop their skills for some specialised jobs through encouraging employment of younger couples, retaining those already recruited and discouraging their "job migration" alsewhere[7]. Added to this are the fringe benefits to the workers whose record of efficiency paves way for employment in tea companies to their kith and kin, thus encouraging chain migration from home to Kericho. Such chain migration, generally, compensates out-migration to areas outside the conventional migration field. The importance of relatives and friends in the process of chain migration has already been ascertained (Table V.6). As a result, the tea companies no longer have to hunt forcheap labour within and outside their traditional labour reservoir. Migration to Kericho by migrants ready to sell their labour, as has been explained in the previous chapter, is motivated partly by reliable information about job opportunities (Table V.6) and the presence of relatives and friends to provide initial settling during the transition (Table V.5). However, all that this trend amounts to is better exposure of migrants to other forms of employment elsewhere: urban areas on the one hand, and the agro-industrial complexes such as the sugar industry now mushrooming in Western Kenya on the other hand. Migrants to the tea estates will now have to weigh short-and long-term benefits between remaining there or migrating elsewhere. Expanding exployment opportunities envisaged in the Lake Basin Development Authority, not least the now rapidly industrialising

Kisumu town as well as rural agro-industrial nodes, are likely to diversify destinations of rural-rural migration more explicitly than ever before.

Socio-economic consequences are a pointer to problems facing not only the tea industry but also other plantations that engage labour force on nearly similar lines. Perhaps the most striking positive contribution of migrants has been their sustenance of the tea industry having an impressive history and steady expansion in the area. The success of tropical plantation agriculture, ceteris paribus, is attributable to a combination of brawl and brain of the indigenous population who play an overriding role in this labour-intensive industry. Migrants' exposure to modern agricultural technology, coupled with their acquisition of skills, constitute a good asset for subsequent development of their rural areas since they are more inclined than non-migrants to acquire new techniques of modern rural agriculture and the related rural economy. Another consequence of migration is evident population pressure on the tea estate areas which, in turn, exerts pressures on the demand for social welfare and housing units for migrants; increased provision of some household requirements; and additional health and educational facilities for them and their families. Although Ominde (1968a : 191) argues that the more permanent structures at the Kericho tea plantations contrast with the more rugged temporary stereotyped labour lines elsewhere (for example in sugar and cereal growing areas), they are grossly deficient in housing migrants. Initially intended for single occupants, prone to circular movements between home and tea areas in the colonial period, these labour lines are unsuitable for large families, leave alone those with older children. This is such an important demographic cum socio-cultural aspect of the employment deal that planners of the tea industry can ill afford to ignore at this time of rejuvenating some of the oldest industries in Kenya.

It features prominently in discussions between trade unions and employing institutions regarding the need to improve housing and related conditions for the workers.

Comparing the consequences of migration at the two poles; the Kericho tea estates have been benefitting at the expense of out-migration areas in Western Kenya. By and large, it has had a monopoly of every aspect of socio-economic life that appeals to a typical migrant (often young, educated and destabilised), having been the single dominant industry in this underdeveloped part of the country. But the emergence of the sugar industry during post-independence years poses challenges to this monopoly, as the latter competes for the labour force from the same areas. What is likely to be a feature of the rest of this century is shorter distance migration within other areas of the envisaged Lake Basin Development Authority boundaries. A further possibility is out-migration from the tea estates complex, particularly of semi-skilled and skilled migrants, to other industrialising parts of the LBDA area to which they might be more attracted. A plausible hypothesis, to be tested in future studies, is that most migrants in the tea estates complex plan to remigrate to their source areas now experiencing diversified rural agro-industrial innovations. But data at our disposal do not permit rigorous testing of the eighth hypothesis of this study: that due to the process of migration selectivity, migration affects development of source areas more adversely than the destination. However, it is tempting to argue that articulation of the effects of the rural-rural migration process hangs in the balance as the development potential of Western Kenya continues to be exploited. With a glimpse of this cloud on the horizon, population change in Western Kenya may now be considered.

7.2 POPULATION CHANGE IN WESTERN KENYA

Among the three components of population dynamics, migration is especially important in a regional setting because it affects the structure and participation in rural development of the residual population. As one of the principal out-migration areas in the country, Western Kenya is an appropriate region for analysing population change in aggregate terms and with particular reference to migration.

7.2.1 Aggregate Population Change in Western Kenya

The overall picture of population change in Western Kenya is most revealing (Table VII.2). It is evident that Western Kenya Districts experience a most dramatic demographic growth, more rapid in Western Province during the intercensal period 1969-79 and projected to be higher in Nyanza Province in the decade 1979-89. Between the two provinces the crucial factor seems to be natural increase of population, Western Province experiencing higher fertility and lower mortality than Nyanza Province in the period 1969-1979. By the period 1979-89 the latter is, through advancement in socio-economic development, expected to have a steady fertility - declining mortality interplay in the subsequent decade. That Western Province, where women married to polygamous husbands account for 27.7 percent of their total number compared to Nyanza's 34.3 percent, reports 7.36 children ever born to women aged 45-49 compared to 6.55 in Nyanza Province is consistent with the notion that a secular rise in monogamy over the last decade has caused the apparent rise in Kenyan fertility (Henin, 1980 : 15). The current population structure and fertility situation suggest brighter prospects for more rapid population growth in all districts during the current decade; they augur well for even more migratory population likely to be more involved

Table VII.2 - Population Change and Rate of Growth in Western Kenya by Districts, 1969-1989

	Population ('000)			Decennial Population Change (Percent)		Annual Growth Rate (Percent)	
	1969[a]	1979[b]	1989[c]	1969-79[d]	1979-89[e]	1969-79[d]	1979-89[e]
NYANZA PROVINCE	2,122	2,644	4,437	24.5	67.8	2.2	5.2
Kisii	675	870	1,388	28.9	59.5	2.6	4.7
Kisumu	401	481	863	19.9	79.4	1.8	5.8
Siaya	383	475	768	24.0	61.7	2.2	4.8
South Nyanza	663	818	1,418	23.4	73.3	2.1	5.5
WESTERN PROVINCE	1,323	1,833	2,893	38.5	57.8	3.2	4.6
Bungoma	345	504	799	46.1	58.5	3.8	4.6
Busia	200	298	398	49.0	33.6	3.6	3.3
Kakamega	783	1,031	1,696	31.7	64.5	2.8	5.0
Kericho	479	635	1,036	32.6	63.1	2.9	4.8
WESTERN KENYA	3,924	5,112	8,366	30.3	63.7	2.6	5.0

Table VII.2 Continued.

Source

[a] Republic of Kenya: *1969 Population Census, Vol. IV: Analytical Report.* C.B.S., Ministry of Finance & Planning, Nairobi.

[b] Republic of Kenya: Kenya Population Census 1979. Statistics Division, Ministry of Economic Planning and Development, Vol. I, Table I.

[c] Population Studies and Research Institute. Population profiles for the districts of Kenya. PSRI, University of Nairobi, 1979. The figures are based on low projection whereby fertility is regarded as constant, a most likely condition.

[d] Computed from Provisional 1979 Census figures.

[e] Projected change computed from (c) above.

in intra-regional migration than hitherto when the new economic edifice, now in the foundation stages, takes shape.

A pertinent question is, what does this envisaged population change mean to the rural-rural migration process under study? The answer to this question must be sought in lifetime migration among the Western Kenya Districts. Evidence is available from census data that are corroborated by our survey data.

7.2.2. Migration and Population Change in Western Kenya.

The profile of migration and population change in Western Kenya may be given at the national scale to explain its interaction with other regions and at the regional scale to present intra-regional population movements. The latter is illustrated by 1969 census data (Table VII.3). The pattern of percentage of in- and out-migration as well as sex ratio reveal features that are consistent with migration of population to urban areas and the tea estates complex. While Kericho District, perhaps due to the tea estates - town continuum, reports the highest percentage of male in-migration, South Nyanza has the highest proportion of female in-migration. But sex ratio brings out the picture more vividly: Western Province, due to out-migration, records lower in-migration than Nyanza Province; Kericho, Kisii and Kisumu (due to the influence of the Sugar-belt and Kisumu town) report high sex ratios indicative of male dominance; and the rest of the districts, being heavy out-migration areas, have low sex ratios, Kakamega and Siaya trailing behind the others. As concerns out-migration, all districts experience high sex ratio, highest in Kakamega and lowest in Kisumu. This evidences female dominance, low in Kisumu due to the importance of males in Kisumu town itself as well as the Nyanza Sugarbelt to the east of it. In the final analysis, there

Table VII.3 - Population Movement in Western Kenya, 1969

District	In-migration as a percent of total population			Out-migration as a percent of total population			Net Internal Migration ('000)		
	Male	Female	Sex Ratio[a]	Male	Female	Sex Ratio[a]	Male	Female	Difference in sex ratio[a]
NYANZA PRO PROVINCE.	10.7	11.5	93.0	13.1	10.5	124.8	- 28	12	-31.8
Kisii	10.5	10.3	101.9	7.5	4.8	156.3	11	19	-54.4
Kisumu	12.9	12.8	100.8	23.8	22.6	105.3	- 29	-25	+ 5.8
Siaya	7.2	9.4	76.6	17.3	12.6	137.3	- 21	- 7	-60.7
South Nyanza	11.5	13.0	88.5	7.0	5.0	140.0	16	28	-51.5
WESTERN PROVINCE.	5.2	6.0	86.7	16.9	12.6	134.1	-91	-52	-47.4
Bungoma	8.4	8.8	95.5	8.9	8.2	108.5	0.9	1	-13.0
Busia	8.1	9.5	85.3	13.7	12.1	113.2	- 6	- 3	-27.9
Kakamega	3.0	3.9	76.9	20.4	14.3	142.7	-82	-49	-65.8
Kericho	16.7	11.2	149.1	9.2	6.7	137.3	20	11	+11.8

Table VII.3 Continued.

Note: [a] Computed from the male/female data.

Source: H. Rempel. An Analysis of the Information on Inter-District Migration Provided in the 1969 Kenya Census. I.D.S., University of Nairobi. Discussion Paper No. 244, January 1977 Table 2 p. 7-8 (in-migration, out-migration and net internal migration by sex). Computed from Rempel's data.

is negative migration of males in all districts excepting Kericho, South Nyanza and Kisii and a similar feature among females in the same districts as well as Bungoma. The pattern of net internal migration sex ratio suggests positive scores for Kericho and Kisumu only, by far the major in-migration districts. This explains why Kisumu, relative to other districts, contributes a smaller proportion of migrants to Kericho tea estates complex. Negative net migration affects all other districts, the most affected being Kakamega, Siaya, Kisii and South Nyanza. The insignificant contribution of Bungoma and Busia substantiates their unimportance in migration to the tea estates complex.

Population movements between birthplace and destination suggest some very interesting features. The most striking feature is the absence of interaction between Kisii and Busia districts, perhaps attributable to lack of complementarity and presence of considerable intervening opportunities between them in the face of reasonable transferability. In general Kericho District is the principal destination, followed by Kisumu District, probably due to the combined impact of Kericho town and the tea complex and Kisumu town as well as the Nyanza Sugarbelt respectively. The principal out-migration districts are Kisumu, Kakamega and Siaya in that order irrespective of the sex of migrants. Conversely, Kericho and Bungoma are the least important in out-migration, again irrespective of the sex of migrants.

The pattern of destination-birthplace movements also depicts some important features. Both Kisumu and Kericho districts are in a class of their own as the chief source areas of this (re) migration process; and Bungoma District the most insignificant. This suggests heavy return migration or, in the case of females, marriage migration within the region.

Correlation of the two migration patterns is made using Spearman's rank correlation which best analyses the situation among the districts. In both sexes, there is a strong positive correlation, 0.885 for females and 0.867 for males. This substantiates the fact that population mobility is a dominant feature of Western Kenya Districts.

