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**Internal Migration in the Sudan
Some Demographic and Socio-Economic Aspects**

by

Abdelhalim E. El Farouk

**A Thesis submitted in fulfilment
of the requirements for the degree of
Doctor of Philosophy**

Department of Geography

The University of Durham

1991

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25 APR 1991

Abstract

The outstanding characteristics of the population geography of the Sudan are seen in its vastness of the area, its low population density, its high population fertility, decreasing mortality rates and uneven distribution of developmental projects among its regions. All these have important effects upon the economic and demographic characteristics of its population. They also underline the uneven distribution of the country's population, as a result of which large-scale migration movements occur.

Three types of population movements in the Sudan are discussed; inter-provincial movements, rural-urban migration and seasonal migration for cotton picking in the Gezira scheme. In the discussion of the first type, the analysis covers issues related to the general levels of movements amongst the 18 provinces of the country, rates of in- and out-migration in each province and their net migration balances. Also, it discusses the spatial structure of the movement, and some gaining and losing provinces are singled out. The impacts of the movements and their selective nature are also revealed.

Rural-urban migration to the capital city of Khartoum is studied using the 1983 census data, other published data and the author's 1988/89 survey of migrant households in the city. The scale of the migration and the characteristics of the migrants are analyzed. Additionally, the structure of the migrant households, literacy, occupation contrasts and links with the village are investigated. The reasons behind the migration decision and the reward of the rural-urban migration are also shown.

Seasonal migration is discussed to disclose the nature of the movement and its patterns which are associated with the cotton picking operation in the Gezira

scheme. The types of labour involved and labour market conditions are also investigated. The findings verified the seasonality of the movement to the scheme and the consistent relationship between migrants and tenants in the scheme.

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In the Memory of My Sister Awatif

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Chapter I

Introduction

One of the most striking characteristics of the Sudanese population is its high degree of mobility. Based on the 1973 census data, the ILO (1976) mentioned that, *the population of the Sudan is mobile to an extraordinary degree: we estimate that upwards of 1 million men and women are on the move every year in search of income-earning opportunities* (p. XXII). The movement of the nomads was excluded from this figure and, if added, then about one in every four persons of the adult population in the Sudan would be classified as a migrant in search of work and better life every year.

The main causes of these movements can be attributed to the regional and sectoral bias of the development policies of successive Sudanese governments both before and after independence. Government preoccupation with aggregate levels of investment and rates of growth in total production led to an uneven distribution of economic growth and welfare. The various development programmes and plans (e.g. the Programme of Development 1946-56, the Ten Year Plan 1961/62-70/71, the Five Year Plan 1970/71-74/75, and the Phased Programme of Action 1972) were mostly concerned with fitting projects under national objectives. Many of the projects were conceived at the national level which in many cases failed to fit local conditions (for example, the establishment of a milk industry in a nomadic area in South Kordofan).

High potential, availability of information, experience and better infrastructure

of some regions and government's pressing needs for quick returns have led to the concentration of developmental projects in these regions, namely the Central, the Eastern and Khartoum regions. In the process of development these three regions (out of nine regions) emerged as the national core where most of the industrial and agricultural production is generated. This situation has led to heavy concentration of social services and has resulted in a continuous attraction of further growth and development at the expense of other areas in the country. As a result of the absence of balanced regional economic and social development, people have been moving from the less fortunate areas in Kordofan, Darfur, Northern and Southern regions to the regions of the east and centre. Deprivation of certain regions and relative endowment of others disturb the equilibrium of employment by creating lower job opportunities in one area and higher opportunities in another. Such disturbance shapes and forms the *push* and *pull* factors at both ends of the migration flow. Therefore, the general direction of internal migration in the Sudan is largely determined by the prevailing regional economic disparities and imbalances. This migration could be between rural areas (rural-rural), from rural to urban areas (rural-urban), or between urban areas (urban-urban). Any of these types of moves might necessitate crossing of borders between provinces. The consequence is a wide range of variation in the regional and provincial population densities and migration rates.

On the other side, the sectoral economic bias in the country is clear from the attention and heavy concentration of governments on modern agriculture (mainly in the Central and Eastern regions) at the expense of the large traditional agricultural sector where millions of people live. This situation kept the people of the latter sector dependent, to a large extent, on wages derived from working in the

modern irrigated and mechanized agricultural schemes as seasonal or permanent migrant labourers, and/or from income gained from working in the large urban centres, mainly Khartoum.

This disparity in development and the consequent large number of moves made to reallocate the human resource in an economic and efficient way, makes the migration process inside the country worthy of study. This is because the movement of the people deprives the poor regions of the most important element needed in development, which is the human element. Because of the selective nature of the Sudanese internal-migration process, as we will see later, these poor regions are depleted by the move of the economically active, physically strong, and literate people. Not only that, but also the receiving areas, mainly urban centres, are overwhelmed by the unplanned movements of large numbers of migrants which adversely affects their social and service structures.

Being a phenomenon of such great importance in economic, social, demographic and political terms, internal migration in the Sudan will be under scrutiny, and its nature, its causes and its consequences will be our focal points in the discussion which follows in the subsequent chapters. The discussion covers three types of internal movements in the Sudan; inter-provincial movement, rural-urban migration and seasonal migration to the agricultural schemes.

1.1 Objectives of the Study

This study concentrates on certain aspects of migration, and attempts to fulfil the following objectives:

- a. To provide summary information about the Sudanese economy, its sectors and

the link between these sectors and the population in the areas of employment and job opportunities.

- b. To make use of the 1983 crude census data on lifetime migration. The aim is to trace the volume and direction of the migration flows amongst the 18 national provinces. By doing so, this analysis will enable us to draw a clear picture of the direction of the movement, to identify the main provinces of migration gain and loss, and, in a broad sense, to identify the most important factors behind these movements.
- c. As rural-urban migration is the dominant type of movement in the Sudan and is becoming of greater interest to many of the native as well as foreign economists, geographers and demographers, one of the main objectives of this research is to study this phenomenon to check for the nature, causes and consequences of the contemporary *free* migration to the Sudanese urban centres, taking Khartoum conurbation as our case study.
- d. As another important type of Sudanese population movement, our study of the seasonal migration to the Gezira Scheme fulfils the objective of investigating the nature of this particular type of move from the traditional agricultural sector to the modern one. This enables us to check for the truth and reality of the seasonality of the move and whether or not this seasonality has remained a feature since the establishment of the scheme in 1926.

1.2 Methodology

The discussion depends mainly on data from published censuses and surveys and on field surveys carried by the author in 1988/89. In the phase of the data

entry of the author's two surveys and of some of the crude data of the 1983 census, computer software were used, namely Dbase III Plus, and the Lotus 123. In this stage of the analysis, beside the ones mentioned, another group of software was used mainly SPSS/PC+ V2.0, GIMMS, and Harvard Graphics. Crosstabulation, frequency tables, graphs and maps were used in the analysis. Correlation, regression and chi-square statistical tests were also applied in the analysis of different events.

Following this introduction, the study is divided into six chapters:

Chapter II:

The political boundaries and the administrative divisions of the Sudan are described and there is an introduction to the Sudan economy and its various sectors. The resource potentials, performance and obstacles in each sector are discussed, together with the contribution of each to the employment of the Sudanese labour force. Gradually, this leads us to introduce the population of the Sudan and enables us to discuss the various aspects of it.

Many of the less developed countries lack proper and accurate methods for the collection of population statistics and have no up to date population data. Sudan is no exception and, as commentary on this situation, the chapter discusses the sources of population data in the country, their merits and shortfalls. Furthermore, the chapter also throws light on population distribution, growth and mode of living in the different regions of the country. It concludes with a discussion of the problems of defining the labour force, the country's labour force potential and the extent to which the growth of job opportunities matches the growing number of workers.

Chapter III:

This chapter begins the discussion of migration by introducing some of the most important theories in the field. Some five theories are introduced and discussed to provide a platform for what follows in the subsequent chapters. In addition, the chapter spells out the basic determinants and consequences of the migration process as revealed by the literature. Furthermore, the chapter provides general information about internal migration in the Sudan including both long and short-term movements. This reveals the characteristic features of the migration process, its selectivity and the motives behind it. Subsequent chapters provide a more detailed discussion of various aspects of internal migration in Sudan.

Chapter IV:

This chapter is a macro-level analysis of lifetime migration in the Sudan. The focal points of the discussion are the volume and direction of population movement amongst the 18 provinces of the country. Population matrices of gross, net and impact migration flows are presented and discussed. Some provinces are selected as top net gainers or losers in the lifetime migration process and these are used to support a discussion of the general factors behind these moves and the effect of distance on the move. It also discusses the selective nature of the movements and ends with a summary conclusion.

This chapter is heavily dependent upon the 1983 census lifetime migration data (place of birth data). Some of the limitations of such data are mentioned in section 1.3 below and the rest are examined in more detail in the chapter itself.

Chapter V:

The objective of this chapter is to give a closer look at one type of population movement in the Sudan. This constitutes a micro-level analysis of rural-urban migration, depending on the household survey in Khartoum conurbation. It discusses the concept of urbanization in the Sudan, and investigates its link with rural-urban migration; this requires us to discuss the size of migration to the capital city based on the 1983 census data.

The chapter also discusses the methodology of the survey conducted by the author and its findings. These findings involve analysis of the structure of the migrant household, educational attainment and occupational structure of the migrant population, the rural-urban links involved in this type of migration and the reasons behind these moves to the urban centres. In the discussion the author tries to link these empirical findings with the theoretical frameworks discussed earlier in chapter three.

Chapter VI:

As another important type of migration prevailing in the Sudan, seasonal migration to the agricultural schemes is the concern of chapter six. The chapter depends on two sources of data; published data and data from two surveys in the cotton fields and in the camps of the seasonal migrant cotton pickers in the Gezira Scheme. The methodology followed in the two surveys is discussed.

The chapter begins with a discussion of the contribution of the Sudanese agricultural sector to employment and job creation in the country in comparison with other sectors. Later in the chapter the discussion focuses on the size and different types of labour force in the Gezira Scheme. One of these types is the seasonal

labour; the analysis shows the mechanism of these seasonal movements and the different forces and factors involved. The nature of the movement and the demographic and economic characteristics of the seasonal labour are also investigated. Concluding remarks, recommendations and research perspectives come at the end of the chapter.

Chapter VII:

This final chapter sums up the key points in the discussion and lists some of the more important findings. It also proposes some areas of research that are regarded as important to be conducted in the very near future.

Appendices

The appendices placed at the end of the thesis contain a selection of the detailed data on which the discussion in the main body of the work is based.

1.3 Limitations

The overall discussion descends from a macro-level of analysis of Sudanese population movement (inter-provincial movement), to a micro-level (rural-urban and seasonal migration), and combines both census and survey data. The advantage of such a combination of two types of data is that it provides two sources of data which can be combined to give a more reliable and elaborate picture. At the same time, this combination provides more detailed information on migrants, such as data on their demographic characteristics, education, economic activity and other socio-economic conditions. As is common in migration studies, reasons and motives for population movements in the Sudan are investigated only through survey data using direct questions.

But the data used have a number of limitations; some of these limitation are listed below and some are stated at different stages in the analysis. For example, the 1983 census data used in the analysis were published only in 1989 a thing which reduces the value of the data and its relevance in the 1990s. This problem is exemplified by the fact that in 1983 the population of Khartoum conurbation was 1.8 million while some current estimates put it at 4 million; this figure was being previously forecast to be reached in the year 2000. Therefore, one of the limitations of the data is the prolonged delay in the publication of the census data; other limitations include:

- a. The use of place of birth census data provides only retrospective data on the migration of those alive at the time of the census and thus it excludes the moves of those who did not survive to the census date.
- b. Such data allow only gross estimates of lifetime migrants at the area of destination but provide no information on the number of moves involved prior to the migration to the destination for each migrant.
- c. The survey data on the other hand, limit the geographical detail of data, or the detail of tabulations and analysis. This is because of the fact that our surveys were confined to certain areas (see chapters V and VI) and were not large enough to allow for estimates of migration to be generalized nationwide.
- d. Because of the inconsistent definitions of some elements involved in the analysis (e.g. definitions of urban areas, labour force, etc..) and questions in the Sudanese surveys and censuses about migration, it becomes difficult in this study to establish time trends of, and cycles in, rural-urban migration and other moves.

- e. Also, the study is confined to a discussion of the process of internal migration in its free form. That is to say, the recent movement of the people as a result of drought and desertification, and civil war in the southern Sudan (*called the displaced people*) is not comprehensively discussed. This is due to the time constraint, absence of actual statistical data and, more importantly, such movement is in need of discussion in a separate research project because of the various distinctive economic, social, demographic and political aspects involved in it.

The presentation of this research comes at the end of a wide-ranging investigation of many aspects of migration in the Sudan. A major problem for the author proved to be the selection of the most important aspects of the topic for detailed discussion.

Chapter II

The Republic of the Sudan: Economy and Population

2.1 Location and Administrative Divisions

The Republic of the Sudan, with a land area of 2,506,000 sq km, is the largest country in Africa, its nearest rivals in this respect being Algeria (2,382,000 sq km) and Zaire (2,345,000 sq km). The Sudan is located in Northern Africa, extending from latitude 4° to 23° N, and from longitude 21°45" to 38°30" E. The country is bounded by Egypt in the north, in the east by Ethiopia and the Red Sea where the coast in the northeast stretches for about 725 km; on the south by Kenya, Uganda and Zaire; on the west by the Central Africa Republic and Chad; and in the northwest by Libya. From Nimoly town in the far south to Halfa in the far north, the country extends for about 2,040 km. It stretches for 1,600 km from east to west (see Figure 2.1).

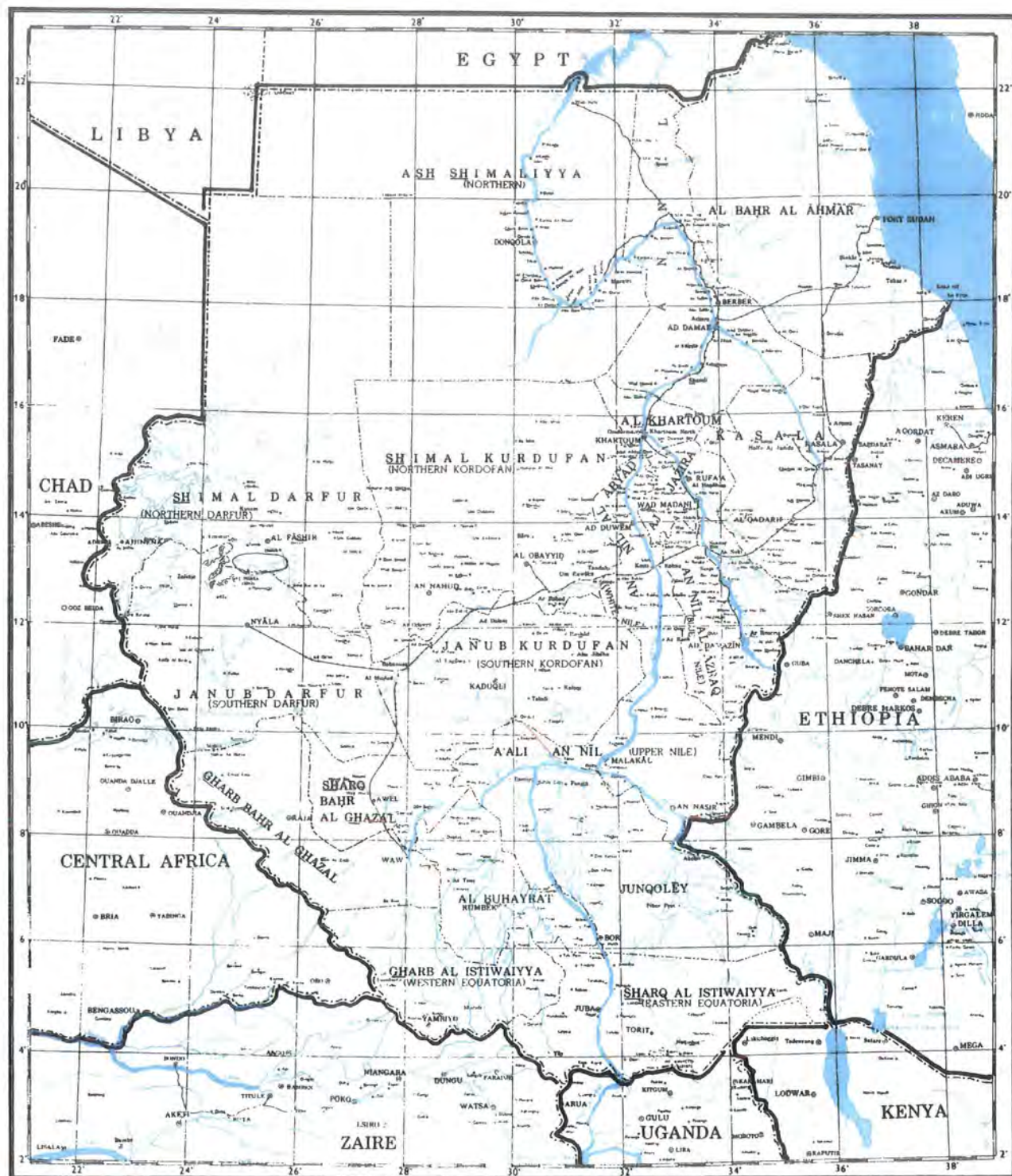
The country was declared independent in January 1956, after being under the bilateral rule of Britain and Egypt for 57 years. Administratively, the Sudan is divided into nine regions, six regions in the northern part of the country and three regions in the southern part. In a broader administrative division the six northern regions are called the Sudan North, while the other three southern regions are called the Sudan South. The regions of the Sudan North and the Sudan South are divided into smaller divisions called provinces. Table 2.1 indicates the country's regions and provinces together with their land areas and populations.

Table 2.1: Administrative Divisions of the Sudan and their Populations in 1983

Regions and Provinces	Area		Population	
	000 km ²	%	000	%
Sudan North	1858	74.14	15,297	74
Khartoum Region	021	00.84	1,802	09
Khartoum Province	-		1,802	
Northern Region	477	19.03	1,074	05
Northern Province	-		526	
Nile Province	-		548	
Eastern Region	341	13.61	2,208	11
Red Sea Province	-		420	
Kassala Province	-		1,788	
Central Region	142	05.67	4,026	19
Blue Nile Province	-		1,031	
White Nile Province	-		849	
Gezira Province	-		2,146	
Kordofan Region	381	15.20	3,093	15
North Kordofan Province	-		1,732	
South Kordofan Province	-		1,361	
Darfur Region	496	19.79	3,094	15
North Darfur Province	-		1,207	
South Darfur Province	-		1,887	
Sudan South	648	25.86	5,271	26
Upper Nile Region	236	09.42	1,600	08
Upper Nile Province	-		803	
Jongley Province	-		797	
Bahr al Ghazal Region	214	08.54	2,265	11
Bahr al Ghazal Province	-		1,495	
Lakes Province	-		770	
Equatoria Region	198	07.90	1,406	07
East Equatoria Province	-		1,040	
West Equatoria Province	-		366	
Sudan	2,506	100	20,568	100

Source: Derived from Department of Statistics, 1983

Figure 2.1: The Republic of the Sudan



Scale 1:8,000,000

REFERENCE

Capital of Country, KHARTOUM	International Boundary	Province Boundary
Other Headquarters	AD DAMAR	Province Boundary
Province Headquarters	BOR	Railway
Other Towns	Marsh	

As the Table shows, these units vary considerably in both size and population. At the regional level, the extremes of size are represented by Khartoum province, with an area of 21,000 km² and Darfur which covers 496,000 km²; regional populations range from 4,026,000 in Central to 1,406,000 in Equatoria. Of the two major divisions of the country, Sudan North occupies about three-quarters of the national territory and contains a similar share of the total population.

2.2 The Sudan Economy

The traditional economy of the Sudan involved four main elements:

(a) traditional pump and flooding irrigation along the Nile and in the deltas of the Tokar and Gash, (b) livestock raising in areas at a distance from the Nile, (c) subsistence mixed farming in the south, and (d) trade in old towns on the Nile like Barber, Sennar and Shendi and in nomadic areas as well.

A major change in the economy was brought about by the introduction of modern irrigation schemes, beginning with the Gezira Scheme in the 1920s based on gravity irrigation from the Blue Nile waters stored at the Sennar dam. Including the replacement of the traditional irrigation techniques used on the Nile banks by motor driven pumps, other changes in irrigation techniques have continued from the 1920s to the present. The result of introducing modern irrigated agriculture has been to give hundreds of thousands of people far more security than before, along with modest cash incomes.

Industrialization began after the First World War but developed at a very slow rate. Even after independence in 1956, manufacturing output amounted to only 5% of total output. In 1987/88 manufacturing output accounted for about 7.5% of the country's Gross Domestic Product (GDP). Table 2.2 gives details of GDP

for the period 1982/83-1987/88 by sectors of economic activity.

In order to have a better idea of the whole economy, it is necessary to deal with some of the important sectors in turn and to assess their performance in the recent period.

2.2.1 Agricultural sector

This is the dominant sector in the Sudanese economy and is expected to remain so for several decades. In recent years it has contributed between 30% and 40% of the GDP of the country and it accounted for more than 98% of the country's exports in 1986. Agriculture is the backbone of the Sudan economy. Over 50% of Government revenues are derived directly or indirectly from agriculture. Taking into account the area of unsettled land with access to potential irrigation water or adequate rain, one estimate puts the potentially arable land surface at about 200 million feddans. Only 15 million feddans (7.5%) are now under crops. There are three main types of agriculture

1. Irrigated agriculture
2. Mechanised rainfed agriculture
3. Traditional agriculture

2.2.1.1 Irrigated agriculture

According to ILO (1976) statistics, the total area under irrigation in the Sudan amounted to 4 million feddans. Of this area, 2.1 millions are managed by the Sudan Gezira Board (SGB), which administers the Gezira Scheme situated between the two Niles. Owned and directed by the government, the Gezira scheme is the

biggest agricultural scheme in the country, the main products of which are cotton, groundnuts, dura, wheat and vegetables. Another 1.4 million feddans are irrigated by pumps along the two Niles, mainly south of Khartoum. About 400,000 feddans are irrigated by gravity in the New Halfa (previously known as Khashmal Girba) scheme in Kassala province, and 70,000 feddans in small schemes by the Nile banks north of Khartoum. Other irrigated schemes include the Rahad scheme, the Sugar schemes and the Setit scheme on Atbara River.

The Nile Waters Agreement of 1959 between the Sudan and Egypt fixed the Sudan's share as equal to 20.5 milliard cubic metres of water measured at Roseres dam (ILO, 1976). In 1978 a total of 14.24 milliard cubic metres was used. Today, the water allocated to the Sudan under the agreement is equal only to its current irrigation needs. A partial solution will be found in the completion of Jongley canal in the southern region. This canal is expected to reduce the water evaporation in the suds and would save about 4 milliard cubic metres. This water would be shared equally by the Sudan and Egypt. The estimated cost in 1979 was about £s 70 million to be paid equally by the two countries. Because of the guerilla war in the Sudan South, the canal has not yet been completed.

Cotton, mainly produced in Gezira scheme, is regarded as the most important cash crop. The rain fed cotton in Nuba Mountains, western Sudan, represents only a very small part of the total cotton production which comes almost entirely from Gezira and other irrigation schemes. Other crops like groundnuts and dura are cultivated in these irrigated schemes as well as in the rain fed and traditional agricultural sectors. A significant amount of total groundnut production is in the irrigated schemes, while other crops such as dura, dukhn and sesame are mainly produced by the rain fed sub sector and by the traditional agriculture.