7.3. IMPLICATIONS OF POPULATION REDISTRIBUTION FOR RURAL DEVELOPMENT.

The impression one gets from migration pattern and population change in the previous section is that Western Kenya is a region of considerable population redistribution which certainly has important implications for rural development. It must be reiterated that, like other regions of Kenya, Western Kenya has, in spite of its enormous human resources and development potential, remained an economic backwater. Neither its rural environment nor its few urban centres have been brought into the national framework of the modernisation process. If anything, the national economy has often gained from it, without commensurate returns to it. In this last section of the chapter, attention is drawn to the implications of population redistribution for the nascent agro-industrial development and the measures being taken to eradicate the adverse effects of this demographic trend.

7.3.1. Population Redistribution and Agro-Industrial Activity.

Out-migration from Western Kenya Districts should not be misconstrued as an index of economic depression. Rather, it should be viewed as a response to the developed endowments elsewhere in the country while the area, despite potential endowments, remains underdeveloped.

Several research findings recognise this fact, lamenting the area's loss of high level manpower who only remigrate past their peak in contributing to its development[8]. In a reappraisal of his original thesis of the spatial modernisation process in Kenya, Soja, as though he were referring to Western Kenya, argues that the supply of cheap labour has been the preserve of densely populated, land-starved, subsistence farming reserves to the African-subsidised island of European-controlled, now large-scale African farmer-controlled production (Soja, 1979 : 40). This subsidy without demonstrable appreciation by the subsidised has aroused radical changes in planned development, now adopted through the temporally based sectoral planning and spatial physical planning within a hierarchical framework.

Western Kenya was caught unawares by the Swynnerton Plan (1954) which ushered in the awakening period of cash cropping in the African reserves of Kenya. Although cash crop production had been coveted by the rural African farmers in the area since World War II, the existing policy persistently prohibited realisation of their wish. Among other things, the Swynnerton Plan called for intensified food production to feed the rising rural and urban populations as "surplus producing on balance" (Swynnerton, 1954) at a time political events in Kenya thence, Mau Mau Rebellion for one, did not seem to favour this innovation. Out-migration continued unabated, leaving in the area a colonial legacy which has taken time to eliminate completely. Western Kenya has maintained its role as the "granary" of Kenya: supplying urban areas in particular with maize (Zea mays L.), a variety of pulses, rice(Oryza Sativa L.), sweet potatoes (Ipomoea batatus), bananas (Musa spp.) Sorghum (Sorghum vulgare), finger millet (Eleusine coracana) and cassava (Manihot esculenta). Cultivation of these crops, in the light of male out-migration selectivity,

has been the responsibility of female and old-age population left in the rural areas. As may be imagined, subsistence agriculture has been dwindling consistently in these rural areas, precisely because of the vicious circle already discussed (Figure 14).

Prospects for agro-industrial activity now being realised in Western Kenya augur well for development of its economy. The major cash crops which are important raw materials for rural industrialisation include sugar cane (Saccharum officinarum L.), cotton (Gossypium hirsutum L.), and groundnuts (Arachis hypogea) in the lowlands; and coffee (Coffea arabica), tea (Camellia sinensis L.) and pyrethrum (Charysanthemum cinerariefolium) in the higher parts. Besides, Western Kenya boasts the largest fresh water fisheries in the country, a variety of fish being caught, albeit on less commercial basis. Agro-industrial processing is the mainstay industrial activity in this area. Already, the sugar industry has shown the way in how best local human resources can be harnessed to develop rural economy: a chain of sugar factories now dot the landscape at the Miwani-Chemelil-Muhoroni complex, Awendo area in South Nyanza, Mumias-Nzoia area in Kakamega District and others planned in the near future (see Figure 6). Subsidiary industries such as alcohol production from molasses and paper are planned to use the otherwise wasted sugar cane by-products. Textile mills could proliferate with the expansion of cotton production now even inadequate for the Kisumu Cotton Mills (KICOMI) in Kisumu town; and oils and peanut butter are being planned in view of increasing groundnut production along the lacustrine lowlands. With this new facelift of economic renaissance is expected return migration of population already migrated to other parts of the country and intra-regional migration of potential migrants. In the context of spatial physical planning, Kisumu will join Nairobi and Mombasa as a national urban

centre, giving chances to smaller district towns to assume even greater roles in the rejuvenated Western Kenya area[9]. It will become a major metropolis with several satellite towns as already envisaged in its metropolitan master plan[10]. Such planned development envisages redistributing population, a measure likely to generate numerous problems in this densely settled and politically volatile region. But all told, they augur well for developing an economy which has stagnated for many decades since the inception of the modernisation process in Kenya. The future carries in store good prospects for a rice mill to crush rice from the Kano plains, the Bunyala lowlands and the reclaimed Yala Swamp as well as other reclaimable swamps; a fish and offal industry and other subsidiary industries based on existing and/or envisaged main industries.

7.3.2. Measures for Regulating Adverse Aspects of Population Change.

From the foregoing it may be realised that there are several adverse aspects of population change in Western Kenya which demand regulating. In the absence of explicit population policy pertaining to migration and population change, the laisser faire situation cannot continue indefinitely. Population policy has, since Kenya adopted one in 1967, the first sub-Saharan African country to do so, pivoted around regulating fertility in order to reduce the alarming rate of population growth[11]. Yet four principal measures aimed at regulating adverse aspects of population change have generally featured since the sixties: rural resettlement, spatial physical planning, rural industrialisation and the Lake Basin Development Authority (LBDA) (see Figures 1 and 6).

In Kenya the land issue has consistently remained a volatile as well as sensitive one ever since the colonial period. Despite a large area, only 17.4 percent of

Kenya is arable, and therefore heavily settled, leaving marginal and semi-arid/arid areas virtually uninhabited. Of the former, Western Kenya claims the largest share albeit in the face of aggravating population density threatening land use. Resettlement has involved acquiring parts of what were formerly the "Scheduled Areas" limited to European ownership in the colonial period; and redistribution of population to "returned lands" or wasteland which at one time were completely under-developed and even occupied by tsetse flies. In Western Kenya the whole area now occupied by the Miwani-Chemelil-Muhoroni sugar complex (Figure 6) extending up to Fort Ternan, Londiani and Kipkelion areas, were formerly in the "Scheduled Area", the westernmost extension of the former "White Highlands" (Odingo, 1963 1971a, 1971b). Relatively cheap land purchase under this scheme has resulted in considerable population redistribution of farmers as well as migrant farm workers, enhanced expansion of thesugar industry and generated rural development hitherto unknown in the area. This explains why resettlement areas have been in-migration enclaves in recent years. Added to this is the land adjudication policy which facilitates the provision of land title deeds with which acquisition of loans and other credit schemes is much easier than before. This exercise has been completed in all but isolated locations in some Western Kenya Districts. There are several resettlement schemes and "service centres" in the peripheries, within the area bordering Kisumu and Kericho Districts; the Lugare Scheme in Kakamega District; the Sotik complex in Kericho District; Lambwe Valley area in South Nyanza District; bordering Kisii and Narok Districts; and the reclaimed Yala Swamp soon to be resettled in Siaya District.

Within the framework of spatial physical planning, in Kenya modelled on a modified Christaller's (1966) "central place theory", planned development is envisaged

to be fostered through a four-tier hierarchy of "service centres". By these centres is meant a network of centres identified as providing several levels of administrative, social and commercial services to the rural population, and so identified by alloting scores of these services at various levels. The spatial distribution of service centres is thus specified at four levels: urban, market, rural and local (Kenya, 1974, 1979). Their purpose is to initiate development of their spheres of influence and modify the expanding rural-rural and rural-urban migration destined for other places. Their distribution pre-empts migration patterns in the region (see Figure 6). As the service centres expand their population and industrial infrastructural bases, so will be pattern of population redistribution be expected to alter, resulting in more intra-regional than extra-regional migration. Thus by retaining its large human resource, Western Kenya will be in a safer socio-economic development footing than ever before.

Rural industrialisation programme in Western Kenya has been slow but is just in the "take off" stage as we enter the 1980s. As its industrial potential has been discussed in the previous sub-section, there is no need to repeat it here. Suffice it to say, industrial development of the region is assured by conventional pre-requisites for industrial location: available raw materials, mainly agricultural and including fresh water fisheries; considerable hydro-electric energy potential; cheap and readily available labour spanning the whole spectrum of the component phases of industries; available capital, now more readily available than at any time in the annals of industrialisation in the region; and a sizeable reservoir of entrepreneurship inherent in the more prosperous Asian business magnates increasingly coming into partnership with rapidly enterprising African businessmen. All the service centres will gradually be involved in this rural

industrialisation programme which is likely to influence population redistribution and other aspects of population change.

Finally, all these measures and many more, will now be refined through the recently promulgated Lake Basin Development Authority (LBDA). Its pronouncement by the President naturally gives it a natural political goodwill and its emotional touch on the skilled manpower hailing from Western Kenya augurs well for its success. So far, baseline studies of the LBDA have been carried out by academics, policy makers and planners in order to mould its structure (Okidi, 1979). These are meant to form the basis for more definitive discussions, to generate further pragmatic research and, eventually, to lay all plans on the ground. Indeed, the LBDA, in keeping with the contemporary trend in planning whereby a "development region", notwithstanding political, ethnic and other boundaries, conceived as one naturally defined by uniformity of a given resource(s), is in this case the waters of Lake Victoria and all drainage networks draining into it. It is apparent that the LBDA will now overshadow all other rural development programmes envisaged earlier in the area and that it has very important ramifications for regulating adverse aspects of population change in Western Kenya.

NOTES

1. Researches by Fearn (1955, 1958, 1961) and Ominde (1963) pioneered analysis of demographic, pedological, agrarian and hydrological conditions in Western Kenya and have been enriched by subsequent studies cited elsewhere in this study.

2. Although research on the role of women in rural development has been a recent undertaking in Kenya, it echoes sentiments that have significant implications for continued research interest. Recent works published in a special edition of Studies in Family Planning edited by Sondra Zeidenstein (1979) include Smock (1979) and Okeyo (1979).

3. Quoted in Adepoju (1974 : 131) and extensively analysed by Caldwell (1969).

4. The vein of this argument is perceived in Waller et al. (1968), Ominde (1968a: 190) and Ominde and Odingo (1971).

5. This problem was a persistent feature of the District Commissioners' report, not least a cardinal point in the Governor Sir Philip Mitchell's (1947) agro-demographic analyses of Kenya and subsequent discussions in the 1940s to the early 1960s. Notable publications to this end include the East Africa Royal Commission 1953-1955 Report (Great Britain, 1961) and Kenya Government (1961).

6. Two students of migration, Ominde (1971) and Migot-Adhola (1977) have analysed the problem in the context of rural economy in the Western Kenya area. The economy remains underdeveloped in the face of unabating out-migration to other parts of the country.

7. There is evidence in the two tea companies to show that more couples are now employed than a decade or so ago in more than just tea picking (personal communication). Also, with an influx of the East African Certificate of Education (Ordinary Level) or even the East African Advanced Certificate of Education (Advanced Level) graduates, a growing proportion of younger and better educated migrants are exposed to training opportunities for factory, administrative and secretarial duties (personal communication with the tea companies' personnel officers).

8. Western Kenya is one of the well researched regions in Kenya, especially in demographic, historical and economic terms. Very revealing findings in development issues are presented in articles published in the edited work of Obudho and Taylor (1979).

9. This is evident in the physical development plans for Nyanza and Western Provinces which, though separate, are identical due to the fact that the two provinces do in fact constitute one "development region" focussing on Kisumu town. These plans are instrumental in the work and activities of the LBDA already discussed in earlier chapters of the study.

10. A team of University academics, government civil servants and civic authority experts are currently engaged in an elaborate study, the "Kisumu Metropolitan Region Growth Study", conceived as a multi-disciplinary undertaking. It will involve among other things planned development of transportation and communication, population-related matters, industrial infrastracture, land use and other aspects of metropolitan development.

11. In Kenya, as in most countries having rapid population growth, population policy is never broad enough to embrace all the three components of population dynamics - fertility, mortality and migration. Almost exclusively, it emphasises fertility regulation (through family planning, for instance), creating the impression that this is all that population policy involves. This conceptualisation of population policy persists even in such recent publications as the World Bank's (1980) articulation of population-development dynamics.

CHAPTER VIII

CHAPTER VIII

SUMMARY AND CONCLUSIONS

As an epilogue to this study the present chapter discusses four main issues. First and foremost, it echoes the major findings by summarising salient features of the preceding chapters. Second, on the basis of the foregoing, it draws some general conclusions to the study, placing emphasis on the substantive issues already discussed elsewhere. Third, it makes some fundamental recommendations that are pertinent to policy-making on either regional or national basis in the country. Finally, the chapter highlights opportunities for further research on not only the problem under study, but also other closely related problems.

8.1 SUMMARY OF MAJOR FINDINGS

This breakthrough on rural-rural migration between the traditional and modern sectors of the economy is a welcome departure from the more studied rural-urban migration whose literature has steadily inundated internal migration research. It is conveniently focussed on Western Kenya where an impressive modern-traditional sector dichotomy emerged since World War I with Kericho tea estates complex as the sole modern sector node within a rural landscape. This dichotomy has ushered in a rural-rural migration process between the underdeveloped rural districts in Western Kenya and the only economic island to which migration streams have gravitated. Other economic islands, almost exclusively confined to the sugar industry, have evolved only since independence in areas that before remained economic backwaters.

Being a case study of the most pervasive rural-rural migration in Western Kenya, it constitutes an opportunity for testing several hypotheses relating to the phenomenon.

Results of the nine hypotheses tested may now be summarised according to the three categories into which they were classified. On the volume of migration, both hypotheses have been accepted following migrants' responses as well as taking a X^2 test: (i) that chain migration is engendered by the presence of relatives and friends in the tea estates (Table V.5) and (ii) that chain migration is caused by the deliberate policy of the tea companies in Kericho to recruit cheap labour from selected rural areas. In terms of being media for learning of job opportunities the two are significantly different (Table V.6), relatives/friends being more important than company recruitment in this regard. On migration stream and counter-stream, only two of the three hypotheses are empirically tested here. Generally, it has been found that there are significant demographic and socio-economic differences between rural-rural migrants investigated in this study and rural-urban migrants already investigated in many studies in the country (hypothesis iii). Comparing this study and Rempel et al's rural-urban migration study, this hypothesis was tested from age (Table VI.8) and educational attainment (Table VI.9) data. More precisely, rural-urban migrants are younger and better educated than rural-rural migrants. Hypothesis (iv), i.e. rural-rural migration is an important stage of stepwise migration leading to rural-urban and return migration, is also accepted. Even from the less analytical Table V.12, anticipated movement of migrant population elsewhere is evident in the form of either rural-urban migration or return migration to the home area. But on a more refined basis, the picture is better depicted by X^2 tests. Given that staying in Kericho and moving elsewhere are significantly different (Table VI.15), a closer analysis of the latter indicates a substantial difference between anticipated rural-rural and rural-urban moves (Table VI.16), the latter noted to be the more dominant of the two in this study (Table V.12). Hypothesis(v) however, was not tested due to lack of data to facilitate a test. Yet Rempel's analysis of inter-district migration explains that Kericho District is a positive net migration

area as opposed to the rest of Western Kenya Districts which rank as negative migration areas (Table 1.5). Although hypothesis (v) is acceptable from this evidence, we are hesitant to depend on a secondary and far-fetched piece of evidence hence our in ability to test it. On migrant characteristics, all but one of the hypotheses were tested. Hypothesis (vi) - that the propensity of rural population to migrate is due to migration selectivity by identifiable demographic and socio-economic attributes of migrants relative to the general population - is accepted, though not rigorously tested. Demographically, migrants are highly selected by tribal origin, the Luo and the Kisii, notwithstanding distance, being dominant over the Kalenjin who are indigenous in the area (Table VI.1); they are relatively younger than the sedentary population (Table VI.2) where old-age population, school-age population apart, are dominant; they are predominantly male, high masculinity being a feature of in-migration areas; and are often married (Table VI.3). In socio-economic terms, the dominant migrant categories have no or little educational attainment (Tables VI.4 and VI.13) compared to the origin population where school-age population account for reasonable literacy; and they consist of a bigger proportion of economically active population than the latter (Table VI.14). Two hypotheses more rigorously tested in this study are (vii) and (ix). The former states that environmental constraints in the source areas "push" migrants to the tea estates (destination) where favourable conditions "pull" them. Of the specific "push" factors, unreliable crop yields and population pressure (Table V.2) are crucial in the vicious circle typical of the out-migration districts (Figure 14); but "other" reasons are by far the most important. In the regression model developed in this study the importance of personal or psycho-social factors at the origin (X_1) explains the significance of "other" reasons (Tables V.8 and Appendix II). Of the "pull" factors (Table V.3), varied circumstances including psycho-social factors as well as seeking job opportunities are responsible for attracting migrants. Hypothesis (ix) is

conceptually identical with hypothesis (iii) that has already been accepted, the very similarity between rural-urban migrants and skilled migrants in Kericho reinforcing our result. In the final analysis, therefore, all but two hypotheses (v and viii) have been empirically tested and accepted. But accepting a hypothesis does not imply appreciating it as a rule of thumb. Rather, it only ratifies our empirical evidence, given the results of data at our disposal, results that may change as circumstances and research areas do change.

The foregoing hypotheses constitute partially some of the findings in this study. Other important findings may now be summarised. Literature reviewed in Chapter II underscores obsession with rural-urban migration at the expense of rural-rural migration about which little is known. That the latter is consistent with the contemporary stage of Zelinsky's "mobility transition hypothesis" is enough rationale for shifting emphasis in migration research. This is consistent with the current swing of the pendulum of development toward rural areas, the origins of these two dominant migration streams. Like most migration studies, this study relies on primary household data collected at the destination of migration. Perhaps there is more to be gained by collecting such data at both the origins and the destination since those collected at the latter alone are likely to be defective on several grounds: memory lapse, change of perception, inability to give a balanced comparison of the two poles, and bias toward conditions at the destination. Analysis of the migration field has shown that whereas a dominant proportion of migrants originate from the regional migration field, a small but circumstantially significant number comes from the neighbouring districts as well as beyond the national boundaries. Rwanda, Uganda, Tanzania constitute the three origins of Kericho's international migrants. Within Western Kenya itself, South Nyanza and Kisii Districts, the longstanding traditional migrant sources, account for 54.1 percent of all

principal migrants in Kericho tea estates complex (Table IV.1). Conversely, Busia and Bungoma Districts are the least attracted to the area. Migration to Kericho, like other migration streams, is selective by both demographic and socio-economic characteristics which distinguish migrants from the parent population from whom they migrated. Age is as outstanding among the former as illiteracy is among the latter. Although exhibiting attributes inferior to those of rural-urban migrants, migrants in Kericho tea estates complex are more advantaged than the sedentary population at the districts of origin. Consequently, they are as much an asset to the former as they are a great liability to the latter whose development stagnates. The migration model developed in this study suggests that two interchangeable variables, distance (Dij) is negatively correlated with migration (Mij/Pi), and that other variables are positively correlated. Among those influencing migration most are tribal dominance (Tij) and origin personal psycho-social (non-economic) factors (X_i) as well as diverse environmental push" factors at the origin (Fi) on the one hand, and the destination (Fj) on the other. Also important are information flow (lij) and income differential (Wij). It is evident from the findings that non-economic factors, often underestimated in migration, may be among the most important determinants. They require more intimate investigation in order to ascertain their role with or without the more easily identifiable economic determinants of migration. Migration has both demographic and socio-economic consequences with farreaching implications for both the origins and the destination. Our findings indicate that it denudes population of the youngest, most able-bodied, albeit not the best educated, breed of population in Western Kenya Districts; it results in heads of households responsible for two irreconciable worlds, at the origin and at the destination; and, consequently, it partly accounts for rural underdevelopment, the residual population being too handicapped to reverse the trend. At the Kericho tea estates complex, the migrants have expended their maximum brain cum brawl to develop an economy from which they

derive little benefit. Migrants spend the bulk of their economically active period in developing this economy, only returning to their home areas when they are past the peak of their productivity. In Western Kenya, Kericho has for a long time remained the single receiving area of migrant population from all other districts. With the sugar industry mushrooming since independence, this characteristics will be shared by other districts, giving prospective migrants an opportunity for more diversified spatial relocation.

8.2 GENERAL CONCLUSIONS

Against the foregoing summary of the major findings some general conclusions may be drawn to this study. Overall, rural-rural migration exhibits features that have little relationship with those of the more studied rural-urban migration.

In the first place, complete neglect of rural areas is manifested in many features: in population movements confined to it irrespective of the dichotomised traditional-modern sectors of rural economy; in lack of literature analysing rural-rural migration among other rural phenomena; and in unimpressive development of rural areas, places such as the Kericho tea estates complex jutting out as economic islands. Although rural-rural migration is recognised among the major components of spatial relocation of population, it is yet to attract incisive analysis.

Identification and subsequent analysis of migrants at the destination are consistent with the methodological framework of migration research in the contemporary world. However, it is proving inadequate, given that migrants are different in many respects from what they were before their migration. This was a major shortcoming in this study and partly accounts for our inability to make a more analytical comparison of

migrants and stayers or migration source areas and the destination.

That Kericho area is a net recipient of migrants from neighbouring districtstallies with the situation depicted by census data. Kericho tea estates complex ranks as the principal destination hence its suitability for this study. Whereas our findings corroborate the importance of South Nyanza, Siaya, Kisumu and Kakamega as the principal out-migration areas, the contribution of Kisii to this regional migration process is surprising. Indeed, it explains the extent to which company recruitment of cheap labour permeated even traditionally sedentary societies.

Determinants of migration, varying with circumstances and migration streams, are multifarious, The role of economic factors is indisputable in societies where a few economic islands develop at the expense of their immediate hinterland. Economic forces and other destination incentives apart, this study reveals a host of environmental factors influencing migration, ranging from unreliable crop yields due to floods and erratic rainfall in lacustrine Western Kenya to population pressure in the higher, better-watered areas. These factors are reinforced by the presence of relatives/ friends at the destination, they being reliable sources of information about job opportunities as well as initial support for newly migrated population. Themodel of migration developed in this study is based on available data. In a way it forms the basis for developing a more refined model likely to be derived from several rural-rural migration researches.

Typical rural-rural migrants are by no means similar to, but recent ones are becoming identical with, their rural-urban counterparts. Unlike the latter, their horizon of the employment is more limited and their inability to compete with the latter more realistic, precisely because they are less educated. Apparently, they are more stable on employment

perhaps because of their poor chances of securing another elsewhere; but most of them aspire for rural-urban migration about which they have greater expectations. In recent years, migrants in the tea estates complex have been younger, better educated and better prepared for skill development than their older colleagues. This will drastically change migrant characteristics and give the study area a different demographic picture from what this study has revealed.

Finally, it is apparent that any migration process has adverse effects at the source areas and positive effects at the destination. In spite of their complaint of insufficient remuneration, migrants in Kericho tea estates complex are more willing to hold on to their employment for purposes of reliable income than return prematurely to their home areas. As our study area begins to share with the sugar industry those renown cheap labour reservoirs in Western Kenya, migrants will have more leeway for either migrating to any one of the several destinations or remaining intact at their home areas. Moreover, rural-rural migration may involve shorter distances or be completely replaced by commuting between residence and work places as the face of Western Kenyan economy changes in the future.