Table 2.2: The GDP in Current Prices for the Period 1982/83-87/88

Economic Activity	1982/83		1983/84		1984/85		1985/86		1986/87		1987/88	
	million £s	%	million £s	%	million £s	%	million £s	%	million £s	%	million £s	%
Agriculture	3,120.4	34.2	3,580.5	31.1	4,215.6	28.1	8,370.6	39.8	12,488	40.7	16,290.3	40.0
Industry	787.8	8.6	1,037.0	9.0	1,459.2	9.7	1,442	6.9	2166	7.0	3,091.4	7.5
Mining	5.1	0.05	5.5	0.04	6.0	0.03	20.5	0.10	34.0	0.10	44.2	1.00
Water & Elect.	93.6	1.02	175.3	1.5	275.7	1.8	543.8	2.6	607	2.0	829.4	2.0
Constructions	604.9	6.6	666.7	5.8	840.7	5.6	1,069.2	5.1	1,521	5.0	2,072.2	5.1
Commerce	1,418.4	15.5	2,095	18.1	3,217.2	21.4	2,870.5	13.7	4,405	14.4	5,805.8	14.2
Transport	936.5	10.3	1,105.6	9.6	1,271.6	8.5	2,098.7	9.9	3,212	10.5	4,225	10.4
Estates & Credit	1,143.6	12.5	1,500	13	1,878.3	12.5	2,177.5	10.4	3113	10.1	4,161.3	10.2
Other Services	248.7	2.7	330.8	3.0	754.3	5.0	582.9	2.8	884	2.6	1,181.7	3.0
5 Government Services	76.1	8.5	1,017.8	9.0	1,095.9	7.3	1,823.9	8.7	2246	7.3	3,069.3	7.5
G.D.P.	9,135.1	100	11,514.7	100	15,014.5	100	20,999.9	100	30,676	100	40,770.6	100

Source: *The Economic Report, 1987/88*

2.2.1.2 Mechanized rain fed agriculture

This type of agriculture started in 1945 in Kassala province. By 1968 the area involved was 2.8 million feddans. In the same year the government established the Mechanized Farming Corporation (MFC). In the initial stages this subsector was largely private and unplanned until the MFC took the lead and started a major horizontal expansion. By 1977 a total area of 5.22 million feddans were under mechanized rain fed agriculture. Out of this total, 3.7 million feddans (70.9%) were private farms. In addition, a further 2.5 million feddans have been unofficially developed. About 80% of the cropped area was under sorghum (*dura*) and 20% under sesame (ILO, 1976).

Land clearing is done by a combination of machine and manual labour. Manual labour is needed for weeding and harvesting. Therefore, mechanization is only partial but may be carried out further if more satisfactory and more uniform *dura* varieties are developed in that sector.

Most of the holdings are of 1,000 feddans or more. The MFC schemes allocate 1,500 feddans, of which 500 have to be left fallow. An ambitious plan of expansion has been proposed for South Kordofan, South Darfur, the southern part of Blue Nile province, Upper Nile and Bahr al Ghazal (especially the first two).

The advantages of developing this subsector are clear. It uses a valuable resource namely a vast land area that is difficult, or even impossible, to work without mechanization. Food supplies for domestic consumption and exports would be increased. It requires less investment and public service provision than does irrigated farming. It mobilises private investment and it progresses rapidly. The main problem lies in its complete dependence on the fluctuating annual rainfall. On the

whole the rapid expansion of this subsector is expected to become one of the main components of agricultural growth in the Sudan in the near future.

2.2.1.3 Traditional agriculture

The majority of rural population in the country is engaged in, or dependent on, some form of traditional farming; estimates by the Ministry of Agriculture in 1980 put the figure at about 10 million persons, mainly in the southern and western regions, (Kordofan and Darfur). The main characteristics of this subsector are: the use of primitive cultivation methods involving hand rather than mechanized implements; the dominance of relatively low-yielding crop varieties; and minimal inputs of fertilizers and pesticides.

Family labour is the main labour input. The total area held by one family varies, generally, between two and eight feddans. Production is mainly for self consumption, but it is still jeopardized by bad weather, pests and diseases.

The principal crops cultivated are dukhn (bulrush millet) and dura (sorghum), groundnuts, gum arabic and sesame. This sector contributes only 6% of the total dura production in the whole country. In recent years (1981-1985) the rainfall was very poor in many African and Saharan countries and the Sudan suffered much from the low levels of rainfall. The drought period, which lasted for almost a complete four seasons, hit hard in the western and southern provinces. Famines spread and hundreds of thousands of people left their farm land and moved to the other unaffected regions, particularly the Central, and Khartoum regions.

Mainly concentrated in Kordofan, traditional agriculture is practised in a shifting rotational cultivation. Gum arabic, the second largest exportable crop, is culti-

vated in this belt of the traditional agriculture. The Sudan is said to produce over 90% of the world's gum arabic (Tinker, 1977). Now, as a result of the creeping desert and deteriorating fertility of land, production of gum arabic is declining. The gum arabic is exuded from the Hashab and Talih (*Acacia senegal*). The scrub of these trees is cleared by burning, and sesame, dukhn (millet), dura, maize and other crops are grown in the cleared sandy soil for a period of four to ten years. After that period the young hashab and talih trees will start to give production. After eight to ten years the story repeats itself and the dying hashab will be burnt again.

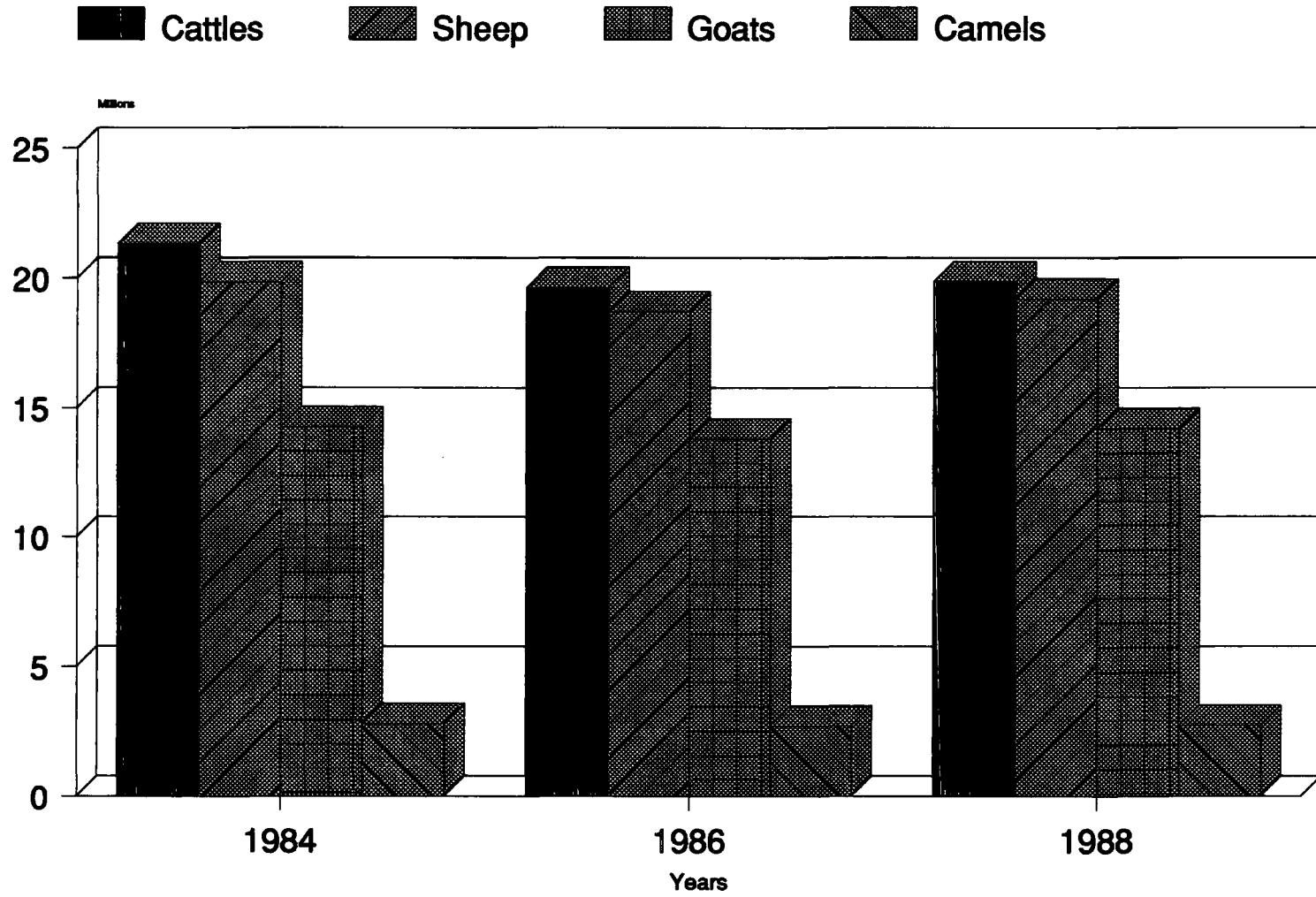
2.2.1.4 Livestock raising

In a comprehensive strategic study for the Sudan in 1974, the International Labour Organization (ILO) and the United Nations Development Programme (UNDP) mission stated that the potential grazing land in the country is about 100 million feddans. About 60% of this area is exploited by traditional herdsmen.

Recently, the country experienced a period of drought that reached its peak in 1984/85 and large numbers of animals died as a result. Despite this fact, the country's potential of animal wealth can still put it among the leading Arab and African countries. The total livestock was 58.2 million in 1984, 54.8 million in 1986, and 56 million in 1988.

From Figure 2.2 it is clear that there was a significant decline between 1984 and 1986 in the numbers of livestock of all four types as a result of drought. Most affected were cattle, which declined 7.9%; the number of sheep fall by 5.8%, goats

Figure 2.2: Estimates of Animal Numbers
For 1984-86-88 (in millions)



Source: Ministry of Animal Wealth, 1989.

Table 2.3: Exports During the Period 1981-86
(in £s mill)

Commodity	1981	1982	1983	1984	1985	1986
Cotton	68.7	120.1	396.0	405.0	374.3	366.7
Groundnuts	66.5	33.2	16.5	26.7	23.1	2.5
Sesame	35.3	38.1	70.2	96.1	97.8	58.9
Gum Arabic	35.7	40.1	76.2	64.1	66.0	141.7
Dura	42.9	107.5	66.6	7.2	-	13.9
Live Stock	35.9	62.2	80.2	92.6	159.4	71.5
Hides & Skins	77.9	8.9	13.8	17.4	38.8	33.7
Cake & Meals	14.6	14.0	24.0	26.2	3.5	14.2
Others	49.4	58.4	67.2	82.0	81.8	130.1
Total	357.0	483.1	810.7	817.3	844.7	833.2

Source: Bank of Sudan: Annual Report, 1986

by 3.1%, and camels by 3.0%. Overall there was a total decline of 5.8%. Between 1986 and 1988 there was some recovery. Total numbers rose by 2.1%, goats by 2.9%, sheep by 2.8%, cattle by only 1.2% and camels by less than 1%.

Table 2.3 shows the Sudanese exports from 1981 to 1986. The contribution of livestock rose steadily from 10.1% in 1981, to 18.9% in 1985, followed by an abrupt fall to 8.6% in 1986. This decline was due mainly to the banning of meat and live animal export by the Ministry of Commerce, a move designed to maintain livestock numbers within the Sudan and to compensate the losses due to drought. The contribution of livestock products to the export trade is, of course, significantly increased by exports of hides and skins, though since 1982 these have been considerably smaller than exports of animals.

2.2.2 Industrial sector

Modern industry started in the Sudan only after the First World War. In 1956 manufacturing output amounted to only 5% of the country's GDP. Even in recent years, the contribution of this sector has fluctuated between 8.6% in 1982/83 and 7.6% in 1987/88. Considerable concessions have been offered to this sector in order both to encourage the establishment of private industry and to promote the publicly owned industries. These concessions include, for example, exemption from import and export taxes for five and more years after production starts. Also, electricity, water and other services are provided for nominal charges during the first five years of production. All these are embodied in the *Encouragement Of Investment Act*. A number of supporting institutions have been created to promote industrialization, such as the Industrial Bank of Sudan, and the Sudan Development Corporation. Industrial development has been concentrated mainly in processing of agricultural products and textile industries. This sector suffers from lack of necessary inputs.

.. many local factories continued to operate below their capacity. On the whole the underutilization of capacity may be attributed to obsolete and inefficient machinery, lack of spare parts, and imported raw materials (Bank of Sudan 1986, 17).

Table 2.4 shows the output of the country's main industries during the period 1981/2-1985/6. Several items show striking fluctuation from year to year. Sugar production, for example, was about 45,000 metric tons (9%) less in 1985/6 than in the preceding year, a decline which may be attributed to shortages of both sugar cane and spare parts.

Table 2.4: Industrial Production 1981/82-85/86

Commodity	Unit	1981/82	1982/83	1983/84	1984/85	1985/86
Sugar	000 M. Tons	238.9	360.0	418.5	496.9	451.5
Yarn	000 M. Tons	10.9	10.5	9.7	10.1	8.9
Cement	000 M. Tons	169.4	231.5	198.4	145.7	150.5
Flour	000 M. Tons	255.0	276.3	266.3	280.3	N.A
Vegetables Oils	000 M. Tons	76.8	73.8	70.4	81.6	N.A
Soap	000 M. Tons	52.4	56.3	57.3	57.9	N.A
Cigarettes	Billion Cigarettes	0.9	1.1	1.6	2.4	2.9
Textiles	Million Yards	66.2	68.5	57.3	47.9	48.2
Shoes	Million Pairs	9.7	10.2	8.1	9.0	N.A
Dry Cell Batteries	Million Units	60.5	42.2	65.8	42.1	39.8
Tyre & Tubes	Thousand Units	351.8	515.8	473.7	375.7	555.0
Mineral Waters	Million Dozens	10.8	11.4	12.8	N.A	N.A
Matches	Billion Sticks	3.8	5.2	3.6	3.8	7.7*

* Up to March 1986.

Source: Customs Department.

Textile production also suffers from instability and fluctuations of output, lack of spare parts and obsolete machinery. The leather industry suffers inefficient machinery and acute shortages of tanning chemicals, and cement factories also appear to have unstable annual production. Indeed the only industry with a steady upward trend is that of cigarette production, the result of better availability of imported production inputs and the rising demand for locally-produced cigarettes.

Policy measures have recently been adopted to enhance production in the industrial sector. In the sugar industry, the government has started a comprehensive rehabilitation programme with the help of international and regional organizations,

Table 2.5: Absolute and Relative Contribution of Economic sectors in Employment (in million)

Economic Sector	Numbers		% Share	
	1969/70	1979/80	1969/70	1976/80
Agriculture	2.837	3.433	69.7	65.8
Services	0.399	0.680	9.7	13.0
Manufacturing	0.136	0.183	3.3	3.5
Utilities	0.037	0.059	0.9	1.1
Constructions	0.072	0.108	1.7	2.1
Com.& Trade	0.193	0.221	4.7	4.2
Transport	0.134	0.199	3.3	3.8
Unallocated	0.275	0.341	6.7	6.5
Total	4.08400	5.015	100.0	100.0

Source: Economic Survey, 1987/88

such as the World Bank, the IMF and the Arab Monetary Fund. The programme aims at increasing capacity utilization and improving the capital stock of the factories.

2.2.3 Sectoral employment

The agricultural sector, as indicated in Table 2.5, absorbs the largest portion of the people of working age (over 15 years). It is observable that the number working in agriculture increased from 2.837 million in 1969/70 to 3.433 millions in 1979/80, an average annual increase of 59,550 persons. Despite that, the percentage contribution of the sector declined from 69.7% to 65.8% over the same period. This reduction would be attributed entirely to the increase in the shares of the other sectors.

The expanding service sector, transport sector and other (officially) undefined activities, lead the people to leave the agricultural sector and join these sectors. The service sector is the second largest source of employment. Expansion in housing, education, and health services has motivated many people to join this sector if they are workless, or even, in many cases, to transfer from other sectors. In 1969/70, 399,000 people were working in this sector representing 9.7% of the total labour force against 680,000 in 1979/80 (13.0%), with an average annual increase of 28,100 workers.

The contribution of the manufacturing sector is less than that of either agriculture or services. In absolute terms, manufacturing employment rose from 136,000 in 1969/70 to 183,000 in 1979/80. Its share also increased slightly from 3.3% to 3.5% in the same period. The major problem with this sector is the lack of foreign exchange needed for raw materials and spare parts in addition to chronic power shortages and cuts. These problems lead to lower production and result in more people leaving this sector optionally or compulsorily.

The commerce and finance sector, and the construction sector experienced a rise in their proportion from 1.7% to 2.1% between 1969/70 and 1979/80. Mainly this may be due to the huge constructions adopted by the government to build houses and offices needed for the newly introduced regional governments. The population employed in commerce and trade fell from 4.7% in 1969/70 to 4.2% in 1979/80. One can find no rational reason for this decline in a period which witnessed flourishing trade activities within the country and with the outside world. It is clear from the figures in Table 2.5 that changes in the distribution of employment were relatively small during the 1970s, a decade which saw an increase of some 22.8% in the total number at work.

2.3 Population of the Sudan

2.3.1 Population data

Over much of the world today, some form of planning is seen as an essential tool for economic and social development. Sudan is no exception and, since independence in 1956, has produced a series of development plans with the aim of increasing the GDP, expanding employment opportunities, raising the standards of education, health and housing and increasing food production. To all these objectives, accurate and detailed population data are vital.

The first attempt at estimating the population of the Sudan and its regions was carried out under colonial rule during the period 1899 - 1903, when data were collected by the heads of tribes under the supervision of council inspectors and provincial commissioners. The main objective of this early enumeration was to provide a basis for administrative action, particularly the imposition of taxes (Population Census Office, 1973). The results suggested a population of about 2 million for the Sudan around the turn of the century. When this figure is compared with the result of the 1956 census (see below), the outcome is an average annual growth 1900 - 1956 in the region of 3.0%. Given the poor health conditions and medical services prevailing during the colonial period which resulted in high mortality rates, such a rate of growth appears unlikely and suggests either under-enumeration in 1899 - 1903, or over-enumeration in 1956.

Today, data on population numbers and characteristics are available from vital registration, demographic surveys and population censuses, each of which will now be examined in turn.

2.3.1.1 Vital registration

This system was first introduced during the colonial period under *The Registration of Births and Deaths Ordinance, 1939*, which was later replaced by *The Registration of Births and Deaths Act, 1972*. The coverage of the system is confined to major cities, towns and the Sudanese working abroad. An effort is now being made to improve coverage and quality of data and an experiment is being undertaken in Gezira and Khartoum provinces. But, given the experience of many other developing countries in the world and the economic and social problems special to the Sudan, such as poor transportation and communication networks and relatively high illiteracy rates, several decades are likely to elapse before coverage is complete.

2.3.1.2 Demographic surveys

In 1964/66 a specially designed survey was undertaken to collect information about housing and population. It covered about 82 towns. In the period December 1978 to April 1979 a second survey was undertaken under the title of the Sudan Fertility Survey and, like its predecessor, was confined to the northern part of the country. This survey remains the most important source of information regarding such variables as marriage, divorce, fertility, family planning, breast feeding practices, infant mortality and related socio-economic factors.

2.3.1.3 Population censuses

Censuses are the primary source of data for the study of population changes in the Sudan since independence and three have been held, on January 17th 1956,

April 4th 1973 and April 14th 1983, giving intercensal periods of very unequal length; 17.214 and 9.868 years respectively.

1. The 1955/56 census

The first modern census of the Sudan was conducted over the period 1 July 1955 to 2 September 1956, with January 17th 1956 as declared census date (PCO, 1958). Thus, the census extended over a period of 14 months which began in the colonial period and ended after independence, having been preceded by a pilot survey conducted in 1953. Data collection was carried out in phases and the population was recorded on a *de jure* basis, that is persons were allocated to their permanent residence, whether present there or temporarily absent at the time of enumeration. Temporary visitors were not listed because they were assumed to be included in the account at their permanent residence. This system is generally appreciated for the fact that it gives a picture of the permanent population, which may help in the allocation of representatives to parliaments, or for planning welfare programmes. Also, it provides a more realistic family and household statistics. But, on the other hand, the *de jure* system is criticised on the possible omission of some people by failure to be reported at their usual residence; some may be counted twice, and information about the absent members of households may not be reported complete or accurate. However, the long time period, sequential enumeration and the use of the *de jure* system were inevitable consequences of the vast size of the country, its inadequate transport facilities and the limited number of trained enumerators available. The total population reported as of 17 January 1956 was 10.3 million, a figure some 1.5 million greater than the total of estimates made by administrative bodies immediately prior to the census (PCO, 1989).

The 1956 census was severely criticised on various grounds. These included the long reference period, the use of sampling even for head counts in rural areas, and the difficulties involved in the *de jure* system. In addition, age data were collected not for individual years of age but for 0-1, 1-5, 5 to puberty and above puberty; apart from the obvious deficiencies of such a system, comparisons with later censuses were rendered difficult when these subdivided adult females into those of childbearing age and those beyond. There was also a great deal of variation between the intended population sampling fractions and the actual fractions enumerated in the different regions.

2. The 1973 census

This second census was conducted in the period 3-30 April 1973 with the 4th of April 1973 as the census date (PCO, 1980). It was conducted on *de facto* basis where the individuals were enumerated at the place where they were found on the census night. Such a system of enumeration offers less chance than the *de jure* method for omission of persons from the count, particularly if the count was on a one day; but hardly so if count spreads over a period of time. The disadvantages of a *de facto* method of enumeration can be seen in the difficulty to obtain information about people in transit, and in its provision of an incorrect picture of the usual population communities. In the 1973 census, data on sex, age and relation to the head of the household were collected from the entire population of the country. Other additional information was collected from the entire urban population and a 10% one stage cluster sample of enumeration sectors of the rural areas. This additional information included marital status, nationality, place of birth, school attendance and level of education completed, main occupation, sector of activity, employment status, orphanhood, children ever born and their survival, last birth

and its survival and housing conditions (PCO, 1977).

According to this census, the total population of the Sudan in 1973 was 12.26 million, suggesting a growth of 19% in 17.214 years, or about 1% per annum (PCO, 1980). This was far less than had been anticipated and led many to question the completeness of the coverage achieved. In post-census checks, the nomadic population was found to be grossly under-enumerated and was raised from 0.4 to 1.63 million. Eventually, the total population figure was adjusted from 12.26 to 14.82 including a 5% assumed overall under-enumeration.

Despite these adjustments it was clear that the figures were too low in the southern regions of the country where they suggested negative growth rates in the intercensal period 1956-1973 for two provinces and a below average rate for the third. Accordingly, the reported and adjusted total and rates of the 1973 census became controversial and doubtful. But, despite these doubts, the data were used by governmental and non governmental agencies, because there was no other alternative set of data available.

3. The 1983 census

Although the 1973 census results were extensively used by the government and private organisations for planning and other policies, by 1978 it became clear that the information was getting out dated and the statistics were in need of updating. As a result, the necessary steps were undertaken to prepare for the third census in the history of the country, that of 1983. It was an operation of a greater magnitude which involved enumeration of 20.6 million people scattered throughout a vast country, including its nomadic and homeless population. This census was conducted during February/March 1983 with 14th. February 1983 as

the census date. Like that of 1973 this census was built on a *de facto* basis where *the actual population present in a household during the census night, consisting of usual residents who were present and visitors, was covered*, (PCO, 1989).

Topics of age, sex, relation to the head of the household were completely covered for the entire population of the country. The remaining demographic and socio-economic information and housing data were covered completely in the urban areas only, while area-cluster sampling was used in the rural areas. That is, a list of village councils/chiefs areas was prepared according to the size of the population within each area council of each province. Then two systematic random samples were selected and combined to obtain a 5% sample of village council/chiefs areas from each area council in each province. The sample was confined to the private households which were defined as the unit where a group of related or unrelated individuals were living together and ate together. Institutional households were defined as soldiers' camps, boarding houses, prisons and hospitals. The sample in the rural areas was confined to the private households of the rural settled population. The nomadic, institutional and homeless population were completely covered by using a short questionnaire containing information about name, father's name, family name, age and sex.

Sampling and non-sampling errors were detected, checked and corrected later in the stage of data processing. The *de facto* method of enumeration caused many difficulties. For example, some people found it difficult to state if some usual residents of the household were away, or there were visitors on the enumeration day. This was because the enumeration lasted for two weeks and in some areas it went beyond that period. Also some refugees who were not living in the refugee camps tried to avoid enumeration or to report themselves as Sudanese.

The customs, norms and values of some tribes have affected the value of information on certain variables such as females' ages, marriageable age, number of births. The relatively high sex ratio of 104 males per 100 females is attributed to the under-enumeration of females in certain tribal areas.