8.3 RECOMMENDATIONS FOR POLICY-MAKING

Increasing emphasis on rural development in Kenya suggests among other things that all issues that affect or are affected by development demand refined analysis. Migration in general and rural-rural migration in particular is among the most pervasive elements.

In spite our knowledge of fertility-mortality interplay, lean or with development, migration has been of peripheral interest to national or regional planners as well as policy makers. Two options may be recommended for policy makers.

Migration questions should be included in census interview schedules to collect data beyond "place of birth" and "place of emuneration" thereby going beyond just distinguishing migrants and non-migrants. Also, priority should be given to rural-rural migration surveys intended to collect multi-purpose data in stead of continuing rural-urban surveys exclusively intended to collect migration data per se Thus reasonable data will be mounted for use in making deeper insight into this migration process generally effective among the most underprivileged stock of economically active population.

Migration research should not remain the preserve of university academics and professional researchers. Policy makers concerned with agricultural resettlement schemes, agro-industry and other forms of rural development involving population movements should carry out regular researches on the phenomenon. Since these developments send migration waves deep in settled populations, they have important implications for rural-rural migration. The balance between academic analysis and policy implications of these researches would be best struck through joint researches between the two parties.

Policy makers should then proceed on to present their and other researchers' findings in national seminars or conferences at which rational policy would eventually be formulated. This move would enable them to arrive at reasonable consensus on issues pertaining to migration in the context of other aspects of rural development. Policy recommendations would subsequently be transmitted to decision makers for final action that would be binding for the whole population.

In order to achieve the foregoing, policy makers should guide migration research accordingly. They should identify researchable topics, determine priorities of research areas and incorporate research findings cum recommendations in

planning policy or strategy. The tendency for research findings to remain the property of researchers is too costly an undertaking to be favoured in a developing country where every effort is being made to unearth all knowledge that would foster development.

8.4 OPPORTUNITIES FOR FURTHER RESEARCH

The point has been repeatedly emphasised that this is a pioneering work on rural-rural migration in Kenya. As such, it leaves a lot of loopholes that future researches may fill. Some opportunities for further research are therefore identified for other reseachers to exploit.

Methodology in migration research should attract the attention of students of migration sooner than later. In terms of data collection, there is need to experiment with two-pronged interview schedules at both the origins and the destinations of migration, whether rural-rural or rural-urban. Among other things, this strategy would yield more reliable and easily cross-checked data about migrants and their families left in their home areas. In terms of data analysis, the instruments used ought to be more analytical than descriptive. There is need to apply appropriate multivariate statistics such as the principal components and factor analysis, especially in explaining the determinants as well as consequences of migration.

There are opportunities for conducting research on the determinants of rural-rural migration. This fact is reinforced by our finding that its determinants tend to be slightly different from those of rural-urban migration. It is far from adequate to distinguish between economic and non-economic factors. Since the latter are multifarious, there is need to examine them in greater detail through probing sociological, anthropological, educational, psychological and cultural

issues likely to influence migration.

Perhaps the greatest opportunities exist for researching on the consequences of migration at the origins. So far only migrants have been asked about the consequences, a question that could be best answered by families from which migrants migrated. Research along these lines would include whether or not migrants maintain contacts with their home areas; whether or not they send remittances of any kind, in what amounts and how often; whether or not their property, such as livestock or land are properly attended to during their absence; and what arrangements they expect to make to attain easy re-entry into their home areas following their retirement or return migration. All these underscore the need to research on migration and rural underdevelopment in the country.

Research is overdue on rural-rural migration between other plantation areas and economic islands where rural industrialisation has occurred. The former include tea, coffee, sisal and sugar cane growing areas in the country, which like our study area, depend on labour-intensive production. Situated in different ecological zones and drawing cheap labour from different parts of the country, these plantation areas constitute a rich research mine. The latter include developments such as the Pan-African Paper Mills at Webuye in Bungoma District of Western Province and the cashew nut factory in Kilifi District of Coast Province. The idea of these researches would be to have a comprehensive picture of rural-rural migration in the whole country and its implications for rural development at either regional or national levels.

Finally, research should be made on how rural out-migration can be controlled. Experience in many African countries has shown that legalised repressive and coercive measures for controlling the process have failed. Research on possible incentives for discouraging migration would have

significant policy implications not only for migration itself, but also rural development. Retention of migration-prone population at their permanent domicile is more likely to result in faster rural development than the current laisser faire policy of letting them do what pleases them, usually migrating elsewhere.

BIBLIOGRAPHY

BIBLIOGRAPHY

Abler, R., Adams, J. S. and Gould, P. (1972) Spatial Organisation: A Geographer's view of the World. London: Prentice/Hall International.

Adams, N. A. (1969) "Internal Migration in Jamaica: An Economic Analysis", Social and Economic Studies, Vol. 18, pp. 137-151.

Adepoju, A. (1974) "Rural-Urban Socio-economic links: the example of migrants in South-West Nigeria", in samir Amin (ed.), Modern Migrations in West Africa London: Oxford University Press, pp. 127-136.

_____ (1977) "Migration and Development in Tropical Africa: Some Research Priorities", African Affairs, Vol. 76, No. 302, pp. 210-225.

_____ (1979) "Migration, Economic opportunities and Occupational Mobility: a case study in Western Nigeria", Quarterly Journal of Administration, Vol. II, pp. 167-183.

Adomako-Sarfo, J. (1974) "The Effects of the Expulsion of Migrant workers on Ghana's Economy, with particular reference to the Cacao Industry", in Amin, op. cit., pp. 138-155.

Allan, W. (1967) The African Husbandman. London: Oliver and Boyd.

Allen, J. P. (1972) "Migration Fields of French Canadian Immigrants in Southern Maine", The Geographical Review, Vol. 62, No. 3. pp. 366-383.

Alonso, W. (1977) "Policy-oriented Inter-regional Demographic Accounting and a Generalisation of Population Flow Models", in A.A. Brown and E. Neuberger (eds.), Internal Migration New York: Academic Press, pp. 75-89.

Amin, S. ed. (1974) Modern Migrations in West Africa. London: Oxford University Press.

Ardener, E. (1961) "Social and Demographic Problems of the Southern Camerouns Plantation Area", in A. Southall (ed.), Social Change in Modern Africa. London: Oxford University Press, pp. 83-97.

Asiwaju, A. I. (1976) "Migrations as Revolt: the Example of the Ivory Coast and the Upper Volta before 1945", Journal of African History, Vol. XVII, No. 4, pp. 577-644.

Ayiemba, E. H. O. (1974a) "Intercensal Population Change: A comparative Study of Kano Plains and the Sugar-belt, 1962-1973". Unpublished M.A. Thesis, University of Nairobi.

_____ (1974b) Environmental Perception and its Influence on Population Dynamics: An Analysis of Kano Plains. Proceedings, UNEP/SIDA Workshop on Environmental and Rural Development in East Africa, Nairobi, Kenya 11-30 November, 1974.

_____ (1976) "Rural-to-Rural Migration as a factor in Regional Development of the Kano Plains", East African Geographical Review, No. 14, pp. 87-103.

Bailey, K. D. (1978) Methods of Social Research. New York: The Free Press.

Ball, J. M. (1967) "The Migration of People in Mexico", The Professional Geographer, Vol. 19, pp. 5-8

Barbour, K. M. (1965) "Rural-Rural Migrations in Africa: A Geographical Introduction", Institut de Science Econnomique Appliquee Cahiers, Serie V- Ethnologie, Sociologie and Economique (Paris), No. 9, pp. 47-68.

Barclay, G. W. (1958) Techniques of Population Analysis. New York: John Wiley & Sons.

Bataillon, C. and Lebot, Y. (1974) "Internal Migration and Temporary Agricultural Employment in Guatemala", Cahiers des Ameriques Latines, No. 11, pp. 117-147.

Beals, R. E., Levy M. B. and Moses, L. N. (1966) Labour Migration and Regional Development in Ghana. Evanston:: Northwestern University Press.

Beals, R. E., Levy, M. B. and Moses, L. N. (1967) "Rationality and Migration in Ghana", Review of Economics and Statistics, Vol. XLIX.

Berg, E. J. (1965) "The Economics of Migrant Labour System", in H. Kuper (ed.), Urbanization and Migration in West Africa. Berkeley, Calif.: University of California Press, pp. 160-199.

Bogue, D. J. (1969) Principles of Demography. New York: John Wiley and Sons.

Bogue, D. J. and Zachariah, K. C. (1962) "Urbanization and Migration in India", in R. Turner (ed.), India's Urban Future". Berkeley, Calif.: University of California Press, pp. 27-54.

Bose, A. (1967) Migration Streams in India. Paper for the International Union for the Scientific Study of Population, Sydney Conference, Australia, 21-25 August 1967. Canberra: Australian National University Press, pp. 597-606.

Bouvier, L. F., Macisco, J. J. and Zarate, A. (1970) "Toward a Framework for the Analysis of Differential Migration", in A. H. Richmond and D. Kubat (eds.), Internal Migration. London: Sage Publications, pp. 24-36.

Bowles, S. (1970) "Migration as Investment: Empirical Tests of the Human Investment Approach to Geographical Mobility", Review of Economics and Statistics, Vol. 52, No. 4, pp. 356-362.

Brookfield, H. (1974) Interdependent Development. London: Methuen.

Brown, L. A., Odland, J. and Golledge, R. G. (1970) "Migration, Functional Distance and Urban Hierarchy", Economic Geography, Vol. 46, pp. 472-485.

Browning, H. L. (1971) "Migrant Selectivity and the Growth of Large Cities in Developing Societies", in National Academy of Sciences, Rapid Population Growth , Vol. II. Baltimore: The Johns Hopkins Press, pp. 273-314.

Cain, J. A. (1972) "Migration Patterns in Nigeria: A Multivariate Analysis", African Studies Review, Vol. 15 pp. 209-216.

Caldwell, J. C. (1969) African Rural-Urban Migration. Canberra: Australian National University Press.

_____ et al. (1975) Population Growth and Socio-economic Change in West Africa. New York: Columbia University Press.

Carrothers, G. A. (1956) "An Historical Review of the Gravity and Potential Concepts of Human Interaction", Journal of the American Institute of Planners, Vol. 22, pp. 94-102.

Carvajal, M. J. and Geithman, D. T. (1976) "Migration Flows and Economic Conditions in the Dominican Republic", Land Economics, Vol. 52, No. 2, pp. 207-220.

Chardon, R. E. (1966) "Changes in the Geographic distribution of Population in Brazil, 1950-1960", in E. N. Baklanoff (ed.), New Perspectives of Brazil, Nashville: Vanderbilt University Press, pp. 155-178.

Clarke, J. I. (1965) Population Geography. Oxford: Pergamon Press.

_____ (1973) "Population in Movement", in M. Chisholm and B. Rodgers (eds.), Studies in Human Geography. London: Heinemann Educational Books, pp. 85-124.

Cloud, P. (1971) "Resources, Population and Quality of Life", in F. S. Singer (ed.) Is There An Optimum Level of Population? New York: McGraw-Hill, pp. 8-31.

Conaway, Mary E. (1977) "Circular Migration in Venezuela frontier areas", International Migration (Geneva), Vol. 15, No. 1, pp. 35-42.

Dak, O. (1968) "A Geographical Analysis of the Distribution of Migrants in Uganda". Unpublished M.A. Thesis, Makerere University College, Kampala.

de Kiewiet, C. W. (1965) The Anatomy of African Misery. London: Oxford University Press.

Diegues, M. (1967) "Internal Migration in Brazil, in United Nations, Proceedings of the World Population Conference, Belgrade, 1965, Vol. 4, New York, United Nations, pp. 492-495.

Eldridge, H. P. (1964) "A Cohort Approach to the Analysis of Migration Differentials", Demography, Vol. 1, No. 1, pp. 212-219.

Elizaga, J. C. (1965) "Internal Migration in Latin America", International Social Science Journal, Vol. 17, pp. 213-231.

Elkan, W. (1967) "Circular Migration and the Growth of Towns in East Africa", International Labour Review, Vol. XCVI, pp. 581-589.

Ellis, Diana (1976) "The Nandi Protest of 1923 in the Context of African Resistance to Colonial Rule in Kenya", Journal of African History, Vol. XVII, No. 4, pp. 550-575.

Fallenbuchl, Z. M. (1977) "Internal Migration and Economic Development under Socialism: the case of Poland", in Brown and Neuberger op. cit., pp. 305-327.

Fearn, H. (1961) An African Economy: A Study of the Economic Development of Nyanza Province of Kenya, 1903-1953. London: Oxford University Press.

_____ (1955) "Population as a Factor in Land Usage in Nyanza Province of Kenya Colony", East African Agricultural Journal, Vol. XX, No. 3, pp. 198-200.

_____ (1958) "Gold Mining Era in Kenya Colony", The Journal of Tropical Geography, Vol. 2, pp. 43-59.

Fielding, A. J. (1975) "Internal Migration in Western Europe", in L. A. Kosinski and R. M. Prothero (eds.), Population on the Move: Studies on Internal Migration. London: Methuen, pp. 237-254.

Fields, G. S. (1979) "Lifetime Migration in Colombia: Tests of the Expected Income Hypothesis", Population and Development Review, Vol. 5, No. 2, pp. 247-265.

Fischlowitz, E. (1969) "Internal Migration in Brazil", International Migration Review, Vol. 3, pp. 36-47.

Geiger, P. P. (1975) "Inter-regional Migrations in Latin America", in Kosinski and Prothero, op. cit., pp. 165-179.

Gosal, G. S. and Krishan, G. (1975) "Patterns of Internal Migration in India", in Kosinski and Prothero, op. cit., pp. 193-206.

Gould, W. T. S. (1974a) Bibliography of Population Mobility in Tropical Africa. African Population Mobility Project, Department of Geography, University of Liverpool.

Gould, W. T. S. (1974b) "International Migration in Tropical Africa: a bibliographical review", International Migration Review, Vol. 8, No. 3, pp. 347-365.

Gould, W. T. S. and Prothero, R. M. (1975) "Space and Time in African Population Mobility", in Kosinski and Prothero op. cit., pp. 41-44.

Greenwood, M. J. (1969) "The Determinants of Labour Migration in Egypt". Journal of Regional Science. Vol. 9, pp. 283-290.

_____ (1971) "An Analysis of the Determinants of Internal Labour Mobility in India", The Annals of Regional Science, Vol. V, No. 1, pp. 137-151.

_____ (1976) "Research on Internal Migration in the United States: A Survey", Journal of Economic Literature, Vol. 13, pp. 397-433.

Gregory, J. (1971) "Migration in Upper Volta", African Urban Notes, Vol. 6, pp. 44-52.

Gregory, J. (1974) "Underdevelopment, Dependency, and Migration in Upper Volta". Unpublished Ph.D. Dissertation, Cornel University.

Griffiths, J. F. (1969) "Climate", in W.T.W. Morgan (ed.), East Africa: its peoples and resources, Nairobi: Oxford University Press, pp. 95-105.

Gulliver, P. H. (1957) "Nyakyusa Labour Migration", The Rhodes-Livingstone Journal, Vol. 21, pp. 32-63.

Hagerstrand, T. (1957) "Migration and Area", in D. Hannerberg et al. (eds.), Migration in Sweden, Lund Studies in Geography, Series B, Human Geography, No. 13, pp. 27-158.

Hance, W. A. (1970) Population, Migration and Urbanisation in Africa. New York: Columbia University Press.

Haney, E. B. (1965) "The Economic Organisation of Minifundia in A Highland Community of Columbia". Unpublished Ph.D. Dissertation, University of Wisconsin, Madison.

Harvey, D. (1969) Explanation in Geography. London: Edward Arnold.

Harvey, M. E. (1975) "Inter-regional Migration Studies in Tropical Africa", in Kosinski and Prothero, op. cit., pp. 154-163.

Henin, R. A. (1979) Recent Demographic Trends in Kenya and their Implication for Economic and Social Development. Population Studies and Research Institute, University of Nairobi (Mimeo).

_____ (1980) Effects of Development on Fertility and Mortality Trends in East Africa: Evidence from Kenya and Tanzania. Population Studies and Research Institute, University of Nairobi (Mimeo).

Hicks, J. R. (1932) The Theory of Wages. London: MacMillan.

Hirst, M. A. (1969) "Net Migration Patterns over Tanzania", East African Geographical Review, Vol. 7, pp. 25-36.

_____ (1970) "Tribal Migration in East Africa: a review and analysis", Geografiska Annaler, Series B, Vol. 52, pp. 153-164.

Ho,Ping-ti (1959) Studies on the Population of China, 1368-1953. Harvard East Asian Studies, No. 4, Cambridge, Mass: Harvard University Press.

Houghton, D. H. (1960) "Men of Two Worlds; Some Aspects of Migratory Labour in South Africa", The South African Journal of Economics, Vol. 28, No. 3, pp. 177-190.

House, W. J. and Rempel, H. (1980) "The Determinants of Interregional Migration in Kenya", World Development, Vol. 8, pp. 25-35.

Hugo, G. (1977) "Circular Migration". Bulletin of Indonesian Economic Studies, Vol. 13, No. 3, pp. 57-66.

Huntington, H. G. (1974) "An Empirical Study of Ethnic Linkages in Kenyan Rural-Urban Migration". Unpublished Ph.D. Dissertation, New York State University.

Isard, W. and Bramhall, D. F. (1960) "Gravity,, Potential and Spatial Interaction Models", in W. Isard (ed.), Methods of Regional Analysis: An Introduction to Regional Science. New York: John Wiley and Sons, pp. 493-569.

International Labour Organisation (1972) Employment, Incomes and Equality: a strategy for increasing productive employment in Kenya. Geneva: International Labour Office.

Johnson, G. and Whitelaw, W. E. (1972) Urban-Rural Income Transfers in Kenya: An Estimated Remittance Function. Discussion Paper No. 137, Institute for Development Studies, University of Nairobi.

Jolly, R. et al. eds (1973) Third World Employment. London: Penguin Education.

Kayser, B. (1977) "European Migrations: the New Pattern", International Migration Review, Vol. 11, No. 2, pp. 232-240.

Kenya Government (1961) Land and Population in East Africa, Colonial No. 290. London: H.M. S.O.

Kenya National Archives (1977) Kericho District Political Record Book 1917. Nairobi.

_____ (1928) Kericho District Political Record Book 1926 - 1928. Nairobi.

Kenya, Republic of (1977) 1969 Population Census, Vol. IV: Analytical Report, Nairobi: Central Bureau of Statistics, Ministry of Finance and Planning.

_____ (1973) Demographic Survey Report 1973. Nairobi: Central Bureau of Statistics, Ministry of Finance and Planning.

_____ (1974) Development Plan 1974-1978, Part I. Nairobi: Government Printer.

_____ (1979) Development Plan 1979-1983, Part I. Nairobi: Government Printer.

Kipkorir, K. M. (1976) "The Tea Plantation Economy in Kericho District and Related Phenomena". Unpublished B.A. Dissertation, University of Nairobi.

Knowles, J. C. and Anker, R. (1977) Determinants of Internal Migration in Kenya: A District Level Analysis. Population and Employment Working Paper No. 56, ILO-World Employment Programme, 2-21/RP.56.

Kosgei, Sally J. (1979) "Some Thoughts on the Kipsigis Colonial Economy". Department of History, University of Nairobi, Staff Seminar Paper, No. 14, 1978/79.

Kuper, Hildah ed. (1965), Urbanisation and Migration in West Africa. Berkeley, Calif.: University of California Press.

Kosinski, L. A. (1975) "Inter-regional Migration in East-Central Europe", in Kosinski and Prothero, op. cit., pp. 277-292.

Laber, G. and Chase, R. (1971) "Inter-provincial Migration in Canada as a Human Capital Decision", Journal of Political Economy, Vol. 79, pp. 795-805.

Lebon, J. H. G. (1966) An Introduction to Human Geography. London: Hutchinson University Library.

Lee, E. S. (1966) "A Theory of Migration", Demography, Vol. 3, pp. 47-57.

Levy, M. B. and Wadycki, W. J. (1972) "A Comparison of Young and Middle-Aged Migration in Venezuela, Annals of Regional Science, Vol. 6, pp. 73-85.

Lewis, L. T. (1971) "Some Migration Models: Their Application to Negro Urban Migration." Unpublished Ph.D. Dissertation, Clark University.

Lipton, M. (1980) "Migration From Rural Areas of Poor Countries: The Impact of Rural Productivity and Income Distribution", World Development, Vol. 8, pp. 1-24.

Lorimer, F., Brass, W. and van de Walle, E. (1965) "Demography", in R.A. Lystad (ed.), The African World: A Survey of Social Research. New York: Praeger, pp. 271-303.

Mabogunje, A. L. (1970) "Systems Approach to a Theory of Rural-Urban Migration", Geographical Analysis, Vol. 2, pp. 1-18.

Mabogunje, A. L. (1972) Regional Mobility and Resource Development in West Africa. Montreal: McGill-Queen's University Press.

Masser, I. and Gould, W.T.S. (1975) Inter-regional Migration in Tropical Africa. London: Institute of British Geographers.

Mathare, J. W. (1969) "Tea Industry in Kenya." Project Paper, Department of Economics, University College, Nairobi.

Matingu, Mary (1974) "Rural to Rural Migration and Employment: A Case study in a selected Area of Kenya". Unpublished M.A. Thesis, University of Nairobi.

McWilliam, M. D. (1957) "The East African Tea Industry 1920-1956: A Case Study of the Development of A Plantation Industry". Unpublished B. Litt. Dissertation, Oriel and Nuffield Colleges, Oxford University.

Metge, Alice J. (1964) A new Maori Migration: Rural and Urban Relations in Northern New Zealand. London: Athlone Press.

Migot-Adhola, S. E. (1977) "Migration and Rural Differention in Kenya". Unpublished Ph.D. Dissertation, University of California Los Angeles.

Mincer, J. (1978) "Family Migration Decisions", Journal of Political Economy, Vol. 86, pp. 749-773.

Mitchell, J. C. (1954) "The Distribution of African Labour by Area of Origin on the Copper Mines of Northern Rhodesia". The Rhodes-Livingstone Journal, No. 14, pp. 30-36.

_____ (1959) "Labour in Africa South of the Sahara: The causes of Labour Migration", Bulletin of the Inter-African Labour Institute Vol. 6, No. 1, pp. 12-46.

_____ (1963) "Wage Labour and African Population Movements in Central Africa", in K. M. Barbour and R. M. Prothero (eds.), Essays on African Population. London: Routledge and Kegan-Paul, pp. 193-248.

_____ (1968) "Factors Motivating Migration from Rural Areas", in Present Interrelations in Central Africa Rural and Urban Life: Proceedings of the Eleventh Conference of the Rhodes-Livingstone Institute for Social Research, Journal, 1958, Lusaka, pp. 12-23.

_____ (1969) "Structural Plurality, Urbanization and Labour Circulation in Southern Rhodesia", in J.A. Jackson (ed.) Migration. Cambridge: Cambridge University Press, pp. 151-181.

Moock, Joyce L. (1976) "Migration Process and Differential Economic Behaviour in South Maragoli, Western Kenya". Ann Arbor, Mich.: University of Microfilms International.

Monsted, M. and Walji, P. (1978) A Demographic Analysis of East Africa. Uppsala: The Scandinavian Institute of African Studies.

Morrison, P. (1973) "Migration from Distressed Areas: Its Meaning for Regional Policy", RAND Memorandum R-1103-EDA/FFENIH, October.