To sum up, the coverage of the urban population was complete in all three censuses. In the 1956 census the coverage of rural population was based on a sample of 10.7%. In the 1973 and 1983 censuses the coverage of rural population was complete for the basic demographic information on sex, age and relation to the head of the household. Other demographic and socio-economic characteristics were obtained on a basis of 10% of enumeration sectors in 1973 and 5% of village councils/chiefs areas in 1983. The population changes and characteristics to be discussed in this chapter depend mainly on the 1983 census data and comparisons with the 1973, and 1956 census data.

2.3.2 Ethnic Groups

The Sudan North is predominantly Muslim and its people speak Arabic, which is also the official language of the country as a whole. El-Obied (1980) concluded that the people in the northern part of the country include Arabs, Negroes and a mixture of both. Traditionally the population was nomadic or semi nomadic. Almost all the northern Sudanese accept the Arabic cultural heritage and are, therefore, culturally fairly homogeneous. This is because of Islamization and Arabization of the north which began with Arab-Muslim invasion in the 7th century. Since then, many Arab ethnic and cultural elements have been left in this region.

The Nubians are the dominant element of Northern province. The Beja, and Hadandawa tribes dominate the area east of the Atbara River and the Nile and

up to the coasts of the Red Sea. Kababeesh, Hawaweer, Zaghawa and Kawahla people are found in the northern provinces of Kordofan and Darfur and northward to the southern territories of Northern province.

Other tribes such as Fur, Daju, Beijo, Birked, Masaleet, Gimira and Tama inhabit the southern part of the Darfur region. Most of tribes here are nearer to the African than to the Arab ancestry, but most of them are Muslims. As stated by El-Obied (1980), 39% of the total population of the country claimed membership of Arab tribes in the 1955/56 census. The rest were Southerners, mainly Nilotics and Nilo-Hamites; West Africans claiming Sudanese status, Nuba and Beja. In religion 72% were Muslims; 27% held traditional beliefs; and only 1% christians.

Describing the origin of tribes in the Sudan South, Kamil (1972) stated that the ethnic groups in that part of the country are not descended from a single race, but rather, from three main ethnic groups. The first of these is the Nilotes. The Nilotes include many tribes living inside the country and across the borders in Uganda, Kenya and the southwestern fringes of Ethiopia. This group is located along the banks of the White Nile, Bahr al Jabal, Bahr al Ghazal, and Sobat rivers. Dinka, Nuer and Shilluk are the dominant tribes in this group in terms of both numbers and wealth. Related to the same group are the Llyofy in Kenya, Acholi in Uganda and Anwak in the Sudanese Ethiopian borderlands. The main occupation of these tribes is animal herding, particularly cattle.

The second group includes the Nilo-Hamites. Like the Nilotes, these tribes are animal raisers living in the southern lands of Equatoria region. The Bary people live in the northern parts of the region and the Masai tribe in Kenya and Tanzania are related to these Hamitic origin tribes.

The third is the Sudanese group which includes the Zandy people. These people, living in the southern parts of Bahr al Ghazal region, are found also in Zaire and the Central Africa Republic. Like the Nilotes, the Sudanese tribes descend from Negro origins mixed with Hamitic blood.

2.3.3 Population distribution and rate of growth

The Sudan has a wide variety of physical or geographical conditions and consequently it naturally falls into distinct regions. In early times, climatic conditions, the prevalence of subsistence economies, bad communications and limited contacts between the regions restricted the scale and spread of settlement in the country. As a result, large parts of the country were empty as in the desert in the north, mountains in the east, and jungles in the south. The areas of high population density were confined to certain places, particularly at the banks of the Nile, cross roads and watering points.

Under the Turco-Egyptian regime (1821-1855), the country was divided into several administrative regions with head- quarters that developed into cities and Khartoum emerged as the capital of the Turkish rulers. During the Mahdist state, Omdurman was chosen as the national capital. The colonial rule at the turn of this century brought drastic changes by the introduction of new techniques of production and the establishment of the Gezira scheme and other projects.

Table 2.6(a) shows the reported and adjusted population and growth rates in the intercensal periods. Table 2.6(b) assembles data from all three censuses to show the distribution of the total population among the various regions in 1955/6, 1973 and 1983 together with annual average intercensal rates of growth at both national and provincial levels. It is clear that there have been important spatial variations

in these growth rates and that these have led to significant changes in population distribution. At the national level (Table 2.6(a)) the reported total population of the Sudan doubled between 1956 and 1983, an average annual growth rate of 2.651%. Annual growth during the first intercensal period was 1.9%, rising to 3.9% during the second. These are constant rates of growth but the changes which occur are periodic. The rates calculated are not the mean rates over period specified; rather, they are rates which operating over the whole period at compound interest to give the final total. If the adjusted figures of population are used, the rates become 2.2% for 1956-73, 3.9% for 1973-83 and 2.8% for the entire period 1956-83. The striking difference in growth rates between the two intercensal periods may be attributed to under-enumeration in the southern part of the country in 1973 which depressed the growth rate recorded for 1956-73 and exaggerated that for 1973-83. Commenting on these growth rate figures, the Population Census Office (1989) placed more reliance on the average for the whole period 1956-83 which was about 2.8% per annum. Assuming also that the Sudan was a net recipient of migrants and refugees over this period as a whole, the natural growth rate would have been less than 2.8%.

Table 2.6(b) shows, for each of the nine regions, the total population at the three census dates and annual intercensal growth rates derived from these figures. Throughout the period under review (1956-83), the Central region has maintained its first rank in terms of total numbers. With a growth (94.5%) close to the national average, its share of the total population has changed very little; 20.2% in 1956 and 19.6% in 1983. The Central region continues to attract migrants from other regions, notably from Kordofan and Darfur, to work on the major agricultural schemes within its boundaries. Growth has also been affected by the

Table 2.6(a): Population Growth of the Sudan

Census Date	Population		Intercensal Period	Rate of Growth	
	Reported	Adjusted		Reported	Adjusted
17 Jan. 1956	10,142,161	10,263,536	-	-	-
			17.214	1.938	2.157
4 April 1973	14,114,590	14,819,270			
			9.868	3.905	3.905
14 Feb. 1983	20,598,056	21,627,959			
1956 - 1983			27.082	2.651	2.791

Source: Population Census Office: 1983 Census National Report, 1989

influx into the southern part of the Blue Nile province of refugees from Ethiopia. In a spontaneous refugee camp in El Kurmuk area in the Blue Nile province there were about 10,000 Ethiopian refugees (Rogge,1985).

The next largest populations are those of the Darfur and Kordofan regions. Total growth in Darfur (134.2%), has been well above the national average, that in Kordofan (75.4%) significantly below. This contrast may be attributed to Darfur's net migration gain from neighbouring Chad and the Central African Republic and the effect of severe drought and desertification in North Kordofan which resulted in large-scale migration to the neighbouring provinces of the Central region. In 1983, approximately half (49.7%) of the population of the Sudan was to be found in the Central, Darfur and Kordofan regions. Fourth in terms of population size in both 1956 and 1983 is the Bahr al Ghazal region whose share of the total has risen from 9.7% to 11.0%; overall growth (129.2%) has been well above the national average. In 1983, the three regions of the Sudan South - Bahr al Ghazal, Upper Nile and Equatoria - contained a quarter (25.6%) of the total population as against 27.1%

Table 2.6(b): Regional Population Growth

Area	Population in 000's						Annual Rate of Growth			% Change for the Period 1955/56-83
	Percentage Distribution						(%)			
	1955/56 ¹		1973 ²		1983 ²		1955/56-1973	1973-1983	1956-1983	
Khartoum	505	(4.6)	1096	(7.8)	1802	(8.8)	4.60	5.168	4.809	+ 256.8
Northern	873	(8.5)	918	(6.5)	1084	(5.3)	3.88	1.699	0.803	+ 24.2
Eastern	941	(9.2)	1497	(10.6)	2209	(10.7)	2.73	4.022	3.201	+ 134.7
Central	2070	(20.2)	3623	(25.6)	4027	(19.6)	3.31	1.077	2.488	+ 94.5
Kordofan	1762	(17.2)	2098	(14.9)	3091	(15.0)	1.02	4.005	2.097	+ 75.4
Darfur	1329	(12.9)	2077	(14.7)	3112	(15.1)	2.63	4.183	3.192	+ 134.2
Upper Nile	889	(8.7)	761	(5.4)	1594	(7.7)	-0.89	7.787	2.182	+ 79.3
B.Ghazal	991	(9.7)	1322	(9.4)	2271	(11.0)	1.69	5.636	3.109	+ 129.2
Equatoria	904	(8.8)	723	(5.1)	1408	(6.8)	-1.30	7.003	1.649	+ 55.8
Sudan	10264	100	14115	100	20598	100	1.868	3.904	2.605	+ 100.7

1- Adjusted figures

2- Reported figures

See also Figures 2.4 - 2.7 at the end of this chapter

. Source: Population Census Office: 1983 Census National Report 1989

in 1956. The reported population of these three regions in 1973 represented only 19.9% and very low growth rates - indeed a decline in two of these regions - are recorded for 1956-73. This can only be due to the unstable political conditions prevailing in the South at that time, and the possible underenumeration in the regions.

Throughout the period since 1956, Khartoum province, which also ranks as one of the nine regions and has the special status of being the province of the capital city, has shown by far the most rapid rate of population growth, well over double (256.8%) the national average. This is obviously connected with the rate of growth of Khartoum as the country's capital, which acts as a magnet for migrants from all regions of Sudan. According to the census figures, the population of the city (which includes the three towns of Khartoum, Khartoum North and Omdurman) rose from half a million in 1956 to just over a million in 1973 and was approaching two million in 1983. Since the latter date, growth appears to have accelerated and a recent estimate places the total population of Khartoum and its suburbs at more than four million. The matter of urbanization and the growth of Khartoum is discussed in more details in chapter five.

Second only to Khartoum in terms of population growth is the Eastern region, comprising the Kassala and Red Sea provinces, with an increase since 1956 of 134.7%. An important factor here has been the influx of refugees from Eriteria and Ethiopia as well as a net gain by migration from other regions of the Sudan. In 1980, the number of refugees in urban areas of the Eastern region was estimated at 155,000, 55,000 in Port Sudan and Tokar cities, 40,000 in Kassala and 60,000 in Gedarif, New Halfa and other towns. The actual number is believed to be much larger and continues to grow. In addition, some 45,900 refugees were estimated

to be settled in the rural areas of the region by 1980, mainly in Gedarif, Showak and New Halfa (Rogge, 1985). In 1985, the ratio of refugees to local population was estimated by the same source as about 1:4, a situation which placed a heavy burden on the infrastructure of the region.

The one region not mentioned thus far is the Northern region. Being mainly desert it contains only a small proportion of the total population of the Sudan - 8.5% in 1956 and only 5.3% in 1983. Of all the nine regions, the Northern region has shown the slowest rate of population growth (24.2%) across the whole period 1956-83. One may attribute this slow growth to the early tendency of its people to migrate to other regions or abroad in search of wider opportunities of better living. The life in the region is confined mainly to the limited land area of the banks of the Nile. A growing population has placed pressure on the limited land resources and consequently forced many to migrate.

The uneven distribution of population in the country and the changes in that distribution over time are due not only to the spatial movement of people but also to regional contrast in the rates of natural increase. Region specific socio-economic, demographic, medical and ecological conditions produce regional differentials in birth and death rates. As stated in the ILO report of 1976, the development of agriculture and related socio-economic activities in the Sudan has produced a dualistic structure between high-income irrigated and mechanized rain fed agriculture on the one hand, and low-income traditional agriculture on the other. This dualism has a strong regional component. The more advanced forms of agriculture are located in the Central, Eastern and Khartoum regions, which also have the relatively highly developed infrastructure - power, transport, schools, health centres - and the bulk of industrial establishments. The Central, Eastern and Khartoum

Table 2.7: Agricultural Bank's Loans by Region
(in £s 000's)

Regions	Loans		
	Total	% Total	Per Capita*
Khartoum	3241	3.8	1.8
Central	27278	32.1	6.8
Northern	14691	17.3	13.6
Eastern	18608	21.9	8.4
Kordofan	6857	8.0	2.2
Darfur	832	1.0	0.3
South	13494	15.9	2.6

* Loan per capita is based on the 1983 census regional population reported figures in Table 2.6(b)

Source: derived from the Economic Survey, 1987/88

regions contain 88% of all the country's industrial establishments, 95.1% of the labour force and 94.5% of the capital invested in the industrial sector. In addition, El-Shibly (1982) has shown that the banking facilities are heavily concentrated in these regions with Khartoum having the lion's share. In 1980, of the 176 bank branches operating in the country, 59 were located in Khartoum, 32 in the Central region and 17 in the Eastern region, a total of 108 or 61.4%. This situation persists; in December 1988 of 315 bank branches some 221 (70.2%) were found in the three regions, Khartoum 105 (33.3%), Central 65 (20.6)% and the Eastern region 51 (16.2%) (Bank of Sudan, 1989).

As regards the more modern forms of agriculture, it is clear that the Central and Eastern regions have received the lion's share of capital investment, even on a per capita basis, and of labour inputs, while Kordofan, Darfur and regions of the

South remain dominated by subsistence agriculture. Government economic and financial policies have played a major role in channelling public resources so as to favour certain regions. As Table 2.7 shows, the Central and Eastern regions, with about 30% of the country's population have received 54% of the loans provided by the Agricultural Bank, while Kordofan and Darfur, with a similar share of the population, received only 9%.

2.3.4 Distribution of population by mode of living

Table 2.8 divides the population of the Sudan; Sudan North, Sudan South and the nine regions into its urban and rural components, the latter being further subdivided into settled and nomadic elements. Not surprisingly, there have been significant changes since 1956. In the period 19856/83, the urban population has increased by 400%, an annual average growth of 14.8% and its share of the total has risen from 8.3% to 20.5%. In 1956 the rural population was 91.7% of the total. By 1983 this share had declined to 79.5%. The shares of settled and nomadic rural population were 78% and 13.7% in 1956 and declined to 68.5% and 11.0% respectively in 1983.

As Table 2.8 shows, these proportions vary considerably at the regional level, reflecting variations in physical and climatic conditions as well as the uneven distribution of economic and social development.

With half its population classified as urban in 1956 and three-quarters in that category in 1983, Khartoum is, by a large margin, the most highly urbanised province, containing 32.3% of the total urban population of the Sudan at the latter date (PCO, 1983). In 1956, less than 5% of the population lived in centres of 20,000 or more and more than one third of these were in greater Khartoum.

**Table 2.8: % Regional Population of the Sudan
by Mode of Living**

Regions	1956			1973			1983		
	Urban	Rural	Nomadic	Urban	Rural	Nomadic	Urban	Rural	Nomadic
Eastern	15.9	30.8	53.3	26.0	46.3	27.7	28.9	45.8	25.3
Northern	10.1	82.2	7.7	18.5	71.3	10.1	21.3	47.1	4.7
Khartoum	50.4	39.1	10.6	71.6	23.4	5.0	74.7	20.4	4.9
Central	7.0	87.0	6.0	14.3	78.9	6.8	20.6	73.4	6.1
Kordofan	6.6	71.1	22.3	12.8	67.8	19.4	12.6	62.2	25.2
Darfur	4.0	76.0	20.0	9.1	71.1	19.8	10.8	74.1	15.1
Sudan North	8.3	78.0	13.7	18.5	70.0	11.5	10.9	34.8	6.7
Bahr al Ghazal	1.8	98.2	00.0	9.1	90.9	00.0	8.0	91.8	0.2
Upper Nile	1.1	98.9	00.0	4.6	95.4	00.0	5.7	89.9	4.4
Equatoria	2.5	97.5	00.0	18.4	81.6	00.0	12.9	87.0	00.0
Sudan South	8.3	78.0	13.7	18.5	70.0	11.5	9.6	33.7	3.3
Sudan	8.3	78.0	13.7	18.5	70.0	11.5	20.5	68.5	11.0

Source: Population Census Office, 1989

In 1983, about half the urban population was concentrated in centres of 100,000 population and more, with Khartoum hosting more than 60% of them. Only one other region - the Eastern - has an urban population significantly above the national average of 20.5%. The Northern and Central regions are close to that average but all others are well below it, ranging from 12.9% in Equatoria to only 5.7% in Upper Nile province.

The published data indicated that, while the Sudan remains predominantly rural, the urban sector is expanding quite rapidly, but there are problems regarding the criteria used in the identification of the urban element. In the 1983 census, an urban centre was defined by the Department of Statistics as

an area with a population of five thousand or more, or an area administered by the town council irrespective of the size of its population (PCO, 1989:pp20). Also if an area was considered by the local authorities as of administrative or commercial importance (even if it was not in a town council, or even it was of less than five thousand people) it can be considered as an urban area.

Such a definition tends to exaggerate the size of the urban population, since there are numerous settlements with populations in excess of 5,000 which can in no way be described as urban. El-Arifi (1980) identified similar problems when he tried to analyze the urbanisation process in the Sudan. He complained that neither the 1956 nor the 1973 census was consistent in defining urban places and that the enumerators failed to apply the definition properly. In 1956, for example, Yei (1352 inhabitants) and Katari (611) were both classified as towns; in 1973 places with fewer than 2000 inhabitants, such as El-Khandag and El-Dabba in the Northern province, were placed in the urban category. There is a clear need for a precise and strict definition of urban areas for use in future censuses and surveys and, above all, for a proper application of the definition in the enumeration of people in the field.

2.3.5 Population density

The total area of the country is 2.506 mill sq km, but the inhabited area is estimated by the Department of Statistics as 2.172 mill sq km. This adjusted area excludes an area of 6,000 sq km in the Central region, 122,000 sq km in Darfur region and 206,000 sq km in the Northern region. Table 2.9 reports the total population of the country and its regional population density against the adjusted area.

The Sudan population density as a whole has increased from 4.8 persons per sq km in 1955/56 to 9.5 in 1983, with an average annual increase of 3.4%. This increase in the population density is attributed mainly to the natural increase and partly to the influx of refugees from Chad, Eriteria, Ethiopia, Uganda and other countries, in large numbers. The Sudan population density is less than that of many African countries, for example 62 in Uganda, 13 in Zaire, 22 in Tanzania and 48 persons per sq km in Sierra Leone (Demographic Yearbook, 1985).

Table 2.9: Population Density by Region

Area	Land Area in 000's/ km ²		Population in 000's			Persons / km ² Adjusted*		
	Gross	Adjusted	1955/56	1973	1983	1955/6	1973	1983
Sudan	2506	2172	10263	14819	20568	4.8	6.8	9.8
Sudan North	1858	1524	7480	11874	15297	4.9	7.8	10.0
Sudan South	648	648	2783	2945	5271	4.3	4.5	8.1
Khartoum	21	21	505	1150	1802	24.0	54.8	85.8
Northern	477	271	873	964	1074	3.2	3.6	4.0
Eastern	341	341	941	1572	2208	2.8	4.6	6.5
Central	142	136	2070	3804	4026	15.2	28.0	29.6
Kordofan	381	381	1762	2203	3093	4.6	5.8	8.1
Darfur	496	374	1329	2181	3094	3.6	5.8	8.3
Upper Nile	236	236	889	799	1600	3.8	3.4	6.8
Bahr al Ghazal	214	214	991	1388	2265	4.6	6.5	10.6
Equatoria	198	198	903	758	1406	4.6	3.8	7.1

* Excluding Uninhabited Areas

Source: Department of Statistics, 1983

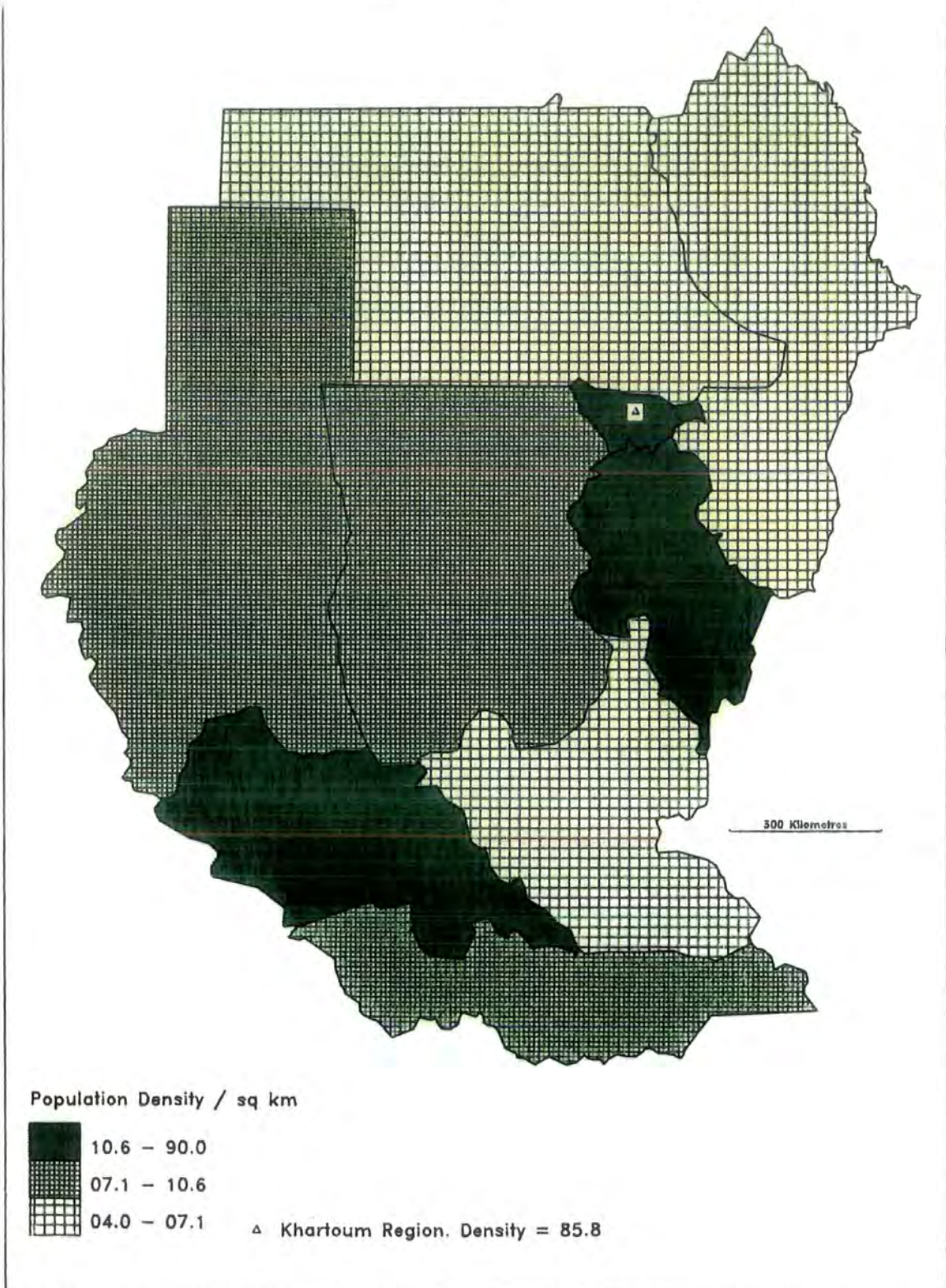
In the 1955/56 census, the densities of Equatoria and the Upper Nile were

4.6 and 3.8 persons per sq km respectively. In the same order these two regions experienced a density decline by 1973 to 3.8, and 3.4 persons per sq km. The main cause may be attributed to the prevailing war conditions in that area at the time of the census. More than quarter of a million people of that region were in the jungles or inside the territories of the neighbouring countries, Uganda, Kenya and Ethiopia, fighting the central government in the north. These people did not return immediately after the peace agreement in 1972 between the government and the rebels, rather they returned in groups and over more than two years. This may be one of the major causes of the decline in density in that period, (El-Obied, 1980). Later, by 1983 the density of the two regions had risen to 6.8 in the Upper Nile and 7.1 in Equatoria (see Figure 2.3).