Moser, C. A. and Kalton, G. (1971) Survey Methods in Social Investigation. London: Heinemann Educational Books.

Nakitare, E. P. (1974) "Socio-economic Consequences of Intra-rural Migration". Unpublished M.A. Thesis, University of Nairobi.

Nattrass, Jill (1976) "Migrant Labour and South African Economic Development", The South African Journal of Economics, Vol. 44, No. 1, pp. 65-83.

Neiva, A. H. (1966) "The population of Brazil", in J. M. Stycos and J. Arias (eds.), Population Dilemma in Latin America. Washington D.C.: Potomac Books, pp. 33-60.

Nelson, P. (1959) "Migration, Real Income and Information", Journal of Regional Science, Vol. 1, pp. 43-74.

Ng, R. (1969) "Recent Internal Population Movement in Thailand", Annals of the Association of American Geographers, Vol. 59, pp. 710-730.

Ng, R. C. Y. (1975) "Internal Migration in Southeast Asian Countries", in Kosinski and Prothero op. cit., pp. 181-192.

Nyaoke Owuor, S. (1974) "Primacy of Determinants of Rural-Urban and Reverse Urban-Rural Migration in Kenya". Unpublished M.A. Thesis, University of Nairobi.

Obudho, R. A. and Taylor, D. R. eds. (1979) The Spatial Structure of Development: A Study of Kenya. Boulder, Colo.: Westview Press.

Odingo, R. S. (1963) "Some Aspects of the Agricultural Geography of the Kenya Highlands". Unpublished Ph.D. Thesis, University of Liverpool.

Odingo, R. S. (1967) "Land Settlement in the Kenya Highlands", in J. R. Sheffield (ed.), Education Employment and Rural Development Nairobi: East African Publishing House, pp. 141-151.

Odingo, R. S. (1971a) The Kenya Highlands: Land use and Agricultural Development, Nairobi: East African Publishing House.

_____ (1971b) "Settlement and Rural Development in Kenya", in S. H. Ominde (ed.), Studies in East African Geography and Development. London: Heinemann, pp. 162-176.

Odingo, R. S. (1973) A Study of Agrarian Change in Kenya with special reference to Kericho District. A study specially prepared for the Food and Agriculture Organisation of the United Nations (F.A.O.).

Ogendo, R. B. (1967) "The Significance of Industrial Zoning to Rural Industrial Development in Kenya", Cahiers d'etudes Africaines, Vol. 7, pp. 444-484.

Ogungo, B. P. (1971) "Migrant Labour in Miwani Sugar Estate and its Effects on Neighbouring Locations". Unpublished B. A. Dissertation, University of Nairobi.

Ohadike, P. O. (1972) "Migrants in the Copper Mines of Zambia, 1940-66" , in S. H. Ominde and C.N. Ejiogu (eds.), Population Growth and Economic Development in Africa. London: Heinemann, pp. 252-261.

Ojany, F.F. (1971) "Drainage Evolution in Kenya", in Ominde, op. cit., pp. 137-145.

_____ and Ogendo, R. B. (1973) Kenya: A Study in Physical and Human Geography, Nairobi: Longman Kenya.

Okeyo, Achola P. (1979) "Women in the Household Economy: Managing Multiple Roles", Studies in Family Planning, Vol. 10, No. 11/12, pp. 385-390.

_____ (1979) "Research Priorities: Women in Africa", ibid., pp. 401-404.

Okidi, C. O. (ed.) (1979) Natural Resources and Development of Lake Victoria Basin of Kenya. Occasional Paper No. 34, Institute for Development Studies, University of Nairobi.

Okun, B. and Richardson, R. W. (1961) "Regional Income Inequality and Internal Population Migration", Economic Development and Cultural Change, Vol. 9, pp. 128-143.

Olsson, G. (1965) "Distance and Human Interaction: A Migration Study", Geografiska Annaler, Vol. 47B, pp. 3-43.

_____ (1970) "Explanation, Prediction and Mean Variance: An Assessment of Distance Interaction Models", Economic Geography, Vol. 46, pp. 223-233.

Ominde, S. H. (1963) "Land and Population in the Western Districts of Nyanza Province, Kenya". Unpublished Ph.D. Thesis, University of London.

_____ (1968a) Land and Population Movements in Kenya. London: Heinemann.

_____ (1968b) "Some Aspects of Population Movements in Kenya", in J. C. Caldwell and C. Okonjo", (eds.), The Population of Topical Africa. London: Longmans, pp. 264-269.

_____ (1968c) "Internal Migration of the Economically Active Age Group in Kenya", in H. Berger (ed.), Ost-Afrikanische Studien. (East African Studies) Eriangen-Numberg: Friedrich Alexander Universitat Wirtschaft and Sozialgeographischen Institut, pp. 227-240.

_____ (1971) "Rural Economy in West Kenya", in Ominde, op. cit., pp. 207-229.

Ominde, S. H. and Odingo, R. S. (1971) Demographic Aspects of Regional Inequalities in Kenya Commission on Regional Aspects of Economic Development, Brazil.

Osoro, J. M. (1979) "African Labourers in Kericho Tea Estates 1920-1970". Unpublished M.A. Thesis, University of Nairobi.

Oucho, J. O. (1974) "Migration Survey in Kisumu town". Unpublished M.A. Thesis, University of Nairobi.

_____ (1979a) "Population Movements in Kenya: a review and analysis", Journal of Eastern African Research and Development, Vol. 9, No. 1/2, pp. 78-90.

_____ (1979b) Population and Economy of Kenya, Case Studies Series I. Addis Ababa: United Nations Economic Commission for Africa.

_____ (1979c) "Population and its implications for Resource Development in the Lake Victoria Basin". in Okidi op. cit., pp. 8-37.

_____ (1980) "Urban Migration Field: A Study of the Spatial Migration System of Kisumu town, Kenya", The KenyanGeographer, Vol. 3, No. 1, pp. 7-22.

Ouma, J. P. B. M. (1971) "Evolution of Meander Traits in the Basin of Lake Victoria", in Ominde, op. cit., pp. 29-40.

Peil, Margaret (1971) "The Expulsion of West African aliens", Journal of Modern African Studies, Vol. 9, pp. 205-229.

_____ (1974) "Ghana's aliens", International Migration Review, Vol. 8, pp. 367-381.

Pettis, Susan T. (1971) Social Consequences of Rural-Urban Youth Migration in two African Countries: Nigeria and Kenya. Watham, Mass.: Brandeis University, Florence Heller Graduate School for Advanced Studies in Social Welfare.

Poulsen, M. F. (1970) "Internal Maori Migration 1951-1969". Unpublished M.A. Thesis University of Canterbury.

Poulsen, M. F. and Johnston, R. J. (1973) "Patterns of Maori Migration", in R. J. Johnston (ed.), Urbanization in New Zealand: Geographical Essays. Wellington.

Poulsen, M. F., Rowland, D. T. and Johnston, R. J. (1975) "Patterns of Maori Migration in New Zealand", in Kosinski and Prothero, op. cit., pp. 309-324.

Prothero, R. M. (1968) "Migration in Tropical Africa", in J. C. Caldwell and C. Okonjo (eds.), The Population of Tropical Africa. London: Longmans, pp. 250-263.

_____ (1975) "Migratory Labour from Northwestern Nigeria," Africa, Vol. 37, pp. 251-261.

Prothero, R. M. (1975) Micro-scale studies of Population Mobility in Tropical Africa: Some Problems and Possibilities. African Population Mobility Project, Working Paper No. 21.

Pryor, R. J. (1975) "Migration and the process of Modernisation", in Kosinski and Prothero, op. cit., pp. 23-38.

Ramakumar, R. and Kumari, K. R. (1975) "Lifetime Migration from Kerala", Journal of Kerala Studies, Vol. 2, No. 4, pp. 605-619.

Ravenstein, E. G. (1885) "The Laws of Migration". Journal of the Royal Statistical Society, Vol. 48, pp. 167-227.

_____ (1889) "The Laws of Migration" Journal of the Royal Statistical Society, Vol. 52, pp. 241-301.

Rempel, H. (1971) "Labour Migration into Urban Unemployment in Kenya". Unpublished Ph.D. Dissertation, University of Wisconsin.

_____ (1977) An Analysis of the Information on Inter-District Migration Provided in the 1969 Kenya Census. Discussion Paper No. 244, Institute for Development Studies, University of Nairobi.

_____ (1981) "The extent and nature of the population movement into Kenya's towns", in R.A. Obudho (ed.), Urbanization and Development Planning in Kenya. Nairobi: East African Literature Bureau.

Rempel, H., Harris, J. R. and Todaro, M. (1970) Rural-to-Urban Labour Migration: A Tabulation of Responses to the Questionnaire used in the Migration Survey. Discussion Paper No. 92, Institute for Development Studies, University College Nairobi.

Riddell, J. C. (1970) "Labour Migration Among the Ghannah Mano of Liberia". Unpublished Ph.D. Dissertation, University of Oregon, Eugene.

Riddell, J. B. (1970) "On Structuring a Migration Model", Geographical Analysis, Vol. 1, pp. 405-409.

_____ and Harvey, M. E. (1972) "The Urban System in the Migration process: an evaluation of stepwise migration in Sierra Leone", Economic Geography, Vol. 48, pp. 270-283.

Ritchie, J. (1961) "Together or apart: a note on Maori residential preferences", Journal of Polynesian Societies, Vol. 70, pp. 194-199.

Rothenberg, J. (1977) "On the micro-economics of Internal Migration", in Brown and Neuberger op. cit., pp. 183-201.

Rouch, J. (1961) "Second generation Migrants in Ghana and the Ivory Coast", in Southall, op. cit., pp. 300-304.

Rowland, D. T. (1971) "Maori Migration to Auckland", New Zealand Geographer, Vol. 27, pp. 21-37.

Sahota, G. S. (1968) "An Economic Analysis of Internal Migration in Brazil", Journal of Political Economy, Vol. 76, pp. 218-245.

Sauer, O. C. (1956) "The Agency of Man on the Earth", in W. L. Thomas (ed.), Man's Role in Changing the Face of the Earth. Chicago: The University of Chicago Press, pp. 862-880.

Shankman, P. (1976) Migration and Underdevelopment: the Case of Western Samoa. Boulder, Colo.: Westview Press.

Shaw, R.P. (1975) Migration Theory and Fact: A Review of Bibliography of Current Literature. Bibliography Series No. 5. Philadelphia, Penn.: Regional Science Research Institute.

Shaw, R. P. (1974) "A Note on Cost-Return Calculations and Decisions to Migrate", Population Studies, Vol. 28, No. 1, pp. 167-169.

Schultz, T. W. (1962) "Reflections on Investment in Man". Journal of Political Economy, Vol. LXX, pp. 51-58.

Schwartz, A. (1973) "Interpreting the Effect of Distance on Migration", Journal of Political Economy, Vol. 81, No. 5, pp. 1153-1169.

Scott, R. M. (1969) "Soils", in Morgan op. cit., pp. 95-105.

Shryock, H. S. et al. (1975) The Methods and Materials of Demography, 2 vols. Washington, D.C.: U.S. Government Printing Office.

Simmons, A., Diaz-Briquets, S. and Laquian, A. A. (1977) Social Change and Internal Migration: A Review of Research Findings from Africa, Asia and Latin America. Ottawa: International Development Research Centre.

Sjaastad, L. A. (1961) "Income and Migration in the United States". Unpublished Ph.D. Dissertation, University of Chicago.

Sjaastad, L. A. (1962) "The Costs and Returns of Human Migration", Journal of Political Economy, Vol. 70, (Supplement) No. 5, pp. 80-93.

Skinner, E. (1965) "Labour Migration among the Mossi of the Upper Volta", in Kuper, op. cit., pp. 60-84.

Sly, D. F. (1978) "Lifetime Migration in Kenya". Population studies and Research Institute, University of Nairobi (Mimeo).

Smith, T. L. (1967) "The Role of Internal Migration in Population Redistribution in Brazil", in United Nations, Proceedings of the World Population Conference, Belgrade, 1965, Vol. 4, New York, United Nations.

Smock, Audrey C. (1979) "Measuring Rural Women's Economic Roles and Contributions in Kenya", Studies in Family Planning, Vol. 10, No. 11/12, pp. 385-390.

Soja, E. W. (1968) The Geography of Modernization in Kenya: a spatial analysis of social, economic and political change. Syracuse: Syracuse University Press.

Southall, A. W. (1961) "Population Movements in East Africa", in Barbour and Prothero, op. cit., pp. 157-192.

_____ (1967) "The Demographic and Social Effects of Migration of the Population of East Africa", in United Nations, op. cit., pp. 235-238.

Speare, A. (1971) "A Cost-Benefit Model of Rural to Urban Migration in Taiwan", Population Studies, Vol. 25, pp. 117-131.

Stevens, R. P. (1968) "Spatial Aspects of Internal Migration in Mexico 1950-1960", Revt. Geografica, Vol. 69, pp. 79-90.

Stewart, J. Q. (1948) "Demographic Gravitation: Evidence and Applications", Sociometry, pp. 31-58.

Stockwell, E. G. and Wicks, J. W. (1974) "Age Heaping in Recent National Censuses", Social Biology, Vol. 21, No. 2.

Stouffer, S. A. (1940) "Intervening Opportunities: A Theory Relating Mobility and Distance", American Sociological Review, Vol. 5, pp. 845-867.

_____ (1960) "Intervening Opportunities and Competing Migrants", Journal of Regional Science, Vol. 2, No. 1, pp. 1-26.

Sundrum, R. M. (1976) "Inter-provincial Migration", Bulletin of Indonesian Economic Studies, Vol. 12, No. 1, pp. 70-92.

Swynnerton, R. J. M. (1954) A Plan to Intensify Development of African Agriculture in Kenya. Nairobi: Government Printer.

Taber, S. R. (1969) Economic opportunity and urban orientation as factors. Proceedings, the Annual Conference of East African Institute of Social Research. Makerere University College, Kampala.

Taylor, P. J. (1975) "Distance Decay Models in Spatial Interactions", in Institute of British Geographers, Concepts and Techniques in Modern Geography. No. 2, pp. 3-35.

ter Heide, H. (1963) "Migration Models and their Significance for Population Forecasts", The Milbank Memorial Fund Quarterly, Vol. XL1, pp. 56-76.

Thomas, Dorothy S. (1938) Research Memorandum on Migration Differentials. New York: Social Science Research Council, Bulletin No. 43.

Thomas, R. N. (1970) Internal Migration in Latin America: An Analysis of Recent Literature. National Conference for Latin American Geographers, Ball State University, Muncie, Indiana.

Todaro, M. P. (1969) "A Model of Labour Migration and Urban Unemployment in Less Developed Countries", American Economic Review, Vol. 59, pp. 138-148.

_____ (1971) "Income Expectations, Rural-Urban Migration and Employment in Africa", International Labour Review, Vol. 104, No. 5, pp. 387-414.

_____ (1976) Migration and Economic Development. Occasional Paper No. 18, Institute for Development Studies, University of Nairobi.

Ullman, E. L. (1956) The Role of Transportation and the Bases of Interaction, in W. L. Thomas (ed.), Man's role in Changing the face of the Earth. Chicago: The University of Chicago Press, pp. 862-880.

United Nations (1956) Methods for Population Projections By Sex and Age, Manual III. New York: Department of Economic and Social Affairs.

_____ (1958) Multilingual Demographic Dictionary (English), Population Studies No. 29. New York: United Nations.

_____ (1967) Methods of Estimating Basic Demographic Measures from Incomplete Data, Manual IV. New York: Department of Economic and Social Affairs.

United Nations. (1970) Principles and Recommendations for the 1970 Population Census. New York: United Nations.

_____ (1978) The Determinants and Consequences of Population Trends. Population Studies, No. 50. New York: Department of Economic and Social Affairs.

_____ (1967) Report on the Expert Working Group on Problems of internal migration and urbanization and selected papers: Bangkok: United Nations Economic Commission for Asia and the Far East. (ECAFE).

van Velsen, J. (1961) "Labour Migration as a Positive Factor in the continuity of Tonga Tribal Society", in Southall op. cit., pp. 230-241.

Waino, E. A. (1968) " A Geography of the Tea Industry in Kenya". Unpublished M.A. Thesis, Syracuse University.

Waller, P. P. et al (1968) Basic Features of Regional Planning in the Region of Kisumu, Kenya. Berlin: Deutsches Institut fur Entwicklungspolitik.

Wesche, R. (1971) "Recent Migration to the Peruvian Montana". Cahiers de geographie de Quebec, Vol. 15, No. 35, pp. 251-266.

Wilkie, R. (1973) "Toward a behavioural Model of Peasant Migration: an Argentine Case of Spatial Behaviours by Class levels", in R. N. Thomas (ed.), Population Dynamics of Latin America. A Review and Bibliography. East Lansing: Conference of Latin Americanist Geographers.

Wilson, A. G. and Rees, P. H. (1975) "Population Statistics and Spatial Demographic Accounts", The Statistician, Vol. 23, No. 3/4: pp. 229-257.

Wolpert, J. (1967) "The Basis for stability of Interregional Transactions", Geographical Analysis, pp. 152-80.

The World Bank (1980) Population and Development in Kenya. Report No. 2775-KE. Washington, D.C.: Development Economics Department, East Africa Country Programmes Department.

Yap, L. (1975) Internal Migration in Less Developed Countries: A Survey of Literature. World Bank Staff Working Paper No. 215. Washington, D.C.: Employment and Rural Development Division Development Economics Department.

Zelinsky, W. (1971) "The Hypothesis of Mobility Transition", The Geographical Review, Vol. 61, pp. 219-249.

Zipf, G. K. (1946) "The $P_1 P_2/D$ Hypothesis: on the Inter-City Movement of Persons". American Sociological Review, Vol. 11, pp. 677-686.

Zipf, G. K. (1949) Human Behaviour and the Principle of Least Effort. Cambridge, Mass.: Addison-Wesley Press.

APPENDICES

SCHEDULE A

APPENDIX I

KERICHO POPULATION STUDY

QUESTIONNAIRE FOR HEAD OF HOUSEHOLD

001 - 006 IDENTIFICATION:

001. Tea Company ---------- 003. House No. .....

002. Residential Estate ..... 004. Working Estate/ Factory .....

005. Name of Respondent .....

006. Relationship to Head of Household .....

007 - 010: Record of Interview by Enumerator.

	1st call	2nd call	3rd call	Remarks
007. Date of Interview	.....	.....	.....	.....
008. Time Interview Begins	.....	.....	.....	.....
009. Time Interview Ends	.....	.....	.....	.....
010. Duration of Interview	.....	.....	.....	.....

011. COMMENTS OF NON-INTERVIEW AND RELATED CASES.

.....

.....

.....

012. - 022: ETHNIC ORIGIN:

Ethnic Group:

012. African .....

013 European .....

014. Asian .....

015. Other (specify) .....

016. If African, state the tribal group:

016. Luo:.....

017. Luhya:.....

018. Gusii:.....

019. Kuria:.....

020. Kalenjin-speaking (specify):.....

021. Kikuyu:.....

022. Other (specify):.....

023 - 028: RELIGIOUS AFFILLIATION.

023. Which religion do you belong to?

024. Protestant:.....

025. Catholic:.....

026. Muslim:.....

027. Atheist:.....

028. Other (specify):.....

029 - 030: SEX.

029. Male:.....

030. Female:.....

031 - 041: AGE:

How old are you in completed years? (Mark below):

Age group (mark with x)		State exact age
031.	15-19	
032.	20-24	
033.	25-29	
034.	30-34	
035.	35-39	
036.	40-44	
037.	45-49	
038.	50-54	
039.	55-59	
040.	60-64	
041.	65 and over	

042 - 048: BIRTHPLACE AND USUAL RESIDENCE (PERMANENT HOME)

	Locality	Place of Birth	Permanent Home
042.	Country		
043.	Province		
044.	District		
045.	Division		
046.	Location		
047.	Sub-Location		
048.	Village/Town		

049 - 059: MARITAL STATUS.

049-053: What is your Marital status?

049. Single:.....

050. Married:.....

051. Separated:.....

052. Divorced:.....

053. Widowed:.....

054-059: If married male, give the following information about spouse(s).

Spouse(s) (in order of Marriage)	Age (in yrs)	Residence			No. of children born alive by her.	Other Remarks
		Living in H/h.	Living at Home	Living Elsewhere.		
054. First						
055. Second						
056. Third						
057. Fourth						
058. Fifth						
059. Sixth						

060-069: EDUCATIONAL ATTAINMENT.

060-066: What is your highest standard of education?

Educational standard reached	Exact class	Remarks
060. None and illiterate	.....	.....
061. None but literate	.....	.....
062. Not stated	.....	.....
063. Primary Stds. 1 - 8	.....	.....
064. Secondary Forms I-IV	.....	.....
065. Secondary Forms V-VI	.....	.....
066. University (Dip, Degree, etc.)	.....	.....

067-069: Have you undergone any training besides formal education?

067. Yes:.....

068. No:.....

069. If so, describe briefly:.....

.....

.....

070-099: ECONOMIC STATUS AND ACTIVITY.

070-073: State your occupation before and after migration to Kericho.

	Before Migration	After Migration
070. Type of Work	.....	.....
071. Place of Work	.....	.....
072. Income (Shs. p.m./p.a)	.....	.....
073. Classification	.....	.....

074-084: If you changed your occupation, what reasons led to that?

Working Confitions	Other Reasons
074. No job opportunities	080. Better Status .....
075. Better income	081. Closeness to Home .....
076. Easier Work	082. More time for
077. Prefer present work	Children .....
078. Forced by circumstances..	083. More secure .....
079. Other (specify).....	084. Other (specify).....

085-091: What is your salary per month in your present employment?

Salary Range (in KShs.)	Exact salary (in KShs.)
085. 99 or less	.....
086. 100-199	.....
087. 200-299	.....
088. 300-399	.....
089. 400-499	.....
090. 500-999	.....
091. 1000 or more	.....

092-093: How does this income compare with your income before migration?

092. Favourable:.....

093. Unfavourable: .....

094. What other facilities/provisions are you provided with?

.....

095-099: List your property at home from which you derive some income or satisfaction:

Property	Specific types	Owned by you	Owned by parents.
095. Farm (specify acreage and crops)	.....	.....	.....
096. Livestock	.....	.....	.....
097. Fisheries	.....	.....	.....
098. None	.....	.....	.....
099. Other (specify)	.....	.....	.....

100-141: MOBILITY CHARACTERISTICS:

100-104: State your movements over the last five years:

Period	Rural-Rural	Rural-Urban	Length of Stay
100. 1974 to Date	.....	.....	.....
101. 1973 - 1974	.....	.....	.....
102. 1972 - 1973	.....	.....	.....
103. 1971 - 1972	.....	.....	.....
104. 1970 - 1971	.....	.....	.....

105. In which year did you migrate to Kericho tea estates? .....

106-110: Through what medium did you learn of job prospects here?

106. Relative/Friend:.....

107. Radio:.....

108. Newspaper Advertisement:.....

109. Recruitment by the Estate staff:.....

110. Other (specify):.....

110-113: How did you settle down in the new abode?

110. Stayed with relative/friend:.....

111. Given own house:.....

112. Rented a house elsewhere:.....

113. Other (specify):.....

114. How far is your permanent home from Kericho? .....
(Miles/Kms.).

*Indicate name of the biggest local market or school:....

.....

115-116: Have you visited your home since migrating to Kericho?