The population density of Khartoum province is the highest by a large margin. Its density has been increasing by 9.5% annually during the period 1956-83. The natural population growth of the region in the same intercensal period was less than 5% per year. This reflects the rush of people towards the national capital, a trend which will be discussed in chapters four and five. The Central region comes next. Its density increased from 15.2 in 1955/56 to 20 and 29.6 persons in 1973 and 1983 respectively. The northern regions are more densely populated than the southern regions. In 1983, the population density was 10 and 8.1 in the northern and southern regions respectively.

A somewhat more refined measure of density is the ratio of population to arable land, a measure referred to as *nutritional density*. Arable land is defined to be the earth's surface which is suitable for tillage; non arable lands such as mining land, natural pastures and forests. Gary and Robert (1979), described this density as a density that provides a better indication of the degree of crowding in

Figure 2.3: Regional Population Density (1983)



a region compared with its physical potential for producing food and agricultural raw materials.

In the Sudan the total arable land is estimated to be 200 mill feddans, (ILO, 1976), equivalent to 480,000 sq km. Given the population of 1983, the nutritional density of the country would be 42.85 persons per sq km. Compared with the arithmetic density of 9.5 persons per sq km, we find the former density is 351.1% higher than the latter one.

Generally, despite the growing population, the Sudan is not expected, at least in the near future, to face a problem in the residential, agricultural and/or pastoral land area resulting from population pressure. If faced with such a problem, then it would be likely to be resulting from such natural hazards as drought and desertification, and/or civil war.

2.3.6 Sex and age composition

Sex and age composition represent the most basic data required for socio-economic planning. Table 2.10 reports the percentage distribution of males and females in the Sudan by broad age groups in the three censuses. Proportions in the age group 0-4 declined significantly between 1956 and 1983, falling from 19.5% to 13.5% for males and from 20.3% to 14% for females. There were compensating rises in the proportions aged 5-14 so that, overall, the proportions below the age of 15 changed but little; a fall from 45 to 44.6% in the case of males and a rise from 40.9 to 43.4% for females. The high proportions of children at all three dates are an obvious indication that high fertility has been maintained. There were only very minor changes in the proportions of adults and elderly people.

Table 2.10: % Distribution of Males and Females by Selected Age Groups in the Three Censuses

Age	1956		1973		1983	
Groups	Males	Females	Males	Females	Males	Females
0-4	19.53	20.29	17.53	17.10	13.54	13.99
5-14	25.49	20.66	29.51	27.61	31.03	29.44
15-59	-	-	48.10	51.13	50.07	52.50
60 +	-	-	4.86	4.16	5.36	4.07

Source: Population Census Office, 1989

Table 2.11 reports the sex ratios for different age groups by mode of living according to 1983 census data. The overall sex ratio revealed was 104 males per 100 females. In 1973 this ratio was 102. Comparing the sex ratios of the three censuses, the Population Census Office (1989) stated that there was almost no difference between the sex ratios calculated in the 1956 and 1973 censuses, while that of 1983 was significantly higher. This could be due to the better coverage of males than females in 1983 (see Figure 2.4).

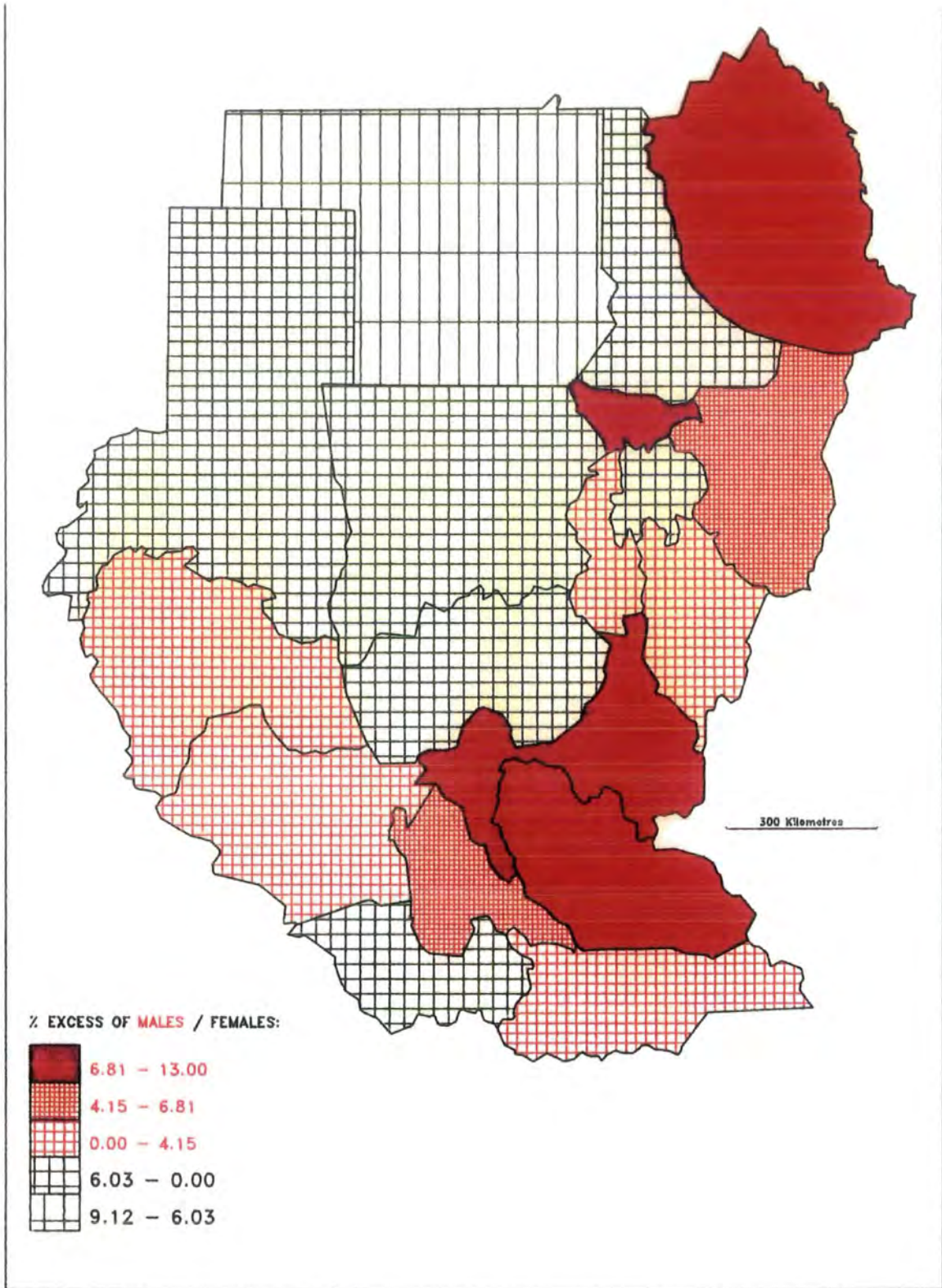
As stated by the Department of Economics and Social Affairs (1988), the excess of males over females at birth is a biological phenomenon and the average sex ratio at birth in a population is expected to be around 105 males per 100 females. Given the same health conditions, females will tend to have a higher survival rate as they move through the life span, and ultimately they tend to outnumber the males. But this justification does not seem to hold true for the table under discussion. Sex ratios should decline with increasing age but they do not. On the contrary, sex ratios increase steadily beyond the age of 40. The only possible explanation is that the survival rates of males increase as ages advance, an assumption which contrasts that of the above. To find the underlying causes of this anomaly in the

Table 2.11: Sex Ratios by Age Group and Mode of Living for 1983

Age Groups	Sex Ratios			
	Total	Urban	Rural	Nomadic
All ages	104	112	101	110
0 - 4	101	102	102	93
5 - 9	107	102	108	109
10-14	114	104	114	128
15-19	109	113	105	128
20-24	96	127	85	99
25-29	82	114	73	83
30-34	84	119	75	85
35-39	94	116	88	97
40-44	105	126	98	113
45-49	123	122	121	143
50-54	122	119	119	144
55-59	138	125	140	152
60-64	136	124	135	170
65-69	146	127	149	168
70 +	135	111	136	182

Source: Population Census Office, 1989

Figure 2.4: % Excesses of Males and Females by Province (1983)



Sudan, further research is necessary.

A summary of the age structure of the Sudanese population is provided by the population pyramid depicted in Figure 2.5. It is clear that this pyramid is shaped with a broad base which tapers towards the older age groups. Such a pyramid is typical of a country in its early stage of demographic development with higher birth and death rates and a youthful age structure. The inset of the 0-4 age group in this diagram suggests a significant fertility decline in recent years.

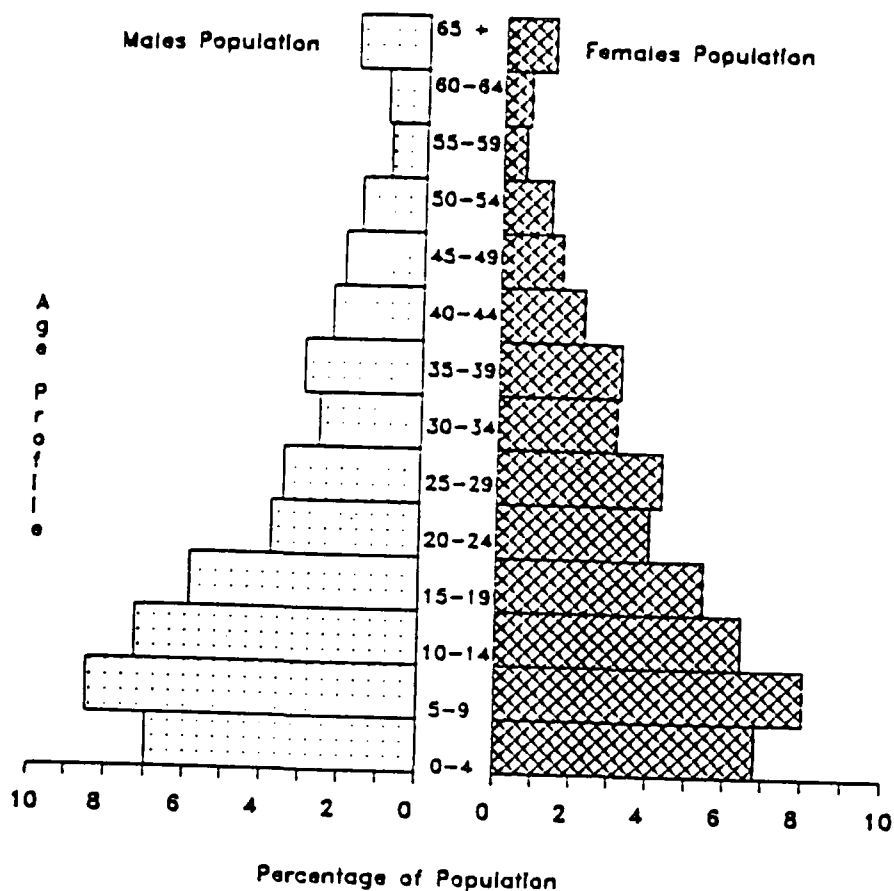


Figure 2.5: The Sudan Population Age Structure, 1983

Source: Derived from PCO, 1989

2.3.7 Birth rates, death rates and life expectancy

According to Barbour (1961), in the year preceding the first census, the Sudan as a whole had a crude birth rate of 52 per thousand, exceptionally high by world standards, and a crude death rate of 19, giving an annual natural increase rate of 3.3%. Barbour predicted that the population would double in 19 years, i.e. by 1975, and would reach 28.317 million by 1986. In the event, the population revealed by the 1983 census was 20.6 million, suggesting some decline in the rate of growth during the intervening period. This would appear to be confirmed by estimates of the United Nations' Demographic Yearbook (1985) showing, for the period 1980-85, an average crude birth rate of 45.9 per thousand, a crude death rate of 17.4 per thousand and thus a natural increase rate of 2.85%. The same source gives life expectancies at birth of 46.6 years for males and 49 years for females as against 43.09 years and 44.85 years for the population as a whole in 1956 and 1973 respectively.

There are, of course, significant regional variations in the vital rates, particularly between the northern and southern sections of the country. Farah and Preston (1982) for example, on the basis of 1973 census data, suggested that child mortality levels were roughly 66% higher in the south than in the north, producing a difference of about 12 years in the expectation of life at birth. Not surprisingly, child mortality was lowest and life expectancy highest in Khartoum province.

The PCO (1989) stated that the 1983 census data provide only limited information on the determinants of fertility, mortality and migration. These data are inadequate as a basis for direct measures of fertility and mortality, not least

because of the problem of misreporting of the dates on which events occurred, particularly in areas with high illiteracy rates. There is an obvious need for a complete and efficient vital registration system, the establishment of which is still in its early stages. In the absence of such a system, however, indirect methods based on census data can be used to give some indication of fertility and mortality levels and trends.

One simple measure which gives an indication of fertility on the basis of census data is the child/woman ratio (CWR), here defined as the number of children aged 0-4 divided by the number of women in the reproductive ages 15-49. This index is useful in that it reflects fertility over the five years preceding the census, but it is important to note that it makes no allowance for under-enumeration or for the mis-reporting of ages of the children or women. For the Sudan as a whole, the CWR was 902.3 per thousand in 1956, 743 in 1973 and 578.8¹ in 1983, suggesting a significant decline in fertility over the period under review.

2.4 Labour Force

In the 1983 census, a person was considered as being in the labour force if he or she was 10 years of age or over and was either working or unemployed during the week before the census date. The unemployed were defined as those aged 10 years or over who, in the week before the census, were not working but were willing to work if any job was available. Those aged 10 years or more reported as housewives, students, income recipients or disabled were classified as 'not in the labour force'. This produced the categories of employed, unemployed, not in the labour force and

¹

$$CWR = (2797730/4833673) \times 1000 = 578.8$$

not stated.

In 1973 the minimum age was 12 years and the reference period was the 12 months before census date and the concept used was the usual economic activity. Data were, however, tabulated only for those aged 15 years or over. In 1956, the concept used was that of 'gainful employment' where primary and secondary occupations were reported for people aged 5 years and over.

The different definitions used in the three censuses make it extremely difficult to make comparisons in this area, a problem compounded by such factors as sampling errors, inaccurate age reporting and misreporting of working females as housewives.

In 1983, some 6.344 million were reported as in the labour force (Table 2.12) compared with 3.453 million in 1973. The latter refers only to those aged 15 or over and must be compared with the corresponding figure of 5.550 million in 1983, a growth of about 60% in ten years. Males represented about 80% of the 15+ labour force in 1973 and 72% in 1983. In 1983, some 10.5% of the labour force aged 10 years or over was classified as unemployed, a proportion which falls to 6.9% if only those aged 15 or over are included. Of all those unemployed, some 89% were seeking work for the first time and the great bulk of these were in the 10-14 age group.

These data seem to suggest that job creation has not kept pace with the growth of the labour force. They also indicate that numerous children below the age of 15 were entering the labour force; factors such as lack of educational facilities and the need to supplement the family income underlie this child employment. The table also shows that, in 1983, there were 220,499 females aged 10 or over recorded

as unemployed, one-third of the total unemployed. For females aged 15 or over, the 126,715 females also represented one-third of all unemployed persons of those ages. The latter may be compared with the situation in 1973 when females were only 2.7% of the unemployed. Clearly, the labour market is not ready to provide suitable jobs for the growing number of women joining the job seekers.

Table 2.12: Unemployment by Age and Sex: 1973 and 1983

-	1983					1973				
	Total	Unemployed		Unemployment		Total	Unemployed		Unemployment	
Age Group	Labour Force	Total	Seeking Work for First Time	Rate	% of Unemployed Seeking WFT		Total	Seeking WFT	Rate	% of Unemployed Seeking WFT
10 and over	6,344,056	663,990	592,740	10.5	89.3	-	-	-	-	-
Males	4,500,115	443,484	387,487	9.9	87.4	-	-	-	-	-
Females	1,843,930	220,499	205,245	12.0	93.1	-	-	-	-	-
15 and over	5,549,736	384,399	316,102	6.9	82.2	3,453,235	206,600	20,043	5.9	9.7
Males	3,999,984	257,721	203,306	6.4	78.9	2,759,865	201,108	18,928	7.2	9.4
Females	1,549,752	126,715	112,838	8.2	89.0	693,370	5,492	1,115	0.8	20.3

Source: PCO, 1983

Chapter III

Internal Migration

3.1 Introduction

Generally, there are three important issues in the study of any migration process; the nature of the migration, its causes, and its effects. The word *migration* and other related words such as *migrant*, *immigrant* and *emigrant* tend to produce an oversimplified and erroneous picture in the minds of many people. While these words suggest a single or unitary phenomenon, migration is actually both varied and complex in nature and definition. Migration is more specific in meaning than *mobility* which is a rather more general term that covers all types of territorial movements of whatever distance, duration, or degree of permanence. According to Zelinsky (1971), migration excludes, for example, movement between home and work, holiday-makers and occasional movement of students between home and college. To him, all these are forms of mobility which are designated as *circulation* which covers a great variety of movements, usually short-term, repetitive or cyclical in nature, but all having in common the lack of any declared intention of a permanent or long-lasting change in residence.

Migration is defined broadly, by many specialists, as a permanent or semi-permanent change of residence of an individual or group of people. This change of residence necessitates a voluntary movement through a socio-cultural space. Spengler (1977) states that the movement is along a geographical vector and necessarily includes a movement from one situation of employment opportunities to another

with different opportunities. The other set of conditions which may have effect on the decision to move may be viewed as elements generating a third economic, or social vector or set of conditions. To Kammeyer (1971), a migrant individual or group moves from one place to another with the intention of staying in the new place for a considerable period of time. In order to be differentiated from a mover, the migrant must also move from one political or geographical unit to another.

Migration, together with fertility and mortality, is a fundamental element that determines the growth of population and its structure in the area concerned. Gross migration includes all flows into and out of an area, while the balance of moves into and out of an area is the net migration. The scale of migration usually describes its classification. The two main classes of migration are commonly called international and internal migration. In the case of internal migration, we can recognise such different types of migration as inter-urban, rural-urban, rural-rural, or urban-rural. The word rural generally means an area dominated by open countryside, extensive land uses and low population densities; or in short, a rural area is often thought of as a polar opposite to an urban one, though definitions of urban and rural present problems.

Various attempts have been made to classify migration movements, taking into account such criteria as distance (long or short), time (permanent or temporary), decision making (voluntary or forced), numbers involved (individual or mass) and causes (economic, social, political or any other cause). Possibly the most satisfactory classification so far devised is that of Peterson (1958) in which the basic distinction was between *conservative migration* and *innovative migration*. Conservative migration occurs when a person moves from one place to another in order to retain his existing way of life. The move is necessitated by changes taking place

in his current place of residence. In such a case, if the person were to stay he would have to change his mode of living, so migration is an effort to conserve important parts of the existing way of life. On the other hand, innovative migration is the movement of a person in order to obtain a new way of life. This typology of migration by Petersen involves the following classes:

1. Primitive migration

Here, people are compelled to move as a result of ecological, geographical, or natural forces. In order to survive, people move to find a new place that is like their home under the earlier conditions; such a move could be classified as conservative. But, if the people move to seek out a new way of life, then it could be considered as an innovative primitive type of migration; for example, when people move to the city after their agricultural land fails to provide a satisfactory livelihood.

2. Forced or impelled migration

In this class the population movement is forced by the state, or some other political or economic power. This type of movement can be exemplified by the slave trade, flight from oppression and expulsion by government.

3. Free migration

The will and choice of the individual migrant in this class is the crucial factor that causes migration. While primitive migration exists because people cannot meet their needs in their former place of residence, and forced migration occurs in response to some political or other power, free migration occurs when individuals on their own initiative actively seek out new homes. The people who best characterize this form of migration are the pioneers and adventurers, but it can also describe the

movement of many individuals in an open society, like that in the United States.

4. Mass migration

Here, the social factors are the main determinants of the decision to migrate. As Petersen says, the movement here becomes a style, an established pattern and an example of collective behaviour. The movement is more a group pattern than a matter of individual choice, and individuals move to some cities or regions simply because others from their social group have moved there before them. This pattern has been described as "chain migration".

Most migration research has been concerned with both empirical and theoretical aspects of the socio-economic causes and consequences of migration, its selective nature by age and sex, educational attainment, marital status, occupation, or distance. There are at least three main aspects of migration selectivity. First there tend to be differences in migration propensities of males and females. These differences may be attributed to educational and work opportunities. In Africa, most studies have found that males are dominant among migrants. In Latin America and the Caribbean, rural-urban migration has been greater among women. In South Asian countries migration seems to take the form of family migration. The second aspect of selectivity is that migrants tend to be young, in their teens or early twenties. The third aspect is that migrants tend to be more educated than their counterparts remaining in the sending areas.

3.2 Migration Theory

3.2.1 Ravenstein's laws of migration

However, a number of authors have attempted to formulate laws of migration, the first of these being E. G. Ravenstein (1885, 1889) reacting to an earlier study of Farr (1876) who remarked that migration appeared to go without any definite law. Ravenstein calculated different laws as inevitable in almost every migration processes. These laws were based on the British census, but later, in 1889, he supported his previous evidence with data from more than twenty countries (Lee, 1970). These laws were statements in the form of propositions about the nature of migration trends, streams of migration and migration differentials. Ravenstein's laws are as follows:

1. The majority of the migrants go only a short distance; that is, the number of migrants grows less in the absorption areas as the distance between these areas and the sending areas increases
2. Migration proceeds step by step. Moving from the rural area to the urban centres will leave a gap in the rural population which will be filled by migrants from more remote districts. When another attractive force of one of the urban centres is felt, step by step the migrants will move towards it.
3. Migrants going long distances generally go by preference to one of the great centres of commerce and/or industry;
4. Each current of migration produces a compensating counter-current;
5. The natives of towns are less migratory than those of the rural areas;

6. Females are more migratory than males within their country of birth, but males more frequently venture beyond;
7. Most migrants are adults - families rarely migrate out of the country of their birth;
8. Migration increases in volume as industries and commerce develop and transportation improve;
9. The major direction of migration is from agricultural areas to the centres of industrial and commercial activities;
10. The major causes of migration are economic. Bad or oppressive laws, heavy taxes, bad climate, inconsistent social surroundings and other factors like transportation, all these have their effect on the migrant decision, but above all comes the influence of the migrant's desire to better himself in material respects.

Despite the fact that Ravenstein produced his laws a century ago, they have rarely been challenged and more recent writings have produced elaborations rather than rebuttals of Ravenstein's views. An important contribution has been that of E.S. Lee (1970).

3.2.2 Lee's theory of migration

In this theory, Lee (1970) tried to develop a general schema into which a variety of spatial movements can be placed and to come out with conclusions regarding migration volume, development of streams and counter streams and the characteristics of migrants.

Lee has defined migration in a sense which is more general than that usually applied. Broadly, he defined it as 'permanent or semipermanent change of residence'. He put no restriction on the distance of the move or upon the decision making, voluntary or forced and he made no distinction between internal and external migration. He did, however, exclude some types of mobility such as nomadic movements and worker movement, holidaymakers and other similar types of migration.

3.2.2.1 Factors affecting the migration process

The influential factors that enter into the decision and process of migration are summarized by Lee as follows:

- a. Factors associated with the area of origin
- b. Factors associated with the area of destination
- c. Intervening obstacles
- d. Personal factors

The first three factors are indicated schematically in figure 3.1. In both areas of origin and areas of destination, the attractive and repulsive factors are represented by (+) and (-) signs respectively. According to Lee, people respond differently to some of these factors and similarly to others. For example, good and bad climates are attractive and repulsive respectively to almost every body, but a good education system can be regarded as a (+) for the parent with children and a (-) for the house-owner who has no children but is obliged to pay taxes to support the education system without deriving direct benefit.

The simple calculation of the +’s and -’s and comparison of factors at origin and destination, do not determine the migration decision. To Lee *the balance in favour of the move must be enough to overcome the natural inertia which always exists* (p. 291). Between the destination and the origin lies a set of intervening obstacles, for example, the Berlin Wall, immigration laws, and the distance which is the most important. The cost of transportation may be trivial to some people, but it may be prohibitive to others.

Personal factors may facilitate the decision of some migrants to migrate but at the same time may retard others. Beside the +’s and -’s in both areas of origin and destination personal factors will enter in the evaluation of the whole situation at home and at destination. These personal factors are exemplified by Lee as personal sensitivities, intelligence, and awareness of conditions elsewhere. For some individuals, reasons for migration must be strong and compelling, while little provocation or promise may be enough to induce others to migrate. Therefore, Lee perceives the migration decision as never completely rational and what is rational for somebody may be otherwise for another.