115. Yes:.....

116. No:.....

117-121: How often do you visit your home?

117. Every weekend:.....

118. Every month end:.....

119. Leave/Public Holiday:.....

120. Other (specify):.....

121. Never:.....

122-125: Who are living at your home?

122. Father:.....

123. Mother:.....

124. Other relatives (specify):.....

125. None:.....

126-131: What are your future migration plans?

126. Stay in Kericho as long as my services are required:.....

127. Stay permanently in Kericho:.....

128. Move elsewhere (a) (Rural-rural):.....

(b) (Rural-Urban):.....

129. Return home:.....

130. Uncertain:.....

131. No Response:.....

132-138: Rank in order of importance the major reasons which may have made you leave your home area:

Reasons for leaving home area	Rank order
132. Population pressure on land	.....
133. Unreliable crop yields	.....
134. Floods	.....
135. Drought	.....
136. Famine	.....
137. Witchcraft	.....
138. Other (specify)	.....

139-140: Did any of these environmental problems induce you to migrate from your home area?

139. Yes:.....

140. No:.....

141. If so, state the problems according to the rank order.....

.....

142-156: HOUSEHOLD DATA.

Complete the following table about members of your household beginning with the head of household who should be marked with an asterisk.

No.	Name	Sex		Age	Relationship to Head of House hold.	Marital Status	Occupation	Seen(s) or Not seen (Ns)
		M	F					
142.								
143.								
144.								
145.								
146.								
147.								
148.								
149.								
150.								
151.								
152.								
153.								
154.								
155.								
156.								

157-162: FERTILITY DATA.

No. of children by sex, Born in the last 5 years in the Household.

	Name of child.	Sex		Age (in months or yrs.) or year of Birth	Alive	Passed away	Where Born		Order or Birth	Age of mother	Relationship to Head of H/hold.
		M	F				Hospi	Home			
157.											
158.											
159.											
160.											
161.											
162.											

163-169: MORTALITY DATA.

Persons who have passed away in the last 5 years in the Household.

	Name of Deceased.	Sex		Age (in years or months) or month/ year of death.	Cause of Death.	Relationship to Head of Household.
		M	F			
163.						
164.						
165						
166.						
167.						
168.						
169.						

170-185: POPULATION CHANGE.

170-173: How many children had you before and after migration to Kericho?

171. Number of children before migration .....
where living .....

172. Number of children after migration .....
where living.....

173. Absolute change:.....

174-175: Has any of your relatives migrated to Kericho after you had secured your present employment?

174. Yes:.....

175. No: .....

176. If so, how many?: .....

Did you tell or help them about job opportunities in Kericho?

177-179: Told them about job opportunities:.....

177. Did not tell them about job opportunities:.....

178. Helped them to secure employment:.....

179. Did not help them to secure employment:.....

180-182: Did they stay with you or other relatives before establishing themselves?

180. Stayed with them:.....

181. Did not stay with them:.....

182. Stayed with other relatives:.....

183-185: Are there some of your friends/relatives looking for jobs in the tea estates?

183. Yes: .....

184. No: .....

185. Don't know: .....

186-187: EDUCATIONAL NEEDS.

186. As an adult what type of education would you like to have during leisure time?

186.(a) .....

186.(b) .....

186.(c) .....

186.(d) .....

187. What benefits would you derive from such education?

187.(a) .....

187.(b) .....

187.(c) .....

187.(d) .....

188. How else would you like to spend your leisure time?.....

.....

.....

ENUMERATOR'S SIGNATURE ..... DATE.....

QUESTIONNAIRE FOR MARRIED FEMALES AGED 15 TO 49 YEARS.

01-10: Tea Company ..... 03. House No. .....

02. Residential Estate ..... 04. Working Estate/ Factory:.....

05. Name of Respondent:.....

06. Relationship to Head of Household:.....

07-10: Record of Interview by Enumerator.

	1st call	2nd call	3rd call	Remarks
07. Date of Interview	.....	.....	.....	.....
08. Time Interview Begins	.....	.....	.....	.....
09. Time Interview Ends	.....	.....	.....	.....
10. Duration of Interview	.....	.....	.....	.....

11. COMMENTS ON NON-INTERVIEW AND RELATED CASES.

.....

.....

.....

12-22: ETHNIC AND TRIRAL ORIGIN.

12-15: Ethnic Group:

12. African:.....

13. European:.....

14. Asian:.....

15. Other (specify):.....

16. If African, state the tribal group of your husband and yours:

Tribal group	Wife (Respondent)	Husband (Spouse)
16. Luo	.....	.....
17. Luhya	.....	.....
18. Gusii	.....	.....
19. Kuria	.....	.....
20. Kalenjin-speaking (specify).	.....	.....
21. Kikuyu	.....	.....
22. Other (specify)	.....	.....

23-27: RELIGIOUS AFFILIATION.

23. Which religion do you belong to?

24. Protestant:.....

25. Catholic:.....

26. Muslim:.....

27. Atheist:.....

28. Other (specify):.....

29-30: SEX.

29. Male:.....

30. Female:.....

31-38: AGE.

How old are you in completed years? (mark below):

	Age group	Exact age
31.	15-19	
32.	20-24	
33.	25-29	
34.	30-34	
35.	35-39	
36.	40-44	
37.	45-49	
38.	50 and over	

39-45: PLACE OF BIRTH AND PLACE OF CURRENT MARRIAGE (HOME).

State your Birth place (parents' home) and place of Marriage (Home):

	Locality	Birth place	Place of Marriage (Here)
39.	Country		
40.	Province		
41.	District		
42.	Division		
43.	Location		
44.	Sub-location		
45.	Village/Town		

46-56: MARITAL INFORMATION.

46. How many times have you been married? .....

47-50: State your age at first marriage, when it ended and your age or break with subsequent marriages, if any:

	Order of Marriage	Age	
		At beginning of marriage	At end of marriage.
47.	First	.....	.....
48.	Second	.....	.....
49.	Third	.....	.....
50.	Fourth	.....	.....

51. What is the order of your present marriage? (1st/2nd/3rd/4th etc.) .....

52-54: Were you married by your present husband at home or while in Kericho?

52. Marriage took place at home: .....

53. Marriage took place in Kericho: .....

54. Marriage took place elsewhere (specify): .....

44-56: Did you and your husband migrate together or separately?

55. We migrated together: .....

56. We migrated separately: .....

57-65: EDUCATIONAL ATTAINTMENT.

57-63: What is your highest educational attainment?

	Educational Standard reached	Exact Class	Remarks
57.	None and illiterate	.....	.....
58.	None but literate	.....	.....
59.	Not stated	.....	.....
60.	Primary Stds 1-8	.....	.....
61.	Secondary Forms 1-IV	.....	.....
62.	Secondary Forms V-VI	.....	.....
63.	University (Dip. Degree, etc.)	.....	.....

64-65: What is the educational standard of your parents?

64. Father:.....

65. Mother:.....

66-69: ECONOMIC STATUS AND ACTIVITY.

State your occupation before and after migration to Kericho:

		Before Migration	After Migration
66.	Type of work	.....	.....
67.	Place of work	.....	.....
68.	Income p.m./p.a.	.....	.....
69.	Classification	.....	.....

70-97: FERTILITY AND MORTALITY DATA.

Give the following information about your own children:

Name of living child	Sex		Age of living child.	Mark "1" if dead.	Age at Death yrs/months.	Education by class reached.	Where Living	
	M	F					Kericho	Elsewhere
71.								
72.								
73.								
74.								
75.								
76.								
77.								
78.								
79.								
80.								
81.								
82.								
83.								
84.								
85.								

86-88: Are you willing to have any more children?

86. Yes: .....

87. No: .....

88. No Response: .....

89-92: If so, how many more would you like to have?

89. Specific number (state): .....

90. As many as God provides: .....

91. Don't know: .....

92. No Response: .....

92-95: In general, do you breastfeed or bottlefeed your baby?

93. Breastfeed baby ..... length of time .....

94. Bottlefeed baby ..... length of time .....

95. Both: .....

96-97: How many of your children were born before coming to and during the course of your stay in Kericho? (Indicate by numbers as shown above):

96. Before coming to Kericho-Nos.: .....

97. During the stay in Kericho-Nos.: .....

98-112: MISCELLANEOUS.

98-100: Does your husband have any other wives?

98. Yes: .....

99. No: .....

100. If so, how many? .....

101-103: Where are the other wives staying?

101. Here in Kericho:.....

102. At home:.....

103. Elsewhere (specify):.....

104-105: How many brothers and sisters does your husband have?

104. Brothers:.....

105. Sisters:.....

106-107: Are there persons other than your own children staying with you?

106. Yes:.....

107. No:.....

108-112: If so, state the following about them:

Name of Person	Sex		Age	Relationship to Head of Household.	Year of in-migration	Year of out-migration.
	M	F				
108.						
109.						
110.						
112.						

ENUMERATOR'S SIGNATURE..... DATE:.....

APPENDIX II

SUMMARY TABLE FOR THE REGRESSION MODEL

Variables in the Equation								Variables not in the equation.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Step	Variable	R	Standard Error	R^2	Change	Regression Coefficient	F-ratio	Standard Error of Beta	Variable	Partial Correlation Coefficient.
1	Tij	.9806	.2195	.9617	.617+	b_{Tij} = .9838+	150.575	.0802		
									Dij	-.0160
									Pj	-.8857
									Wij	-.4068
									1ij	-.8518
									Fi	-.8075
									Fj	.5734
									Xi	.9246
									Xj	.8990
2	Xi	.9972*	.0916	.9944*	.0328**	b_{1ij} = 1.2555**	434.840	.0603		
						b_{Xi} = -.5116*	29.457	.0943		
									Dij	-.2800

	(1)	(2)	(3)	(4)	(5)
3	Fi	.9978*	.0918*	.9955	.0011+
4	Fj	.9986*	.0850	.9971*	.0016+

(6)	(7)	(8)	(9)	(10)
			Pj	.3331
			Wij	-.2741
			lij	-.4200
			Fi	-.4432
			Fj	-.2928
			Xj	.2402
b_{lij} = 1.3461**	150.456	.1097		
b_{Xi} = -.4046^{+}	7.933	.1436		
b_{Fi} = -.2464^{+}	0.978	.2492		
			Dij	.3936
			Pj	.5000
			Wij	.5845
			lij	-.5301
			Fj	.5768
			Xij	.5390
b_{lij} = 1.5300**	76.241	.1762		
b_{Xi} = -.1809^{+}	.684	.2188		
b_{Fi} =-1.3790^{+}	2.302	.9089		

(1)	(2)	(3)	(4)	(5)
5	Dij	.9995*	.0596	.9991*	.0019+
6	Wij	.9999	.0123	.9999	.0009+

II Cont.

(6)	(7)	(8)	(9)	(10)
b_{Fj} = .6432^{+}	1.660	.4992		
			Dij	.8200
			Pj	.5032
			Wij	.4613
			lij	.2643
			Xj	.5421
b_{Tij} = 1.9682**	62.602	.2487		
b_{Xi} = .3452^{+}	1.310	.3016		
b_{Fi} =-2.7488*	8.753	.9291		
b_{Fj} = .9223*	6.013	.3762		
b_{Dij} = .6102^{+}	4.104	.3012		
			Pj	-.1706
			Wij	.9892
			lij	.4798
			Xj	.9885
b_{Tij} = 2,2958**	1052.939	.0707		
b_{Xi} = .6772**	72.604	.0795		

APPENDIX II Cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					b_{Fi} = -3.6069**	244.766	.2305		
					b_{Fj} = 1.7678**	143.813	.1474		
					b_{Dij} = 1.4096**	111.042	.1338		
					b_{Wij} = -.7419**	45.638	.1098		
								Pj	1.0000
								lij	.9999
								Xj	1.0000

* Significant on the 95 percent level.

** Significant on the 99 percent level.

\+ Not significant.