All these factors are used by Lee to formulate a series of hypotheses about the volume of migration under different circumstances, the development of stream and counter stream, and the characteristics of migrants. These hypotheses are:

a. Volume of migration

A series of hypotheses has been formulated by Lee about the volume of migration in various conditions. The first is that, within a given territory, the volume of migration varies with the degree of diversity of areas included in that territory. The higher the degree of the diversity among the areas, the higher would be the

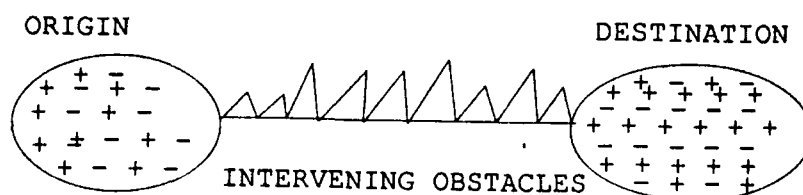


Figure 3.1: Lee's Migration Model

Source: Kosinski and Prothero (1975, 5)

level of migration. Such cases are found in countries which are open for settlement like the 19th century United States. Great attractions were observed in the US when gold was discovered in California, silver in Colorado and when the Red Indian territory was opened for white settlement.

The second of Lee's hypotheses is that the volume of migration varies with the diversity of people. The greater the diversity of characteristics which may be relevant to their social status, such as religion, race, education, income, or tradition, the greater the rate of migration to be expected and vice versa. The third hypothesis lies in the statement that the migration volume is related to the difficulty in overcoming the intervening obstacles. For example, removal of immigration restrictions within the Common Market Countries has led to large migrations of workers between them, and recently, the demolition of Berlin Wall.

In the fourth hypothesis Lee suggests that the volume of migration varies

with fluctuations in the economy. In his fifth hypothesis he mentions that, with time, both volume and rate of migration tend to increase unless severe checks are imposed. The volume and rate of migration vary with variations in the level of development in the country or area concerned.

b. Stream and counterstream

According to Lee, the migration process usually takes place within well defined streams. Approaching a defined destination, migrants have to go over and pass the intervening obstacles. This overcoming of a set of obstacles by the early group of migrants reduces the problems of the passage for later migrants. As a result, passages which go over intervening obstacles are found.

Secondly, Lee hypothesised that for every major migration, a counterstream develops. Some factors, positive and negative, may change or be re-evaluated at both origin and destination. Migrants may reconsider the chances and opportunities at origin which were not previously made use of, or they may make use of their contacts and relations at the destination to establish a business at the origin. In other words, people moving from an origin to a destination would increase the level of knowledge at both ends of the stream about the origin, destination and the intervening obstacles. With this increase in knowledge, migration would increase in both directions. This hypothesis gains support from the fact that some migrants will eventually migrate back to their place of origin. The example given by Lee for this trend is that Italian immigrants to the US intended to stay only long enough to make money to enable them to live comfortably in Italy.

The third hypothesis of Lee is that if conditions prevailing in the destination area are significantly better than in the place of origin, then the efficiency of the

stream would be high. By the efficiency of the stream he means the ratio of stream to counterstream, or the net redistribution of population effected by the positive factors. That is, the ratio of stream to counterstream, or the net amount of migration in one direction or the other. For example, a migration stream would have a 100 percent efficiency if all the migration between place X and place Y was in single direction. It would be zero if exactly as many people moved from X to Y as moved from Y to X. Efficiency of a migration stream would be high if the major factor causing migration was a negative evaluation of the situation at the origin. In such a case, the number of people returning to their place of origin would be low because of its negative features. The illustrative example of this case is the Irish, who migrated because of the famine in their home country and the many American Negroes who fled the unfavourable conditions in the South. This efficiency of migration streams is visualized by Lee to be low if the origin and destination are similar. On the other hand, the efficiency of streams will be high if the intervening obstacles are great. As an example, migrants from Pennsylvania to California were hesitant to return because of the high cost of the journey. Depending on the economic conditions, efficiency of a migration stream will be high in the flourishing times of the economy and low during recession.

c. Characteristics of migrants

To Lee, the migration process is selective and migrants are not a random sample of population. The positive selection is that process of migration where migrants are of high quality, while negative selection is the reverse. Also, migrants respond primarily to plus factors at destination and in such a case it is a positive selection. When they respond to the minus (or pushing) factors in the area of origin then the migration process will be negative, for example the political expulsion from

one country to another or from one area to another.

Plotting the migrants' characteristics, selection tends to be bimodal. That is to say, some migrants respond primarily to the positive factors at the destination, and others to the negative factors in the area of origin. The greater the range of difficulty in the intervening obstacles, the higher is the degree of selectivity. This is because of the fact that the intervening obstacles serve to weed out some of the weak or the incapable. Marital status, size of the family, or age determine the propensity to migrate at certain stages of the life cycle.

Finally, Lee states that migrants can never completely lose all of the characteristics which they partially share with the people at the origin. This is because they share with the people at the area of origin some of the positive factors but, unlike them, the migrating people have responded to the negative factors.

3.2.3 Beshers' theory

According to Beshers (1963, 183)

We assume that migration is a result of a decision process within the family and that the decision process is constrained on one hand by characteristics of the family and its constituent individuals and on the other by labour markets, commuting patterns and housing markets

This theory of Beshers concentrates largely on the individual or familial decision-making process that leads to migration. He introduced the concept *modes of orientation* as the basis for understanding the decision making process. A mode of orientation reflects the fundamental principles that an individual uses when he takes some action.

Beshers identifies three modes of orientation, one of which he calls *the purposive-rational mode*. In this mode the individual migrant extensively calculates the consequences and alternatives available, both in the near and far future, and his capacity to stick to a plan of action that will attain these future goals. In contrast to this is *the traditional mode* in which the decision-making is determined mainly by custom and habit. The third is *the short-run hedonistic mode* wherein the individual looks only a very short distance into the future and makes his decision on the basis of his immediate needs and feelings.

In the purposive-rational mode of orientation, sex roles in nuclear families will give the husband a special knowledge and authority in certain areas and he can specify the job-related constraints, such as the degree to which his job is linked to a particular locality and how migration will affect his career and future income. The wife will be able to specify the family-related constraints such as the effect of migration on the social, emotional and educational needs of the children, in addition to the migration effect on the family's needs.

Therefore, this theory focuses on the rational-purposive mode of personal orientation and the importance of the individual and family decision-making in the process of migration. Factors of this kind, according to Beshers, are dominant mainly in the case of migration to urban-industrial areas.

The basic similarities between Lee's and Beshers' theories can be seen in the emphasis of both on free migration and the rational decision-making forces which lead to such migration. As long as migration is not forced or impelled, the decision to migrate and the scale and direction of movement are motivated primarily by the migrant's desire to improve his living conditions. According to Ravenstein, there

are many other factors that motivate people to migrate, but none of these factors is as effective as the wish and desire of most migrants to 'better' themselves. This relation between migration and economic betterment is described by Kammeyer (1971) as an important factor in most theories of migration. He also states that the other important factor in most theories is that family characteristics have a great influence on the decision when to migrate, where to and how to adjust to their new place of residence.

Therefore, economy and family have prime roles in the process of migration. The economic factor is reflected in such factors as jobs, careers, and economic opportunities.

3.2.4 Lewis-Fei-Ranis development model

This is a model rather than a theory and was formulated in 1954 by Nobel A. Lewis and formalised later by G. Ranis and J. Fei in 1961 (see Lewis, 1954, and J. Fei, and G. Ranis 1961). It is an employment model relating in particular to the developing countries. This formalised model is known as the Lewis-Fei-Ranis model of development.

This model is based on two assumptions regarding the conditions to be found in underdeveloped economies. The first is that the economy is composed of two sectors, of which one is a traditional agricultural sector wherein there is a surplus labour with a zero or negligible productivity. The second assumption is the existence of an 'urban industrial sector', where there is a full employment equilibrium and into which labour from the first sector is gradually transferred.

The emphasis of the model is on the process of labour transfer resulting from

growth of employment in the modern sector. Both labour transference and growth of employment are brought about by the expansion of the modern industrial sector, where the rate of growth is determined by the rate of capital accumulation in this sector. The fundamental assumption of capital accumulation is that the excess profit in the industrial sector is always reinvested. As regards wage differentials, the model assumes a higher wage in the modern or industrial sector than that in the traditional or agricultural sector by at least 30%. This differential is necessary for labour motivation to move from the traditional sector to the modern.

The growth of the modern sector and the expansion in employment are assumed to go on until all surplus labour is absorbed in the urban industrial sector. After that, the labour supply curve will have a positive slope indicating that urban wages rise as demand for more employees increases (see Figure 3.2) The traditional sector wage is set at A which is less than W , the wage rate in the modern sector. As W is greater than A , the labour force from the traditional sector is assumed to supply itself in a perfectly elastic manner and is represented by the supply curve WS . The modern sector, as a profit maximizer, will employ first up to L_1 , since its demand for labour is determined by the demand curve, (at the same time it represents the marginal product curve), $D_1(K_1)$. Here, K_1 is the amount of capital used in a combination with labour. At F the marginal product of labour, (MP_l), will be equal to the real wage, W , a point of profit maximization. The total output would be equal to OD_1FL_1 , and the total wages paid are equal to $OWFL_1$. The surplus WD_1F is the total profit, all of which the model assumes to be invested.

As a result of this investment, the capital stock in the modern sector will rise from K_1 to K_2 . This increase in the capital stock will shift total product curve inducing a rise in the marginal product or demand curve of labour. The labour

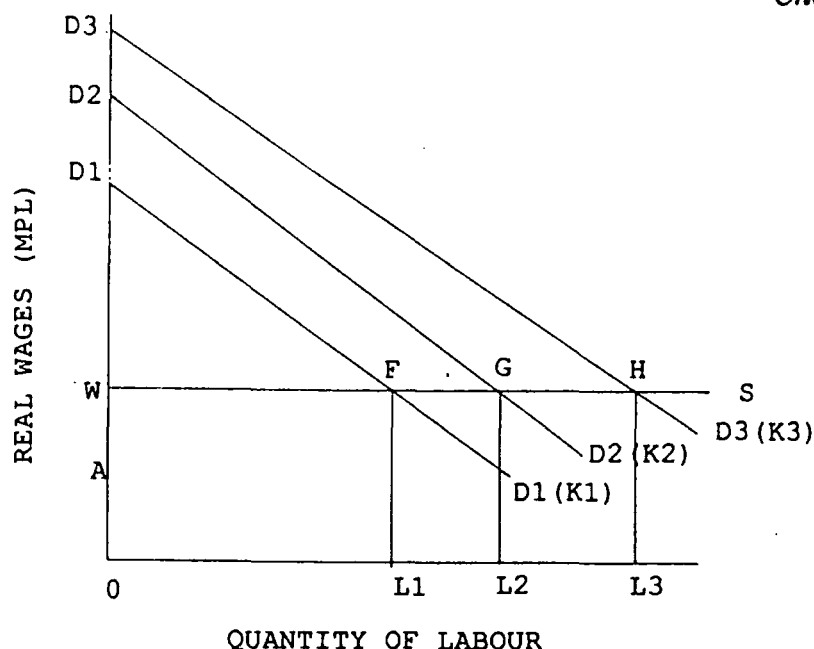


Figure 3.2: Growth and Employment Model of Lewis

Source: Todaro, 1977, (p.10)

demand curve will shift from $D_1(K_1)$ to $D_2(K_2)$. The point G will be the new employment equilibrium, where OL_2 workers are employed; the total output will be OD_2GL_2 , total wages $OWGL_2$ and total profits WD_2G .

This process is assumed to continue until all surplus rural labour is absorbed in the urban industrial sector. After that, the labour supply curve will be positively sloped leading to a continuous growth in the urban wage as more and more labourers are employed.

This model has been criticized on the basis that it conforms only with the historical experience of economic growth of the western countries, the conditions of which are different from those in the developing countries. Todaro (1977), criticized this model for its three basic assumptions which, he claimed are sharply

at variance with the realities of the situation in most of the less developed countries.

3.2.5 Todaro's migration model

For Todaro, the implicit assumption of the Ranis and Fei model that the rate of capital formation is proportional to the rate of labour transfer and employment creation is questionable. This may not hold true in all cases as, for example, when the profits are invested in more sophisticated capital equipment which is labour-saving. In such a case output may expand without any increase in the labour force demanded. Figure 3.3 illustrates what Todaro called 'anti-developmental' economic growth, wherein the demand curves of labour rotate and cross rather than moving outwards. The demand curve $D_2(K_2)$ is negatively sloped to a greater degree than $D_1(K_1)$. This indicates that the additional capital stock (K_2 minus K_1) is more labour saving than $D_1(K_1)$. In this case the extra income and output growth go only to the pockets of the few owners of capital. The income levels of the bulk of the people working in that sector will remain unchanged. Consequently, income inequalities will increase and there would be no improvement in the income levels of the labour force despite the increase in the GNP.

Todaro perceives the assumption of the Lewis and Fei model about the existence of a full employment in urban areas and a surplus labour in the rural areas as almost the reverse of the reality in most developing countries. Unemployment is a common phenomenon in these countries' urban areas and there is no general surplus labour in the rural areas. According to Todaro, wages do rise substantially in the urban areas of the developing countries even during an era of rising levels of unemployment. This fact defies the assumption that real urban wages remain constant until all surplus rural labour is absorbed.

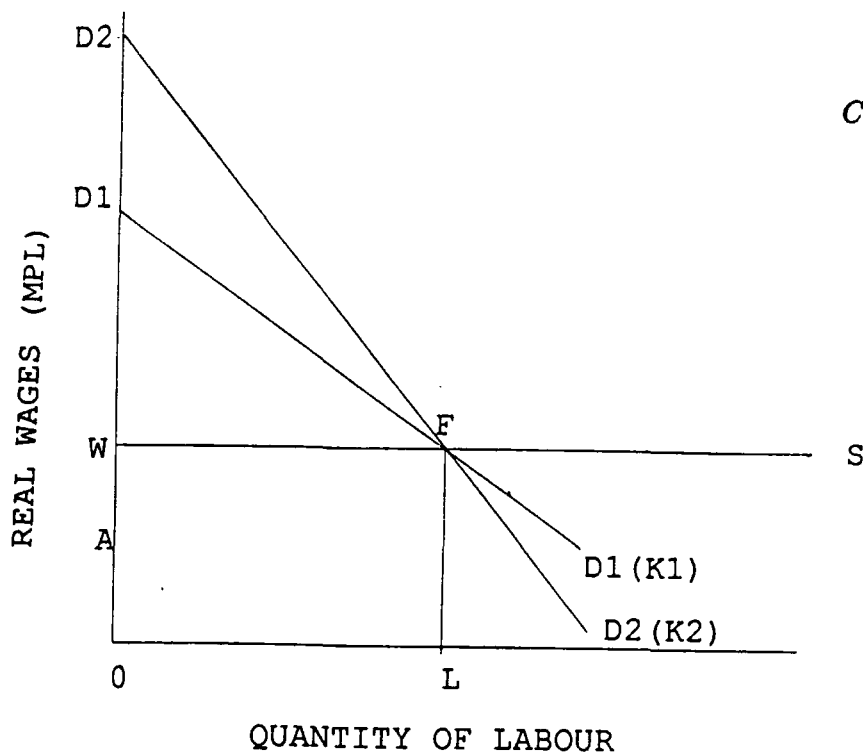


Figure 3.3: Lewis's Model as Modified by Todaro

Source: Todaro, 1977, (p.11)

Because of these shortcomings, Todaro considers the Lewis-Fei-Ranis model to have little relevance to the developing countries since it offers little analytical and policy guidance and he came up with his own model.

In his model, Todaro (1969) perceives the understanding of the causes and determinants of rural -urban migration and the relationship between migration and economic opportunities in urban and rural areas as something crucial to any analysis of the Third World employment problems. Migration is the main determinant of labour supply in the urban sector. Accordingly, the migration process must be understood before the nature and causes of urban unemployment and the policies giving solutions to the urban unemployment must be based on who comes to the town, and why.

Todaro's model starts from the assumption that migration is primarily an economic phenomenon. Despite unemployment in the urban sector, the individual may decide to migrate and join the queue. To Todaro, this decision is rational as migration proceeds in response to urban-rural differences in 'expected' rather than actual earnings. The model assumes that the actual and potential labour forces compare their expected incomes for a given period of time in the urban areas with the current average rural incomes. The decision will favour migration if the expectations are better than the current rural incomes. Consider the following illustrative example where:

$$Y_r = 50 = \text{Annual average real income in rural areas,}$$

$$Y_u = 100 = \text{Annual average real income in the urban areas,}$$

$$P = 20\% = \text{Probability of migrant securing a job.}$$

Despite the fact that the expected urban income is double that in the rural areas, according to Todaro's model, the decision would be not to migrate. The probability of securing a job reduces the expected income to only $0.20 \times 100 = 20$. So, limited by the time horizon and the probability of success of 20%, the decision to migrate would be irrational despite the differential between his rural and urban income capacity. The decision to migrate in such a case would be rational only if the probability of finding a job is over 50%.

In reality, as stated by Todaro, young migrants think over a longer period of time and anticipate that the probability of finding a regular wage employment in the start of the period is low but is expected to increase as time passes. In such a case and as long as the present value of the expected net urban income

over time exceeds that of the expected rural income, the decision to migrate is rational and justifiable. Consequently, people may be expected to migrate even if the probability of finding a job is less than 50%.

Todaro's model has been criticized on various grounds. A study made by Rampel (1970) in Kenya has shown that his results do not fit with Todaro's model. He indicated that, although 84% of villagers need jobs and land, and these are primary motives for them to leave home, at the same time distance and cost of moving are major factors hindering rural-urban migration in Kenya.

Todaro's model is also criticized on the ground that it is difficult to measure the income obtained in the urban and rural areas. It is difficult to measure the urban workers' income since some of it is sent back to the village as a remittance and part of it is used to help newly arrived migrants from the same village. In the rural areas the rent is free and the cost of living is low, so it is difficult to measure the rural income. Although there is difficulty in measuring and comparing rural and urban incomes, Todaro's model is relevant for a rigorous future study.

3.3 Towards a General Theory of Migration

In general, migration theories should explain clearly the reasons and causes behind the emergence of this phenomenon. Woods (1985) expects a general theory of migration to tackle and answer such specific questions as *why does migration occur?*. In such a case this theory should restrict itself to the "essential point at issue and without reference to a specific time horizon". Consequently, this theory would serve to remove many of the difficulties that have restricted migration studies in recent years.

Woods has listed two essential elements that are crucial for any construction of a general theory of migration. The first is the *structural context* which is connected to the economic and material circumstances of a population. The second element is the *behavioural response*, because it deals with the actions and reactions of individuals and family groups.

The structural context includes the economic, social (cultural) and political (legal) framework of any society which conditions the behavioural response of the people. By turn it gives rise to forms of action or behaviour. In the top layer is the *outcome*, which is observable, measurable and recognizable (Figure 3.4).

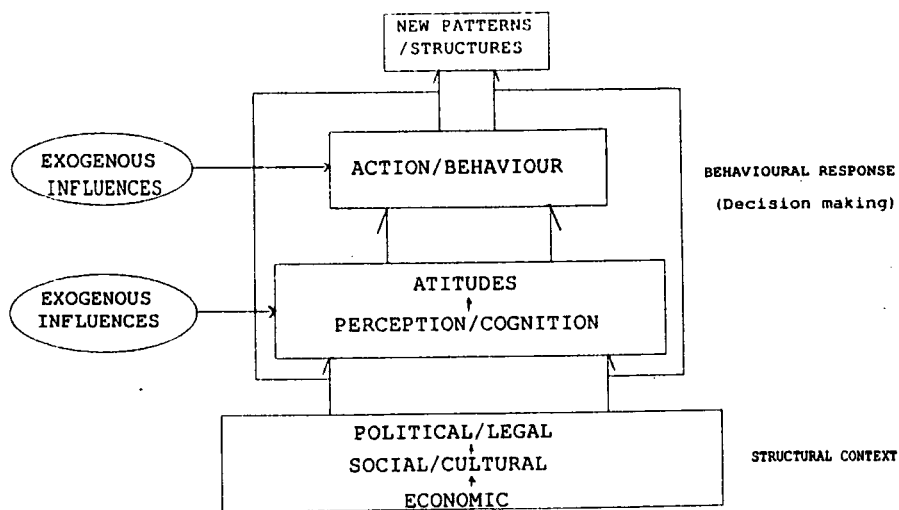


Figure 3.4: Wood's Framework for a General Migration Theory

Source: Woods, R., 1985

Even to Woods himself, Figure 3.4 does not satisfy the need for a general

theory of migration, but it helps the movement towards the creation of such a theory. The good thing about this framework is that it serves to combine the decision making of individuals and the behaviour of the groups. This combination provides a chance to integrate the diverse elements of migration.

3.4 Determinants of Migration

Urban populations form and redistribute themselves primarily through migration but, according to many specialists, until relatively recently, little was known in detail about why migration itself occurs. The way the population arranges and rearranges itself in space answers the changing economic needs both of individuals and of the nation. But, while migration clearly provides a means of correcting economic imbalance and social disadvantage, it is also the source of selective and uneven urban growth.

The combination of high fertility and shrinking labour demand in rural areas (e.g. because of agricultural mechanization) in almost all of the developing countries produced increasing unemployment. Confronted with this problem, many people move and are drawn to the urban centres, attracted by jobs and amenities of urban life heard about through relatives, friends and increasingly, the mass media.

To review the determinants of migration, many theoretical approaches explain these determinants as economic and noneconomic. The discussion and evidence are couched primarily in terms of rural-urban migration in the third world which is of course particularly relevant in the case of Sudan.

3.4.1 Economic reasons

3.4.1.1 Income differentials

As has been stated by Todaro, it is not the real income or employment differences, but the perceived income and employment opportunities that motivate migrants. The probability of rural-urban migration is directly related to the perceived rural-urban income differential and the probability of obtaining a job in the town. Costs of moving reduce the probability of migration.

The relevant income differential is the future income. Most migrants expect low earnings in the early period after their arrival to the city, but anticipate higher future earnings. This anticipation accounts for a higher migration rate among young persons aged 15 to 30 years. Young people expect to earn a higher urban income for a greater number of years and as a result they anticipate a greater rural-urban income difference than older persons.

The second motive is the desire for income security. If the future income is perceived as unstable or falling, as when a series of years of bad crops lowers yield expectations, the net effect is to reduce the expected income level.

The level of skill is also related to the rural-urban-income differential. Numerous case studies illustrate that the educated are more likely to move. The Tanzanians, for example, are associated with sharper rural-urban wage differentials for additional years of schooling. The cost of moving as measured by distance or absence of kin in the place of destination is more important, in some cases, than the urban income variable. Rampel (1970) includes both distance and presence of kin at the destination in his model of Kenyan rural-urban migration and both

variables are shown to be highly significant, while the perceived income level is not.

3.4.1.2 Expectation of employment

Just as the relevant income criterion is future income, the relevant employment criterion is the probability of obtaining a job in the modern, or formal, sector by the end of the specified waiting period. Being unmarried and without dependents, young migrants are assumed to tolerate a longer waiting period because their waiting costs are lower and also because they expect payoffs spread over a longer period once they obtain a job (Findley, 1977).

Many migrants enter the informal sector and this illustrates the weakness of the assumption that migrants strive and look only for formal sector jobs. Studies of migrants in the informal or small scale sector in Lima, Nairobi, Kuala Lumpur and many other cities show that migrants respond to the perceived urban opportunities for entrepreneurship (Nelson, 1979). Many migrants start by working in the family enterprise and eventually develop a small firm of their own. Thus, urban, formal-sector wage and employment rates are unlikely to affect the migrants who envision themselves ultimately as independent entrepreneurs.

Availability of jobs in the rural areas or the nearby cities and towns, and the existence of large potential demand for their products reduce net out-migration. As stated by Findley (1977), empirical findings from Bolivia, Indonesia, Nigeria and Sierra Leone show that areas that offer off-farm employment have reduced net out-migration. However, there would also be reduced rural-urban migration if the jobs were within communication range and those employed in the nonagricultural jobs continued to live on their rural farms. Hence, and according to Findley (1977),

although they effectively participate in the urban labour market, they are not considered as rural-urban migrants.

3.4.1.3 Cost of moving

Even if the individual migrant anticipates net gains from migration, the cost of moving may prevent him. Increased distance leads to increased transportation costs of moving. These costs can be actual (monetary), and/or psychic. Origins located far from cities are expected to have fewer contacts with the destination resulting in less reliable and more uncertain information.

Uncertainty causes potential migrants to discount information about urban income or employment differences; therefore, distance reduces the perceived income difference, (Findley 1977, 346).

Urban cost of living, urban crime, missing the family at the area of origin, these and other factors work also as hindering migration from rural areas to urban centres.

3.4.2 Non-economic reasons

Many researchers in noneconomic disciplines do not dispute or deny the basic economic motive and reality behind rural-urban migration. Rather, they focus on socio-cultural elements that shape the potential migrant's response to economic pressures. They try to explain why some do not move and why the choice of destination is not always consistent with the economists' expectations. These elements are :

3.4.2.1 Attractive and repulsive factors

As stated by many specialists, migrants are always attracted by a set of positive factors at their place of destination, while they are repulsed by negative factors in their place of origin. To escape the latter factors and move towards the attractive forces, migrants are expected to overcome a series of intervening obstacles. The attractive and repulsive forces include both economic and non-economic factors. The non-economists focus on the importance of social, cultural and geographic factors, such as cultural compatibility, constraints on land transfer, or family conflicts. The intervening obstacles include the cost or lack of transportation, closer destinations, lack of contacts to assist migrants upon arrival, and/or familial constraints on the movement of a household member.

Morrison (1977) stated that, in a national survey of migrants in the US in the 1960s, two thirds of all migrants considered no other destination than the place to which they actually moved. About 60% of the migrants relied on one source of information to explore job opportunities in the area of destination. In one Mexican community, Arzipe (1978) found that rural families with more than five children are four times more likely to have a migrant member than those who have fewer children.

3.4.2.2 Selectivity of migration

Findley (1977) mentioned that places with the most attractive forces are generally the metropolitan ones. The better educated and those with some non-agricultural job training are found, in many studies, to be over represented among the metropolitan in-migrants. The less educated, the very poor and the unskilled have a greater likelihood of choosing a rural or a small-town destination (Connell,

et al, 1976).

From a survey conducted in many Indian villages, Connell has found that educated individuals wish to use their education as a tool for a better life, which is possible only if they migrate, even if there is a risk. Unlike the educated, the illiterate may find themselves also in need of moving out, but not to areas with uncertain payoffs. Both types of migrants may arrive at the same destination. This phenomenon may occur when the destination remains the most attractive one for both of them.

As for age, young persons without dependents often have fewer responsibilities than older persons and they have a longer time horizon over which to spread future earnings. They can tolerate longer job search periods.

3.4.2.3 Migration risks

The intervening obstacles produce many risks to the individual migrant. Kin or friends at the area of destination are very important in reducing these risks. Nelson (1979) stated that many migrants enter the informal sector where they may be employed by kin or friends or where kin networks are vital to the establishment of a family enterprise such as a tea stall, shoe repair shop, or laundry. They choose the informal sector because it allows them a freedom and potential not available either in the rural area or in the urban formal sector. For them, kin or urban contacts provide valuable information concerning potential markets, where to set up business and how to obtain the necessary permits.

How migration affects people's material wellbeing and personal satisfaction is somewhat ambiguous. As mentioned by many scholars, migration is not equally

advantageous for all types of migrants. The skilled, or educated worker is better equipped to compete in new labour markets and he stands to gain more from moving than do his less skilled or educated counterparts.

To judge whether migration experience is favourable or not, Morrison (1977) advised us to compare migrants and non migrants from the same place of origin. If the migrants are found to be more successful then migration experience can be regarded as successful. Another way of judgement is to compare migrants and non migrants at the places of destination where opportunities are the same for both migrants and natives alike.

Whichever comparison is made, Morrison concludes that a central ambiguity remains. This ambiguity is represented in life; the question is whether the act of migration leads to a better life or whether the act is merely selective of certain persons who would have improved their status irrespective of the decision to migrate.

3.5 Consequences of Migration

3.5.1 Migration and Development

According to Mabogunje (1970), rural-urban migration is a basic element in the transformation of a society's structure wherein people move from smaller agricultural communities to larger non-agricultural ones. This he called the spatial or *horizontal* dimension of the movement. The socioeconomic or *vertical* dimension of the movement involves change of skills, attitudes, motivations and patterns of behaviour, which may result in the migrant breaking the links with his or her rural background and becoming completely committed to urban life and existence. Also,

rural-urban migration could be regarded as an important spatial concomitant of the economic development of the region where it is taking place. According to the suggestion of Lewis (1955) one of the most important goals of economic development is the change and reversal of the situation where 85% of the population is in agriculture and living in rural villages, and at the same time only 15% are performing non-agricultural activities and living in urban areas. *Rural-urban migration represents the spatial flow component of such a reversal. It is a complex phenomenon which involves not only the migrants but also a number of institutional agencies, and it gives rise to significant and highly varied adjustments everywhere in a region* (Mabogunje, 1970,2).

Mabogunje (1970) tries to demonstrate how a rural-urban migration theory can be both detailed and comprehensive by constructing it within a framework of *General Systems Theory*. He argued that few of the current theoretical models had tackled rural-urban migration as a *spatial process whose dynamics and spatial impact must form part of any comprehensive understanding of the phenomenon* (p.2). His systems approach to a theory of rural-urban migration is drawn schematically in Figure 3.5, and it can be summarized as follows:

The potential who is motivated to migrate by *stimuli* from the environment in which he lives. By environment Mabogunje means the forces that stimulate the individual to change his basic location and mode of work and living and thus determine the volume, characteristics and importance of rural-urban migration. This environment includes forces like transportation and communication development, and greater integration of rural economies into national economies. This makes the rural economy more sensitive and responsive to changes and fluctuations in wages and prices, and demand pattern within the region.

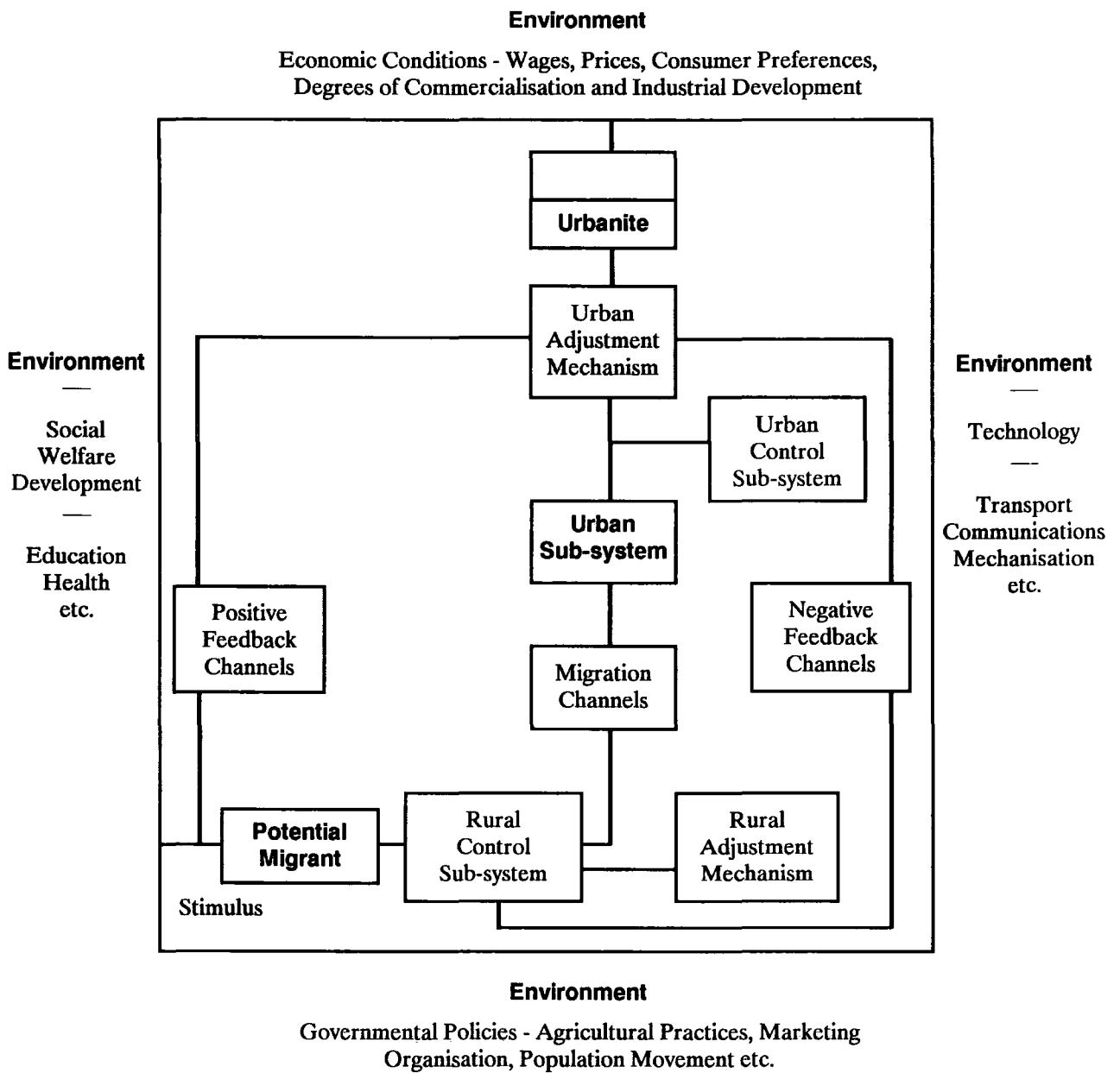


Figure 3.5: Mabogunje's System Schema for a Theory of Rural-Urban Migration

Source: Mabogunje, 1970, pp.3

The environment also includes government legislation and policies that affect rural communities. According to Mabogunje, all these forces together have played an important part in breaking the isolation of rural areas and bringing them *within the orbit of one or more urban centres and sharpens the awareness and desire of villagers for the ever increasing range of goods and services which the urban centres have to offer* (p.4). These are acquired by the villagers producing more agricultural goods and entering into exchange relations with the city, or by directly entering the city to sell their labour in exchange for wages.

For a valuable understanding of the process of rural-urban migration, according to Mabogunje, attention is to be focused on what he called *control sub-systems* or various institutions and socio-economic and other relationships (*adjustment mechanisms*) which he considers as an integral part of the migrant's transformation. These sub-systems include:

1. Rural control sub-systems:

These sub-systems include, mainly, the family in its nuclear and extended forms. In some places the family enables both sexes to move out; in others one sex may be allowed to venture beyond the local territories. The customary roles of males and females in agricultural activities affect the decision to migrate, who migrates and when to migrate. According to age the young individuals may expect themselves to be economically independent of their parents, and thus be able to move out. Not only the family, but also the village community with its social and economic rules, norms and values may act as a control sub-system in a direct or indirect way. Therefore, any study of rural-urban migration should understand the different reactions of different communities to migration out of the village, and

it should investigate village activities and administration and the degree of social and economic integration in the community.

2. Urban control sub-systems:

These sub-systems operate to determine whether the migrant is to be encouraged or discouraged to be absorbed into the urban environment; this absorption may be residential and/or occupational. The transition of the rural migrant could be made easy or difficult by the city administration in the hands of which lies the possibility of the migrants securing or not securing cheap and adequate housing. On the other hand, the securing of an employment lies in the hands of the numerous employment agencies and organization. To Mabogunje, *the effectiveness with which these organizations function can be crucial for the inflow of migrants. However, once the migrant has secured an employment, a number of other factors determines his final commitment. Among these are: the type of job he secures, whether seasonal or permanent, the opportunity the job offers for improvement in his skill and for advancement in his status, the provisions available for security against the normal hazards of industrial life, and his eventual retirement due to old age* (p. 7).

Both sending and receiving ends of the migration stream will be affected and a series of adjustments at both ends will be set in motion by the migrant decision to move. As stated by Mabogunje (1970), in Africa rural-urban migration encourages individual land-holding and treatment of land as a marketable commodity. This is clear in the Eastern Region of Nigeria where rural-urban migration has led to a new pattern of ownership and land distribution, particularly in areas near urban centres. Leasehold or rent of agricultural land on annual basis has become

widespread in many parts of West Africa. This leasehold serves as a means of re-allocation of agricultural land which would otherwise be left fallow or unutilized because of the absence of its owner as a result of migration to the city. In other cases, the migrant may give the right to another person in the village to exploit tree crops such as oil-palm, cocoa, or rubber either by outright monetary payment or by share-cropping arrangements. The ultimate effect in such cases, according to Mabogunje, is the fact that some members of the village community are enabled to increase their net income by the expenditure of their under-utilized labour. This encourages villagers to produce more for the market, diversify crops and, thus, reduce the subsistence sector in the village economy.

Mabogunje also stated that this process of adjustment is induced (in many cases) by government, the outcome of which is a widespread migration from rural areas, as in the case of Britain in the 18th and 19th century and the current Central and Eastern Africa. The example given by Mabogunje is that of Rhodesia (Zimbabwe) where the change of the land tenure act in 1951 led to individualized agricultural holdings and resulted in the loss by many farmers of their right to cultivate former family land; the outcome was a flood of migrants with no alternative but to migrate to gain wage employment in urban areas. Reaching the city where everyone is trying to specialize skill, the illiterate, and unskilled rural migrants would be the least able to compete and are seen as belonging to the lowest level of what he called the *hierarchy of specialization* in the city. *The more specialized the skill, the greater the demand for it, and hence the higher the price it commands on the market* (p. 8). In the Sudan, government policies are characterised by the development of the urban areas and concentration of economic activities (particularly industry) in major cities. The result is differentiated wage rates for workers

and rates of profit for capital between urban and rural areas and over the various regions of the country. Commenting on the same issues in the Sudan, El-Tayeb (1985) stated that the wage differential represents the driving force on the part of labour to move from where wages are low to where they are higher; *the differential rates of profit express the degree to which capital is attached as well as its increasing demand for labour* (p.43). See also section 3.6.1.

Therefore, Mabogunje considers rural-urban migration no longer as a linear unidirectional, push-and-pull, cause-effect movement but otherwise as a circular, interdependent, complex and self-modifying or adjusting system wherein the effect of changes in one part can be traced everywhere else in the whole system. To him rural-urban migration is also a continuous process occurring in almost all the countries of the world, but at different levels of complexity.

In Western Africa, population migration was affected by two historical processes; the penetration of peripheral capitalism and colonial imposition of administration. As stated by Riddell (1981) the two processes led to a restructuring of the space-economy of that region to pave the road to suit the requirements of the capitalist economy wherein the raw materials are produced for the urban areas and migration is manipulated by the colonial authorities. Those colonial administrative systems induced and compelled people to move to the appropriate places chosen for them in the required numbers. The effects of these processes lasted for longer than the colonial period in that region (70 years) because serious changes were brought about by colonialism and capitalism particularly as regards the society's cultural reorientation to external forces.

To Riddell (1981) migration in Western Africa was influenced by the fact that

the region was producing cash crops oriented towards export from small-scale farmers. This was very similar to the situation in the southern part of Africa; the only difference being that the latter depends on the industrial (not agricultural) mining production. *In this sense, West African population movement was largely influenced by the restructuring of the space-economy, and the manipulation of migration was only important at certain times and in certain locations* (Riddell, 1981, 384).

So, According to Riddell (1981) migration decision in West Africa during the colonial period could not be described as rational and made freely by an individual. To him, migration in that region, in that period may properly be described as *'freedom within a wider set of constraints' or as 'individual elbow room within aggregate determination'* (p.384). This is because of the lasting effect of colonialism and capitalism in the structure of the socioeconomic systems. The responses of migrants to the available alternatives was always made within a predetermined framework.

Despite the unequal powers of the colonial and domestic systems in West Africa, the contact between the two systems has destroyed some aspects of the domestic socioeconomic systems, ignored others and enhanced certain other aspects. The example given in this respect by Riddell (1981) is that, in the areas where British influence was great, cloth weaving was discouraged, land holding systems maintained, and the status and position of some chiefs within the political system was improved. Foster-Carter (1978) called such contact an articulation of the modes of production and not a penetration. During the British colonial period in the Sudan, the land holding system was changed in certain areas of the country (as in the former Blue Nile province) and the previous owners of the land were transformed into tenants. The local administration and status of villages' *sheikhs*

and *omad* during that period was left intact and even their political power and influence over their people were enhanced and more recognised.

To Amin (1974a) modern labour migration in West Africa can best be understood through the uneven impact of capitalist expansion upon tribal societies. Mobility reflects an aspect of proletarianization. According to Amin (1974a) the spatial impact of capital in West Africa could be identified in three types of regions:

- a. Regions organized for large-scale export production. These regions have already entered the capitalist phase which implies private appropriation of land and availability of wage labour.
- b. Regions formed as a result of colonial economic policies which have continued to be followed even after independence to be serving as reserves that supply this salaried labour.
- c. Regions which are not as yet part of the system and serve only as auxiliary reserves.

In the case of the Sudan the spatial impact of capital is clear in the establishment of the Gezira scheme as a modern irrigated agricultural project in 1926. The establishment of such a scheme led to the emergence of the Gezira province as a large-scale exporter of cotton. At the same time, and as mentioned by Heinritz (1985), the development strategies in the Sudan deliberately neglect the traditional agricultural sector to secure the flow of seasonal labourers from it to pick cotton in the Gezira scheme and others (see section 6.5 paragraph 4 in chapter 6).

The development by capital of certain regions and the corresponding underdevelopment of others is not sufficient (alone) to cause such widespread population

mobility. Different policies have been applied in different regions to ensure a supply of labour, ranging from coercion and imposition of taxes to strategies of urban-oriented education. But, according to Amin (1974a), the process has gone out of hand. *It has gone beyond its intended objectives as a result of its own dynamism, and beyond the society which tried to enclose it; in other words the 'rural-exodus' has become uncontrolled, uncontrollable and explosive. Such is the law of the development of social contradictions that, what is functional at one stage becomes 'dysfunctional' at another, that is, it puts in jeopardy the social organization from which it grew* (Amin, 1974a,98).

Thus, for Amin (1974a) migration is a direct result of the reorganization of West African society brought about by the expansion of capitalism and its need for physical resources and, more importantly labour. To confirm the relevance of Amin's work to Indonesia, Titus (1978) classified Indonesia's provinces into three broad categories according to lifetime migration rates, based on the 1971 census data. In the first category are the provinces which are characterized by high mobility rates and high immigration (as Jakarta). In the second are places like South Kalimantan, where there are low rates of mobility, and in the third category are the provinces which have high levels of out-migration like West Sumatra. His second task was to categorize provinces using a contrived measure of regional inequality, based on scores of the provinces's centre or periphery status, and including such measures as presence of big urban centres and the extent to which the province is dependent upon single export. On this basis provinces are categorized as centre (C1 and C2 - Jakarta and North Sumatra) and three levels of periphery - P1 (South Sulawesi), P2 (East Kalimantan) and P3 (Nusatenggara) - respectively less and less centre-like.

The correlation between the two sets of data led Titus to come up with three results: *The greatest mobility together with net in-migration is to be found in ... the economic 'boom' provinces of both the centre type (Jakarta, N. Sumatra) and the relatively developed periphery type (S. Sumatra, Riau, E. Kalimantan) ... The lowest mobility and a zero-migration balance is to be found... in the isolated and still largely self sufficient periphery type of province i.e. E. and W. Nusatenggara... Finally the highest mobility together with net out-migration appears ... in the highly integrated but stagnating peripheral provinces close to the centre regions (W. Sumatra, C. Java, Yogyakarta)* (Titus, 1978: 200). Almost the same story applies to the Sudan (see chapter 4, sections 4.3 and 4.4).

The importance of Titus's findings is that it demonstrate the need to examine the process of uneven development, the forces which have given rise to this process, and the process which seems to be perpetuating it.

3.5.2 Migration and Urbanization

As stated by Todaro and Stilkind (1983), the cities of the developing countries are growing at an extremely rapid rate. Millions of people are moving annually from rural to urban areas in these countries despite many of the largest cities having abandoned any attempt to provide more than minimal sanitation, health, housing, and transport services to their dense populations. *Industrial production has expanded, but so too has urban unemployment and underemployment. In the countryside the people are scarcely better off now than they were 15 years ago, and in some areas their situation has worsened,* (Todaro, and Stilkind, 1983, 193).

The example given by Todaro and Stilkind (1983) is that in 1950 some 38% of city dwellers were living in the developing countries. By 1975, about the same

number of developing-countries people - (750 million) - lived in cities as those in the developed countries. The same source forecast that by the year 2000, more than 1875 million will populate the urban areas of the developing world, while the cities of the industrialized world will have increased by less than 50% (i.e. to about less than 1125 million). In 1975, only 16 developing-world cities had a population in excess of 4 million; by the year 2000 these will be 61. In the period 1975-2000, the cities of Africa are expected to grow by 336%, to about 250 million population; South Asia by 298% to almost 800 million; Latin America by 235% to over 450 million; and East Asia by 225% to more than 500 million. In 1950, and according to Todaro and Stilkind (1983), eleven of the world's largest cities were in the developed countries; in 1980 this number shrank to seven and by the year 2000 only three will be. In the case of the Sudan, the urban population has increased by 400% in the period 1956-83, and its share of the total population has risen from 8.3% to 20.5% in the same period (see section 2.3.4 in chapter 2, and section 5.2 in chapter 5).

The possibility of earning larger salaries in the cities has been the major stimulus (along with numerous noneconomic stimuli) to mass migration from rural areas. This excessive urbanization in the developing countries is regarded by Todaro and Stilkind (1983) as a defect of those countries that have not been able to create large enough domestic markets to stimulate both agriculture and industry to produce more, and at the same time the overseas markets of the developed nations shrink in response to economic policies designed to protect their domestic manufacturers. The policy of neglecting the agricultural sector in the developing countries has produced stagnation or inadequate growth of income in rural areas, and at the same time urban job opportunities have not grown as fast as the numbers of

job seekers. This is because of the strategy of importing large-scale, labour-saving technology to achieve instant and quick industrialization.

Todaro and Stilkind (1983) used the word *overurbanization* to describe a situation in which cities cannot adequately provide their rapidly growing populations with basic services and reasonable job opportunities, (p.196). According to them, after World War II, economists in the West and governments that gained independence looked for theoretical guidelines and practical policies to promote development; and they thought they had the model of industrialization. The movement of people and resources from rural to urban areas was expected to provide cheap labour and forced savings to stimulate urban industrialization. At some point rapid urbanization would slow down resulting in a less populated and more productive agricultural areas. Then, rural people would be as well off as workers in the industrialized cities. At that level migration was expected to slow to a trickle as a result of the absence of the economic incentive to migrate. But, according to Todaro and Stilkind (1983), industrialization did not become the engine capable of pulling a whole community to a modern and equitable platform. By the early 1970s the failure of the industrialization strategy had become clear and a new consensus on the most desirable development strategy appeared. That new strategy emphasized the role of agriculture and the importance of improving the income levels of the poorest people in society. But the commitment to this strategy today has not been strong to the extent that can change the past decades of policies of urbanization-industrialization.

3.5.3 Migration and urban unemployment

Many developing countries have used agriculture heavily as a source of revenue

to provide for the pace of industrialization and urbanization. Such a policy has resulted in a significant urban bias that has become ingrained in the economic life of most of the developing nations. The result is a widening rural-urban expected income gap, and high rates of rural-urban migration despite growing urban unemployment. This rural-urban labour migration is accelerating throughout many less developed countries, especially those of tropical Africa. One estimate put net migration as accounting for between one-third and three-fourths of the urban population growth in the less developed countries. Table 3.1² describes the share of urban growth due to migration for a group of developing countries between 1970-75. Tanzania, Nigeria, and Sri Lanka experienced the highest share of urban growth as a result of internal migration; all in excess of 60%. In the Sudan, a large proportion of the urban growth is also attributed to rural-urban migration. The estimated annual population growth in the country was 2.8% in 1983, while the urban population growth rate was 6%. More than 50% of this urban growth rate is attributed to rural-urban migration (see section 5.2 in chapter 5).

For the whole developing-world population, the pace of urbanization as a result of rural-urban migration has been so fast. In 1950 some 16.7% of that population was living in cities. By 1970 the proportion increased to 25.8%, and is forecast to be 43.5% by the year 2000 (Todaro and Stilkind, 1983). Regionally, 22.9% of Africans lived in urban areas in 1970, against 20.5% of South Asians, 28.6% of East Asian and 57.4% of Latin Americans. Trebous (1970) commenting on the pace of urbanization in Algeria mentioned that the urbanization process of the country is recent and rapid. In 1930, Algeria's urban population was 300,000 (5% of the total population) and it accounted for 25% in 1960, 33% in 1963 and 38% in 1966. He

² This table is cited in Todaro and Stilkind (1983) p. 198.

**Table 3.1: Internal Migration as a Source of Urban Growth:
Selected Developing Countries, 1970-75**

Country	Annual Urban Growth (%)	Share of Growth Due to Migration (%)
Argentina	2.0	35
Brazil	4.5	36
Colombia	4.9	43
India	3.8	45
Indonesia	4.7	49
Nigeria	7.0	64
Philippines	4.8	42
Sri Lanka	4.3	61
Tanzania	7.5	64
Thailand	5.3	45

Source: K. Newland, 1980

attributed this staggering growth in the urban population in a period of 35 years mainly to the drift from the land in rural areas towards the larger towns. This movement has resulted in a crisis in agriculture and animal husbandry associated with the partial or total desertion of land formerly cultivated, urban unemployment and renewed migration abroad; mainly to France.

Many Developing countries have shown dissatisfaction with the size and speed of the growth of their largest cities. Rural-urban migration and natural population increase in these urban areas have led to an unprecedented rate of population growth and overloaded public services and social infrastructure. It is common in most of developing world's urban centres to find the streets congested and noisy, their air and drainage ditches often polluted, inadequate housing, slum and

squatter dwellings, bad and inadequate sewerage facilities, and rising levels of urban unemployment. Despite all these problems rural-urban migration is taking place. The answer to this paradox is that migrants (in many cases) are actually better off economically in the urban centres than in their villages. But Gugler (1976) stated that incomers to the urban informal sector may well be worse off, in real terms, than if they had stayed in the rural economy, in spite of the fact that some of these migrants are widely known to have been highly successful. The case in the Sudan is similar to what is mentioned by Davis (1977) and is clear from the discussion by the author in the analysis of the migrant household survey in the capital city of Khartoum (see sections 5.9 and 5.12 in chapter 5). The main reasons behind this paradox are summarised by Simmons (1983) as follows:

1. Lower death rates and agricultural development resulted in rapid growth of population and has led to a large landless class and unemployment in rural areas;
2. Seasonal employment and subsistence agriculture provide low levels of income, stimulating people to drift to urban areas;
3. Concentration of public and private investment in urban areas versus smaller investment in rural areas make the former attractive to the migrant;
4. Employment in government and modern industry provides workers and professionals with higher wages;
5. Emergence of a larger "informal sector" of hawkers, vendors, cabmen, gardeners, shoe makers, car washers, maids and other assorted workers. Wages in such marginal jobs are generally low but sufficient to attract rural migrants.

However, inflows of migrants has far exceeded the employment-absorptive capacity of Third World cities, creating massive problems of urban unemployment. As stated by Riddell (1978) the urban population growth rate of about 7% per annum in West Africa in recent years has been double the growth rate in modern sector employment. Bairoch (1973) demonstrates that the share of Third World population living in urban areas considerably exceeds the share of active population employed in manufacturing, in sharp contrast to the earlier development experience of European countries. Most of the rural-urban migrants in the developing world survive by joining the ever-expanding "informal" or "unregulated" sector of activities. Under free market conditions one might expect the labour surplus to force down modern sector wages, but this is often prevented by minimum wage legislation and by the growing sensitivity of multinational corporation to their internal and international reputations.

3.5.4 Migration and rural depopulation

Davis (1977) regards rural outmigration as a geographical manifestation of an occupational exodus. In rural areas the chief industry is agriculture because it has to be spread over the land, whereas most other industries can be concentrated because they use land only as a site and not as a means of production. Other industries can then be crowded together to overcome the friction of space in the interchange of goods. Therefore, these industries expand rapidly, whereas agriculture, with inelastic demand must reduce its labour force drastically as it substitutes machinery and fossil energy for human labour. Such reductions and displacement of labour impels small entrepreneurs to sell out and causes farm labourers to become unemployed. The result is a mass exodus from agriculture and hence from regions where agriculture is the predominant industry.



If the fact that outmigration from rural regions is primarily a function of exodus from agriculture is taken as granted, then Davis (1977) asked, how does this outmigration affect population growth?; to him, the answer is not simple. Population trends are not determined by migration alone but also by births and deaths. These three components of population change are mutually dependent. According to Davis, the impact of outmigration is not due solely to the migrants who leave but also encompasses the births and deaths they would have had if they had stayed. But despite these difficulties in assigning exact causation, it is known that high reductions of labour force in agriculture have been associated with severe losses of population in the agrarian regions of developed nations. In present-day developing countries the depopulation of rural areas seems often to be delayed. That is, it appears to come at a later stage of development than it did in the history of industrialized nations, and it may be at a slower rate when it starts. The reason is not the lack of rural-urban migration which is occurring on a large scale, but it is due to a higher rate of natural increase than that experienced by the industrial nations when at the same stage of development. According to Davis, due to much lower mortality and somewhat higher fertility, the natural increase of rural regions of today's developing countries appears to be two or three times that of the developed countries when they were at the same development stage; and consequently, the rate of outmigration is lower.

The rural outmigration influences the rural population age structure. Davis tried to determine this influence by decomposing the gross population change into that due directly and indirectly to natural increase, the result of which depends on the stage of development. That is, if the society is in its early stage of development, rural fertility will tend to be high and outmigration relative to the existing rural

population will be small. In such a case, the rural population will be young. In later stages of development, when the agricultural population is near to decline or has already started to fall as a result of rural outmigration, the rural birth rate will have been much reduced and consequently the outmigration relative to the existing rural population will be high. The ultimate result, both outmigration and declining rural fertility give the rural areas an aged population.

Table 3.2 represents the example given by Davis to show the distorted age structure of the rural population of Sweden and USA at different stages of development. To him, the similarity (except in rates) of the two countries is astonishing. In the case of Sweden, Davis estimated that 80% of this change in the age structure was due to outmigration, and the rest to natural increase.

Table 3.2: Effect of Outmigration on Rural Age Structure

Country	<i>Ratio of persons aged 15-39</i>	
	To those aged 40+	To those Aged 65+
Swedish rural districts:		
1850	1.54	8.2
1970	0.75	2.5
U.S. rural-farm population:		
1920	1.53	7.5
1970	0.67	2.5

Source: Davis, K., (1977, 159)

With respect to sex composition, rural outmigration in African and Asian countries tends to be more males than females. Davis attributed this male selec-

tive migration to complex and different factors. As he mentioned, in the countries of Asia and North Africa, the customs involve prejudice against the migration of women to the city on individual basis. The African and Asian countries in general, and Central African in particular show great reliance on hoe and hand agriculture which is practised and performed by women. Furthermore, high agricultural density in these regions gives rise to surplus labour in off-seasons, leading to seasonal migration to urban centres. Finally, as Davis mentioned, the high fertility and early marriage in Asia and Africa puts greater burden on young women with children than what has been the case with the Western countries. To Beaujeu-Garnier (1982), the demographic consequences of migration, reveal themselves and are traceable not only in statistics but even in the character of the population at both areas of origin and destination. To her *sex ratio may be disturbed to a greater extent, and the age pyramid may assume strange shapes. In general it may be said that men are more prone to migration than women, and it is not uncommon for the departure zones to become depopulated of their menfolk, or at least of the young men, whilst the reception areas have an unfortunate lack of women* (p. 229). The example used by Beaujeu-Garnier was that of the United States during the period of maximum migration when there were 129.2 men to 100 women in 1910; and amongst some immigrant groups the disproportion was even higher, amounting to 189.8 for the Chinese and 296.8 for the Philipinos in 1950, and 392.8 for the Indians in 1940. Since 1950 the case has changed and reversed and there were only 97.9 men to 100 women in 1960. Beaujeu-Garnier attributed this change to the slackening of immigration and a variation in the composition of the immigrants in recent years with the influx of wives and wartime brides between 1941 and 1950, a period during which the sex ratio of the immigrants was only 68.

The situation in the less developed countries, as in Africa, is different. As stated by Beaujeu-Garnier, in Africa it is the man who generally goes off to towns and stay there for life, resulting in scarcity of women in towns a thing which leads to bad habits of divorce and prostitution. All these migration features, added to the fact that most of the migrants are relatively young, affect the age structure. She concluded that in the comparison of numerous statistics of migrations of the economic type or motive, more than half the individuals who go to seek work elsewhere were under the age of thirty, with one-third actually between twenty and thirty.

But in all of these phenomena of damping or elimination of rural population growth, the aging of the rural population and sex distortion, outmigration can not be held as solely responsible; other factors also play a role. Davis stated that, the more economic or social the phenomenon in question the less can it be attributed totally to migration, because of the diversity of other additional variables involved. Anxiety about the socioeconomic consequences of rural outmigration usually displaces the attention from the outmigration itself to the demographic changes it produces. This concern quickly attributes the decline, aging and sex distortion of rural population to outmigration, and then concentrates on the consequences of these intermediary factors.

Davis concluded his argument by the statement that rural outmigration adds and contributes to the development and well-being of sending regions. But if that is the case then why is the opposite often assumed, and why are policies in many cases aimed at slowing down the rural exodus?. To Davis, the answer has two parts:

- a. Many governments are more concerned with the politically more potent cities than with rural areas. The influx into cities troubles them because it creates urban unemployment and lowers the level of living in these cities.
- b. In the cases where officials worry about the countryside, they tend to avoid the old habit of associating population decline with catastrophe. *They see empty houses, empty stores, schools and churches in rural villages, and this seems to them to indicate economic decline. My suggestion is that the empty buildings be torn down, the areas they occupied ploughed over. Visitors from government headquarters in the city will see only green fields. They will then say how beautiful and productive the countryside is and will return to their offices without being reminded that the population in rural areas is declining,* (p.166).

This point of view of Davis is not shared with that of Galal al Din (1980) when he was commenting on the effects of the rural-urban migration in the Sudan. Galal al Din (1980) stated that rural-urban migration is a completely undesirable phenomenon. In the case of the Sudan, the proportion of rural-urban migrants to the total rural population, and the fact that most migrants tend to stay permanently in urban areas mean that urbanization in the country affects only a small proportion of the country's total population. The bulk of population lives in the rural areas, and the tasks of improving productivity in agriculture, animal husbandry, and fisheries and improving the welfare of the people by provision of better amenities and social services should be given first priority in development plans. Concentration of capital intensive industries in urban areas absorbs only few of the increasing labour force, increase the profit of these industries but can only widen economic and social gap between urban and rural population.

3.5.5 Other consequences

The mix of people from different areas and different ethnic groups leads to unaccustomed contacts different from what has been experienced at home before migration. To Beaujeu-Garnier this has led in many cases in both developed and less developed countries to the break up of old rural communities, favours mixing of all kinds and destroys the risks of consanguinity which are prejudicial to the health of their descendants. Conversely, this mix of people may lead to the destruction of the equilibrium of the pathogenic complex in the population. For example, the contact of the white man with the Fuegians has caused spread of pulmonary disease which was unknown before amongst the latter group. Other problems are also stated by Beaujeu-Garnier as arising from the migration process; these problems include problems such as racial contact problems, linguistic differences, religious differences, etc..

3.6 Internal Migration in the Sudan

3.6.1 Background

Studies of internal migration commonly distinguish between rural-rural, rural-urban, urban-urban and urban-rural movements, though difficulties often arise as a result of the variety of ways in which urban and rural populations and settlements are identified. Despite these difficulties, rural-urban migration is recognised as a common phenomenon throughout the world and particularly in the less developed countries. In tropical Africa, as elsewhere, this type of migration is regarded by many scholars as a part of a socio-economic and political change, and it is increasing rapidly. The trends, volume, speed, causes and effects of rural-urban migration differ from one continent to another and from one country to another. As stated by

Hassaballa (1983), this process of migration was slower in the developed countries of the western Europe. In Europe, it took place under favourable conditions, where there were massive processes of development, commerce and industry. Given this slower rate of rural-urban migration in Europe, decision makers, entrepreneurs and developers had enough time to make changes and allocate economic resources to plan for the accommodation of the in-migrants.

The prevailing subsistence economic structure in the Sudan was disturbed at the beginning of this century by the colonial power. The most fertile land was taken and controlled by the colonial authorities and the people were driven into marginal areas. The Gezira scheme was established mainly to supply Lancashire textile factories with the cheap cotton. This process channelled the wealth of the country to pour into Britain and the Gezira economy was transformed into an export-oriented one to develop and strengthen the British economy. Even after independence, the Sudanese governments followed the same line of development designed by the colonial authorities. That is, the focus was on the single export crop, which was cotton.

Most research findings in Africa identify the economic motive as the main determinant of rural-urban migration. The rural 'push' and the urban 'pull' factors always play a major role in determining the direction of migration. Galal al Din (1979) emphasised the significance of the economic motive in the Sudan. He traced the history of contemporary migration in the Sudan and he mentioned that it started in the colonial period when the extraction of the economic surplus was one of the dominant features of that period. Accordingly, control of government over land was practised and a cash and tax economy was introduced. After independence, the same economic structure continued taking advantage of the rural

labour. The poor rural people were left with no alternative other than to go to the urban centres to look for a job. This is because of the fact that in rural areas the agricultural land is the main and almost the sole, source of income and living. The choices of work in and income from sources other than agriculture are severely limited in the rural areas.

The non-economic factors may also affect rural-urban migration, particularly education. Figuring out the characteristics of the migrants in Khartoum, Galal al Din (1979) stated that 30% of the migrants above the age of 15 were illiterate, while the same group represents more than 90% in the place of origin. According to Galal al Din (1979) this can be attributed to the inherited colonial system of education which does not cope with the Sudanese reality. The educational imbalance between rural and urban areas drives the school leavers to town either for paid jobs, or to continue their education. Psychic, social and political pressures are also regarded as important factors motivating people to migrate.

3.6.2 Short-term migration

Migrants may be defined as either short-term or permanent. According to Hassaballa (1983) the short-term migration is sometimes known as 'circular' or 'seasonal' migration where no permanent change of residence is intended, though this contradicts the widely-accepted definition of migration as involving a permanent change of residence.

In the Sudan, the number of seasonal labourers who participate in agriculture is increasing every year. Galal al Din (1979) estimated that about one million migrants leave their rural areas to work in the various agricultural schemes, representing 14% of the total labour force in the country. The flow of migrants is

generally from the less developed regions, where drought and desertification adds to their numbers. The Gezira scheme, the Blue and White Nile irrigation schemes and the areas of mechanized rain fed agriculture are the main destinations for these seasonal migrants. The mechanized rain fed schemes are in fact not fully mechanized, but rather they use machines in ploughing, some stages of weeding and harvesting. Large number of workers are used in almost every other operation such as weeding, cutting of the dura ears to be ready for the harvesting machines, and in loading and unloading operations involved in the transportation of the harvest and even in the guarding of the vast areas of the farm. Despite the fact that these mechanized schemes are sited in the far east of the country, the labour force engaged in their agricultural operations comes from almost all other parts of the country, particularly from the western regions of Darfur and Kordofan. In the 1973/74 agricultural season, 542,000 seasonal labourers were employed in the Gezira scheme picking cotton; 336,000 (60%) of them were from outside the province (Galal al Din, 1979).

Altogether, some 1.75 million work as seasonal labourers, about half a million in the Gezira scheme; a quarter of a million in pump schemes of the Blue and White Nile and another million in the mechanized rain fed agricultural schemes. Gala el Din found that most of the seasonal migrants were between 20-42 years of age. In the Gezira scheme, he found that 10% of the seasonal migrants were less than 10 years old, a figure which rises to 13% for those who came from Darfur region. Gala al Din attributed this phenomenon of child participation in cotton picking to family poverty, and lack of educational services in their sending areas; and even if there is education, the children are expected to be working beside their parents to generate more income for the family. The families find it important for

the child to work as long as his output is close to that of the adults. The tenants in the Gezira scheme and almost all other schemes provide the seasonal labourers with the means of transportation to take them to and fro between the area of origin and the receiving agricultural areas. This condition facilitates the movement of migrant families to the places of seasonal labour.

According to Galal al Din (1979), the average hours of work in these agricultural schemes were 9 hours per day with an average wage per day of 33 piaster (\$.6645). He also found that 70% of the seasonal labourers have a desire to stay in the same areas, 6% were undecided and 6% wanted to move to the nearby towns around the scheme. Galal al Din (1979) predicted the phenomenon of seasonal migration to continue and increase as long as the market in land results in some individuals remaining landless.

3.6.3 Long-term migration

- **Rural-urban migration**

The Sudanese nation is experiencing a massive increase in the scale of migration to big towns and cities. Most theories of economic development which are based on the historical experience of western industrialised nations emphasise the transformation of an economy from a rural-agrarian to one with an industrial, urban-oriented base. This is made possible by the gradual, continuous employment of the redundant or surplus rural labour into the growing industrial economy (Todaro, 1977). According to ILO (1976), the flow of migration in the Sudan would bring about a more productive and efficient allocation of human resources in the economy as a whole if migrants in the country are moving from low-productivity and low income areas to an area where the average earnings are much higher. This

can be judged if we answer the questions regarding the case of the current massive migration to greater Khartoum and to other big cities in the country. These questions are related to the migrants themselves (who migrates?) and the factors behind their migration; what causes them to migrate? and finally to answer the question regarding the official policy formulated to solve the problem of this rural-urban migration and; at what stage should the government intervene to stop migration by a deliberate policy?

In order to answer these questions, it is necessary to know the current rate of flow of migrants into big cities and we will take Greater Khartoum as an example. This will enable us to judge whether migration is increasing or decreasing, whether the newly arrived migrants are able to find work and whether the flow of migration is creating any imbalances in the labour market.

3.6.3.1 Migration flows to Khartoum

Being the main receiving area in the Sudan, Gala al Din (1979) found that 40% of the population of the national capital city of Khartoum (700,000 in 1971) were migrants from rural areas; 37% of them were from the desert and semi-desert regions which contain only 6% of the country's total population. The second most important receiving area was the Blue Nile province, which then contained the whole of the current Central Region; being close to Khartoum it is a transitional destination for migrant labourers from Kordofan and Darfur. Galal al Din also found that 73% of the migrants to Khartoum came directly from their place of origin; the remaining 27% arrived after first having worked in agricultural schemes.

Ali (1987) identified the Northern Region as the leading source of migrants to Khartoum; 36.6% of the migrants interviewed were from that region. The Cen-

tral Region was a close second with 34%; a further 23% came from Kordofan and Darfur. The Eastern Region contributed only 3.8% and the three southern regions combined a mere 2.6%. Ali also observed that the numbers of migrants to Khartoum from the western regions (Kordofan and Darfur) has been increasing in the recent years. This trend he attributed to population pressures in the sending areas, in addition to the socio-economic factors resulting from the spreading poverty and the exploitation by traders (*jallaba*) of the human and natural resources in those areas. Additional factors have been government neglect of the livestock sector in its development plans and lack of attention to the pasture lands, together with the consequences of recent drought and desertification.

Both Galal al Din (1979) and Ali (1987) identify the concentration of investment in Sudan's capital city as a major factor underlying the predominance of migration to Khartoum. A survey carried out by the Bank of Sudan (1986) shows the heavy concentration of banking services in Khartoum. In 1980, 59% of the 176 bank branches offering various banking facilities were located in Khartoum. By 1986 the position had changed significantly with 34% of the 265 branches located in the capital. There was clearly a considerable expansion of banking facilities outside Khartoum during the 1980s but this activity remained heavily concentrated in the city which is also the site of the great majority of the country's commercial and trading companies, industries, educational institutes, health services, and government offices.

In a socio-economic household survey³ conducted by the ILO in 1974 in Khartoum (see ILO, 1976) 46.9% of the migrants interviewed reported their last place

³ This survey was conducted by the ILO in Khartoum in June 1974. It was a socioeconomic household survey and it covered 2,614 households selected by probability sampling method throughout the Three Towns. The objective was to collect data in certain fields about which very little information was available

of residence as rural, while 53.1% reported urban areas. This last place of residence is not necessarily the place of birth. As evidence of step-wise migration, the survey revealed that 12.35% of all migrants who had arrived in Khartoum over the preceding five years had moved to other areas before their final move to Khartoum. The most common feature was a move from rural area to the nearest urban centre, followed by a move from that centre to Khartoum.

3.6.3.2 Characteristics of migrants

• Age, sex and education

The ILO survey revealed that 60.4% of the in-migrants were males, of whom 69.8% were in the age group 15-29 and only 4% were above the age of 50. Of the females (39.6% of the total) the age group 15-29 constituted 66.6%, a similar proportion to that of males, but those over 50 were 10.9%, significantly higher than the male proportion in that age group. In the survey conducted by Ali in 1987, on the other hand, 55% of all migrants were found to be females.

As regards the educational attainment of migrants, the ILO survey reported that 39.8% had no formal education; 9.9% had uncompleted primary education; 26.5% had completed primary; 12.7% had uncompleted secondary; 9.4% had completed secondary and 1.7% had higher university or technical education. Among the male migrants, 60% had some sort of formal education and 50% have primary or post primary education.

The percentage of educated migrants was found to be higher among those who had come from urban areas than those from rural origins. The educated proportion was consistently higher at all educational levels among females from

urban origins rather than rural ones. Comparing the level of education of the migrants to the national capital with the level of education for the population in the sending regions, it was found that the level of education for the interviewed migrants was far above the level of education for the populations from which they originated. This study confirms that the young and educated have the higher propensity to migrate, a finding which is consistent with those of many other studies of migration in Africa.

- **Occupation before migration**

According to the ILO survey, 354 (37.4%) of the 947 migrants interviewed were working before they migrated. 73.2% of these were working in agriculture, 8.2% in services, only 5% were working in the trade and transport sector, 2.3% were employed in the private sector, 6.2% were government employees, while the remaining 5.1% were either self employed or unpaid family workers. Among the self employed and unpaid family workers large numbers were in agriculture.

In 1987, Ali found that 31% of the in-migrants interviewed were farmers or tenants before moving to Khartoum. 11% were government officials, 9% were self employed, 9% were in trading and commercial activities, 6% were labourers, 4% were in the private sector while 6% were principally idle and unemployed before they migrated. This last figure reflects the fact that the unemployment rate is low among migrants before their move. The remaining 24% were in various other categories. Ali also stated that 75% of the migrants interviewed were working in jobs different from those at their places of origin.

3.6.3.3 Motives of and reasons for migration

The population of the Sudan may be described as highly mobile but most of the mobility is short distance. As reported in the survey conducted in Khartoum in 1974 by the ILO mission (ILO, 1976) there was not much rural to urban migration until 1955/56, after which it seemed to have picked up quickly. The population of the agriculturally poor and less urbanised provinces, mainly those in the north west, had been moving to the north east where the conditions are better. The economic motive is said to be mainly behind that movement. The push and pull forces were, and are, reinforcing each other in sending migrants from the rural areas to Khartoum. The mission listed many factors which have worked as push factors in the sending areas. Among these factors were population pressure, lack of job opportunities, lack of rain and consequent low agricultural productivity and low incomes. The survey also showed that, in about half of the villages in the Red Sea, Northern and Nile provinces, between 50% and 80% were willing to accept jobs elsewhere for long periods.

Among a total of 526 male migrants included in the survey, 65.8% came to seek employment, 16.5% for further education and 14.8% came to join relatives. About 44.6% of those who were in school before moving to the city were found to be looking for additional education, while 28.2% of them were seeking labour employment. Those who had been working before moving to the city showed that either they did not have adequate work on the family farms or else their earnings were too low compared with the expected income in Khartoum.

As for the females, 90% of a group of 374 migrants were found to come to the city to join relatives, mainly as wives to join husbands. The survey, at this

point, stated that these statistics show that family migration is more common than individual migration. This was attributed to the land policy of the Government in Khartoum which might have encouraged migrants to bring their families with them in order to satisfy the required conditions for obtaining cheap land.

The higher average annual earnings in Greater Khartoum, job availability, better education, cheap cost of migration because of existence of friends and relatives, etc, all these are listed to be the dominant pull factors. In addition to these factors, the much greater availability of amenities in the urban centres can also exercise some influence in attracting migrants.

From his 1987 survey, Ali found that 30.7% of the migrants interviewed attributed the reason for their migration to the low job opportunities in the rural areas and the desire for a job that could make them feel content and better off than their traditional job. 17.8% were motivated by the relatively higher job opportunities in the cities; 10.2% complained of lack of basic life necessities in their rural areas, while 14.6% stated their reason for migration as the availability of these services in the city. The low wage rate in the rural areas, joining relatives in the city, high expected incomes in the city, continuation of education and other reasons were also listed as pushing or pulling factors that have had their influence on the individual or family to migrate.

3.6.3.4 Earnings of migrants

The ILO survey identified a positive correlation between level of education and earnings from work. 60% of the employed migrants were found to have annual earnings of Ls 100 - Ls 300 and 80% of the newly arrived migrants were earning less than Ls 400. Only 6% were found to earn more than Ls 600 annually. Because of

the improved education experience and contact, the migrants with longer duration of stay in the city were found to have moved from low-paid jobs to high-paid ones, thus their earnings were higher than those of the newly arrived.

Ali concluded that 85% of the migrants believed they were obtaining real benefits from their migration. Their incomes increased to levels which allowed them to send financial support to their families in the area of origin. About 63% sent part of their incomes to their families. He also found that 42% of the total annual transfers were above Ls 1000, 34% less than Ls 500 and 23% between Ls 500 and Ls 1000.

3.6.3.5 Effect of migration on sending and receiving areas

With the increase in rural-urban migration in the Sudan, Khartoum, for example, has grown rapidly as a result of the large numbers of migrants who have the will to take any chance to work in the city. With this rapid in-flow of migrants and the limited chance of finding jobs, the unemployment problem is getting worse. Also, social services are not developed to accommodate the increasing numbers of migrants. Consequently, shanty towns, which are built by the migrants in the outskirts of Khartoum are becoming very common. No services are extended to these shanty towns because the government regards them as illegal.

Galal al Din (1979) attributes the increasing numbers of migrants in Khartoum who are unemployed to the fact that the capacity of the reproductive sector to recruit and employ labourers is very weak and investors concentrate on using labour saving technology. He states that \$7-8 million was invested in light industries in the period 1956-1960 but this investment succeeded in recruiting only 4093 labourers. In the period 1960-1965 investment amounted to \$24 million and 8,000 labourers

were employed as a result. Accordingly, migrants started to seek another source of employment and as a result, thus have resort to any type of employment as selling cigarettes, tea, or cloth in the streets, washing cars, polishing shoes, or any other job that is not of economic or social benefit to the nation. In 1973 the total number of migrants living in shanty towns on the outskirts of Khartoum was about 100,000; today they number more than one million.

Gala al Din (1979) showed that 69% of the migrants wanted to stay in Khartoum and have no desire to return to their place of origin. Ali's (1987) findings are somewhat different. 49.7% of the migrants interviewed showed a desire to return home to their rural areas, but they wanted the situation in the rural area to be improved. About 36% showed no wish to return, while 14% stated that they were trying to migrate abroad.

The sending areas are also suffering as a result of the out migration. Ali (1987) found that most of the migrants interviewed complained that their families are negatively affected by their migration, particularly in the field of child education. Also, the family labour force in the sending areas is suffering by losing one or more of its members. Socially, 75% of the migrants claim to be experiencing difficulty in adjusting to life in the city.

Chapter IV

Inter-Provincial Migration in the Sudan

During the last seventy years, changes in political, social and economic conditions have taken place in the Sudan, which have led to a considerable increase in population mobility. Prior to independence, the colonial power in the Sudan had improved the transportation system by constructing railways that connected most parts of the country, and as a result the isolated, closed subsistence societies with their limited mobility started to interact with and move to other places in the country. Since the 1920s, the developments which have taken place in the Sudan have led to the creation of a modern economic sector, small market towns, and areas of commercial agriculture that offer important advantages of employment, higher incomes and security, improved housing and social provision. The direct consequences of the spread of trading networks and the increased commercialisation of agricultural production oriented towards cash crops for exports can be seen in the areas of the Gezira scheme and the rain fed agricultural schemes. Even the people in areas which are far from these schemes have been affected by these developments in the sense that they have found it beneficial to move to these favoured areas to earn cash income. These population movements have become of concern to many geographers, economists, sociologists, and policy makers inside the country and outside as well.

In this chapter we examine the lifetime movements of the Sudanese population at the macro level of the 18 provinces for which place-of-birth data are found in

Table 4.1: Inter-Provincial Migration Matrix in the Sudan (1983)

Province of Place of Birth	Province of Usual Residence																	
	1 North- ern	2 Nile	3 Red Sea	4 Kassala	5 Khartoum	6 Gezira	7 Blue Nile	8 White Nile	9 South Krdofan	10 North Kordofan	11 North Darfur	12 South Darfur	13 Bahr al Ghazal	14 Lakes	15 Upper Nile	16 Jongley	17 East Equatoria	18 West Equatoria
(1) Northern		15834	25313	54949	100469	18417	3734	6026	527	2409	467	1106	238	24	724	24	264	21
(2) Nile	2003		11527	31420	62589	10122	3085	2936	1963	1903	175	1159	209	15	281	8	288	528
(3) Red Sea	663	3261		7112	6353	853	473	300	833	175	41	181	179	2	99	2	54	301
(4) Kassala	731	2344	7296		18726	6619	10175	1131	2796	752	525	1908	113	23	1066	8	121	14
(5) Khartoum	2397	4829	5657	5163		13960	4140	4419	5322	3448	1818	3302	695	1216	1711	166	1601	146
(6) Gezira	624	2081	2553	10331	68013		19523	7735	4584	2782	1221	2326	993	105	3687	20	369	442
(7) Blue Nile	152	535	1191	7400	23402	15152		4552	1031	1220	332	1182	335	330	4386	14	183	359
(8) White Nile	200	696	724	1594	38216	36503	4992		1867	2067	318	1206	716	5128	29152	38	446	773
(9) South Kordofan	1007	3322	7400	10341	84340	11695	8172	7841		14872	1054	2584	1323	453	5679	43	438	120
(10) North Kordofan	4409	1074	2816	6867	66095	15394	6534	10275	14207		1959	11818	1235	1737	6294	12	420	93
(11) North Darfur	299	476	705	188851	32642	30557	8614	4824	2388	5452		78565	983	79	443	67	224	23
(12) South Darfur	97	766	1012	15693	32761	17854	21408	7715	8677	3162	7844		1801	37	5066	2	434	31
(13) Bahr al Ghazal	91	270	480	492	11475	816	610	658	1873	2761	665	2751		2479	1098	89	3236	1211
(14) Lakes	14	49	190	204	3628	169	176	222	130	223	156	333	7469		415	632	1687	941
(15) Upper Nile	76	369	285	428	10431	1652	1114	2702	1268	372	84	343	361	1531		1297	1969	994
(16) Jongley	6	94	77	189	2044	366	498	475	44	54	14	127	164	9943	6791		3826	138
(17) East Equatoria	133	324	424	586	8016	738	472	732	445	356	171	428	1367	7287	1439	1172		5817
(18) West Equatoria	415	181	84	199	2208	80	102	284	186	191	18	58	2350	1879	900	135	9274	

Source: Derived from Table 8 in the 1983 Census National Report

the national report of the *Population and Housing Census* conducted in 1983. Table 8 of that report has been used to produce Table 4.1 and Tables A - I in appendix A. Tables A - F in that appendix show the in- and out-migration flows and rates for both males and females each divided into three broad age groups 0-14, 15-44 and 45 +.

The findings of this chapter throw light on the advantage to be gained from comprehensive studies of inter-regional migration in the Sudan, and the problems that may be resolved in the process. Most of the analysis in the chapter is devoted to a consideration of the patterns created by migration flows: their volume, length and direction. These patterns are indicative of the migration process and also of its impacts. We examine the overall levels of regional migration and classify provinces in terms of gains and losses of population. Also, the spatial structure of population movement is considered and a number of migration flows are singled out for further examination, and their destination and origin impacts would be calculated. Also, the analysis looks into the selective nature of the lifetime movements.

4.1 General Levels of Movement Between Provinces

The detailed figures in Table 4.1 derived from Table 8 in the *1983 Population and Housing Census* national report do not coincide with those figures given in chapter two which describe the total population of the whole country, and of each of the 18 provinces. In addition, the net migration balances for all provinces do not sum up to zero. These variations and discrepancies may be attributed to sampling and other errors committed during the various stages of the census operation. The data⁴ in Table 4.1 actually represent some 90% of the total population

⁴ The figures of the empty diagonal are shown in Table 4.2 column II.

recorded in the census. It will be assumed that these discrepancies are proportionally distributed among the 18 provinces, an assumption which is unlikely to have a serious effect on the results of the analysis. Table 4.1 is a standard matrix of migration flows between the 18 provinces of the country, indicating movements between place of birth and place of usual residence, and it excludes those who were classified as 'foreigners' and 'not stated'. The 18 provinces are numbered and written in name on the vertical column to represent place of birth. Provinces representing place of usual residence are written on the horizontal first row. All charts that include provinces' names are labelled by their corresponding numbers rather than by their names, starting from the Northern province, number 1, and ending by West Equatoria, number 18 (see Figure 4.8 (the base map) at the end of this chapter).

4.1.1 In-migration rates

Table 4.2, derived from Table 4.1, shows net migration balances for the 18 provinces and records 1,581,522 persons, 8.6% of the total population, living outside their province of birth; in other words, 91.4% live in the province where they were born. Flows in both directions occurred between every pair of provinces but there were major contrasts in the volume and direction. At one extreme, the province of Jongley in the south of the country recorded in-migration to the equivalent of only 0.5% of its resident population whereas, at the other extreme, the figure for Khartoum was 36.6%. In this situation, it is helpful to identify two groups of provinces; those above and those below the average national in-migration rate which was 98.7 per 1000 residents.

Column VII in Table 4.2 shows the number of in-migrants per 1000 resident

Table 4.2: Net-Migration Balance by Province

I	II	III	IV	V	VI	VII	VIII	IX
Province of Place of Birth	People Born & Live in	In-* Migrants	Total Popul- ation	Out- Migrants	(III)- (V) Net	(III)/ (IV) × 1000	(V)/[(II) + (V)] × 1000	(VI)/ (IV) × 1000
Northern.	556206	14715	570921	230557	-215842	25.8	293.0	-378.1
Nile ..	558179	37841	596020	130211	-92370	63.5	189.2	-155.0
Red Sea	225757	82451	308208	20882	61569	267.5	84.7	199.8
Kassala..	1022537	268784	1291321	54348	214436	208.1	50.5	166.1
Khartoum.	1041859	600409	1642268	59990	540419	365.6	54.4	329.1
Gezira	1784641	213305	1997946	127389	85916	106.8	66.6	43.0
Blue Nile	857456	101443	958899	61774	39669	105.8	67.2	41.4
White Nile	715720	78275	793995	124626	-46351	98.6	148.3	-58.4
S. Kordofan	928323	62014	990337	160684	-98670	62.6	147.6	-99.6
N. Kordofan	1228967	42618	1271585	151239	-108621	33.5	109.6	-85.4
N. Darfur	1160174	22915	1183089	189192	-166277	19.4	140.2	-140.5
S. Darfur	1723216	121619	1844835	124360	-2741	65.9	67.3	-1.5
B. Ghazal	1436765	21040	1457805	31055	-10015	14.4	21.2	-6.9
Lakes	730019	32729	762748	16638	16091	42.9	22.3	21.1
Upper Nile	680027	74956	754983	25276	49680	99.3	35.8	65.8
Jongley	746458	3863	750321	24850	-20987	5.1	32.2	-28.0
E. Equatoria	978877	37078	1015955	29907	7171	36.5	29.6	7.1
W. Equatoria	335219	13487	348706	18544	-5057	38.7	52.4	-14.5
TOTAL	16710400	1829542	18539942	1581522	248020	98.7	86.5	13.4

* This column includes that proportion of population classified as 'not stated' and 'foreigners' which amounts to 248,020 (13.6% of all in-migrants). If this proportion is excluded from the total in-migrants the number would decline to 1,581,522.

Source: Derived from Table 4.1

population in each province. Six of the 18 provinces have experienced in-migration

rates above the national average ranging between 99.3 in the case of Upper Nile and 365.6 in the case of Khartoum. Clearly, the highest three in-migration rates were recorded in Khartoum, Red Sea and Kassala provinces. In Khartoum, some 366 in every 1000 resident population were in-migrants while the equivalent figures for the Red Sea and Kassala provinces were 268 and 208 respectively. Together, the three provinces received 60.2% of all lifetime migrants between the 18 provinces. At the other extreme, no fewer than 12 provinces had fewer than 98.7 in-migrants per 1000 residents the last three provinces of which were Jongley 5.1, Bahr al Ghazal 14.4 and North Darfur 19.4 (See Figure 4.1).

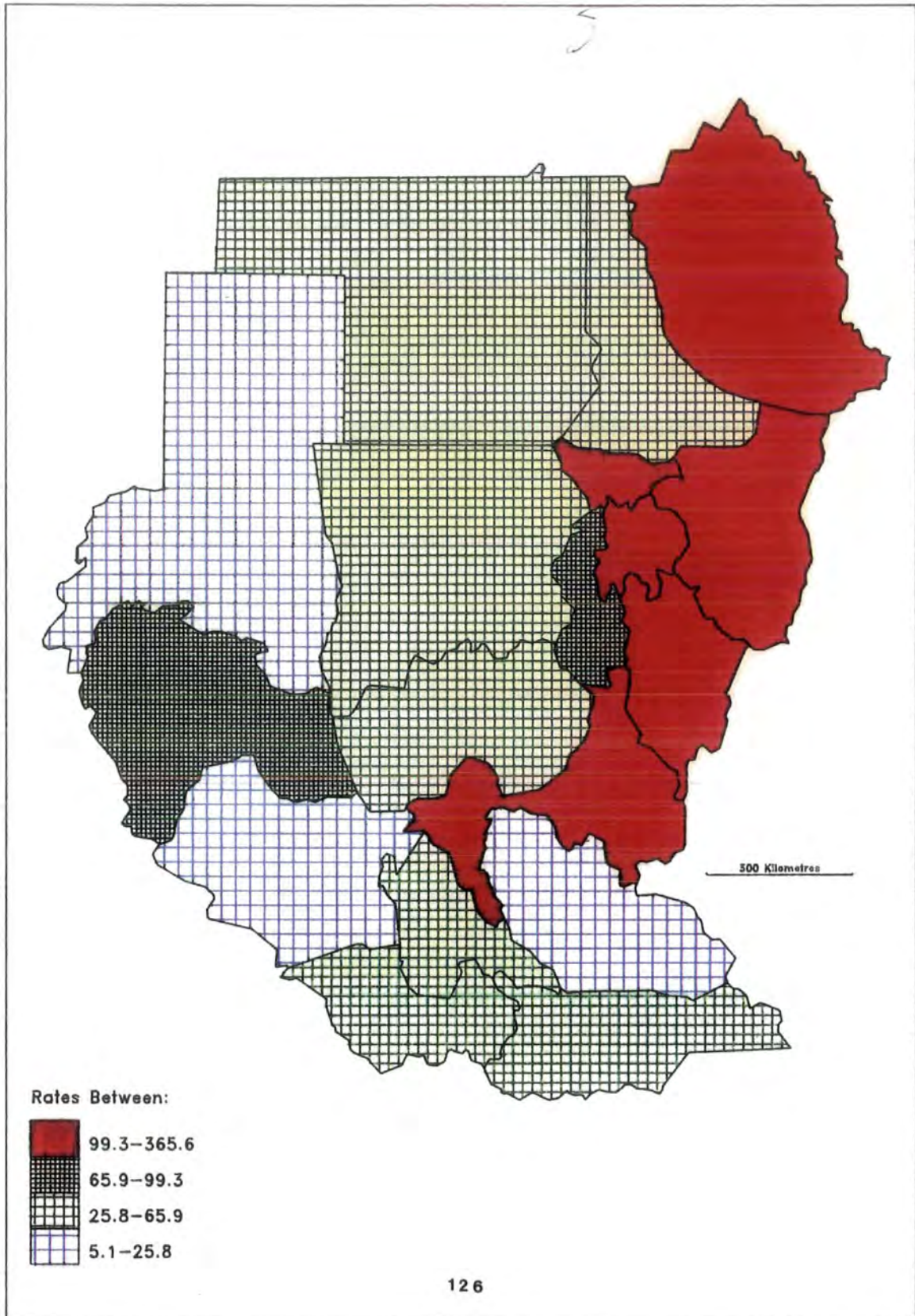
In absolute terms, Khartoum was well in the lead with a total of 600,409 in-migrants, followed by Kassala with 268,784, Gezira with 213,305, South Darfur with 121,619 and Blue Nile with 101,443. The three provinces in the tail include Bahr al Ghazal, Jongley, and West Equatoria which are all in the south (Figure 4.2).

Out-migration rates for each province, expressed per 1000 of the total population born in the province, are given in column VIII of Table 4.2. Provinces are divided into two categories of above and below national average out-migration rate which was some 87 out-migrants in every 1000 population born in the same province.

4.1.2 Out-migration rates

Six provinces had out-migration rates above the national average. The highest out-migration rate was recorded in the Northern province; of every 1000 persons born in that province, 293 were living outside it in 1983. In second position was the Nile province, with an out-migration rate of 189, followed by White Nile (148),

Figure 4.1: In-Migration Rates in the 18 Provinces (1983)



South Kordofan (148), North Darfur (140) and North Kordofan (110) (see Figure 4.3).

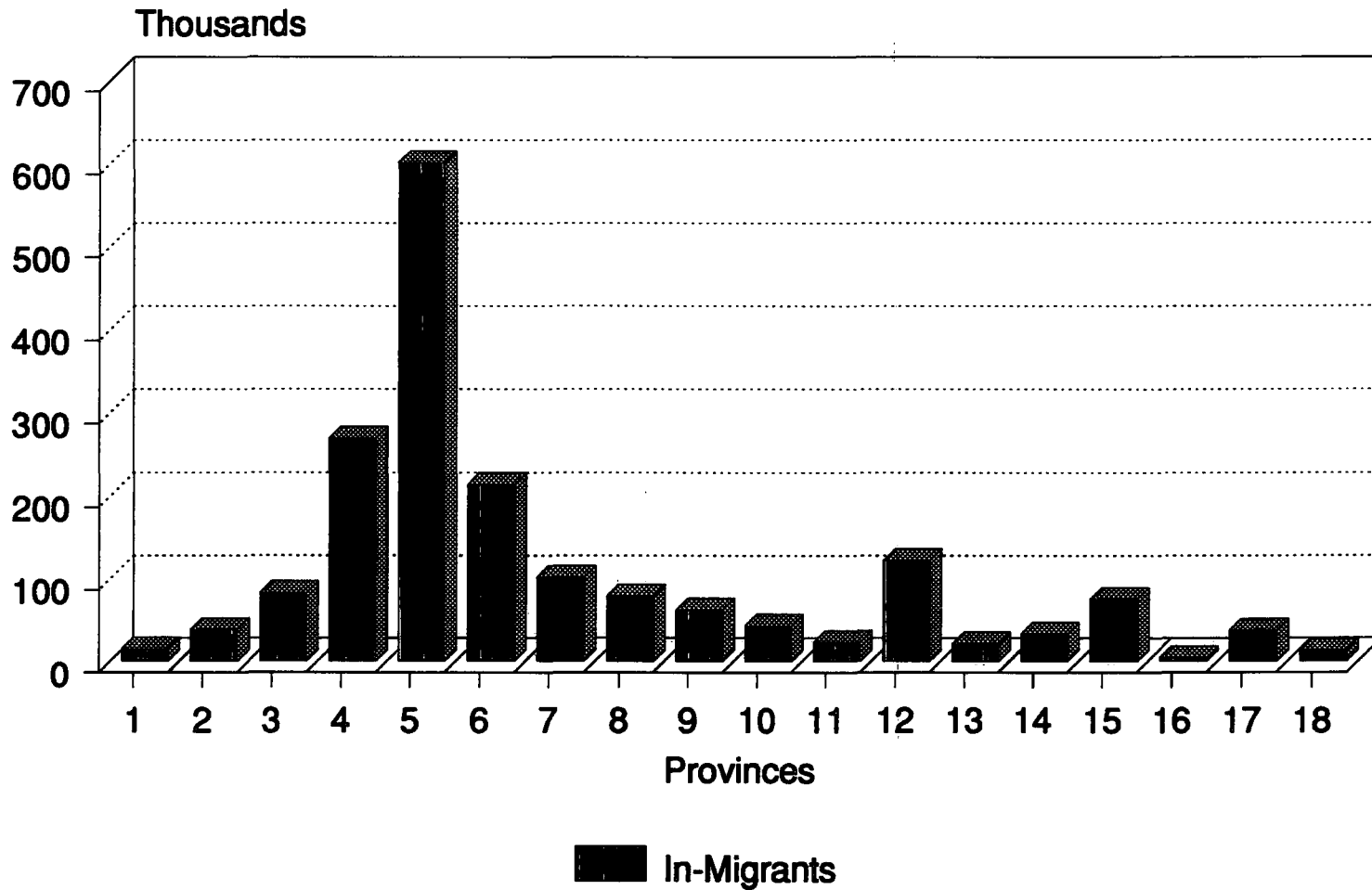
The remaining twelve provinces recorded out-migration rates below the national average of 87 per 1000 born in the province. Within this category, rates less than 25% below the average were recorded in four provinces: Red Sea (85), South Darfur (67), Blue Nile (67) and Gezira (67). Rates between 25% and 50% below the average occurred in Khartoum (54), Western Equatoria (52) and Kas-sala (51). The lowest rates of all were recorded in Upper Nile (36), Jongley (32), East Equatoria (30), Lakes (22) and Bahr al Ghazal (21). The absolute numbers of out-migrants recorded in each province are depicted in Figure 4.4.

4.1.3 Net-migration balance

The net-migration balance for each province is obtained by deducting the out-migrant totals from in-migrant totals. Ten provinces emerge as net losers, and eight as net gainers. The top five net losing provinces have all experienced net losses greater than 90,000. Northern province experienced a net loss of 215,842 population in the migration process, followed by North Darfur 166,277, North Kordofan 108,621, South Kordofan 98,670, and Nile 92,370. The remaining five losers have experienced net losses ranging between 2,741 and 50,000. In this group we find White Nile province with a net loss of 46,351, Jongley 20,987, Bahr al Ghazal 10,015, West Equatoria 5,057, and South Darfur 2,741 (see Figure 4.5).

On the other side we find the eight net-gaining provinces the least of which is East Equatoria with a net gain of 7,171. Khartoum has experienced a net gain of more than half a million (540,419) indicating a net-migration rate of 329 per 1000 resident population. As a result of this strong inward movement, we find that

Figure 4.2: Numbers of In-Migrants
by Province: 1983



Source: Derived from Table 4.2

for every 1000 population born in Khartoum there were 519 in-migrants. In the second position comes Kassala province with a total gain of 214,436 providing a net-migration rate of 166 per 1000 resident population and 210 in-migrants per 1000 population born in the province. In absolute terms, the provinces of Gezira, Red Sea, Upper Nile, and Blue Nile occupy the succeeding positions after Khartoum and Kassala with net gains amounting to 85,916, 61,569, 49,680, and 39,669 population respectively. Lakes province has gained only 16,091 population. In proportional or relative terms, rates of net-migration in each province are calculated with the total population enumerated in 1983 for each province as the denominator, and the net-migration balance as the numerator multiplied by 1,000 (see Figure 4.6, and column IX in Table 4.2)

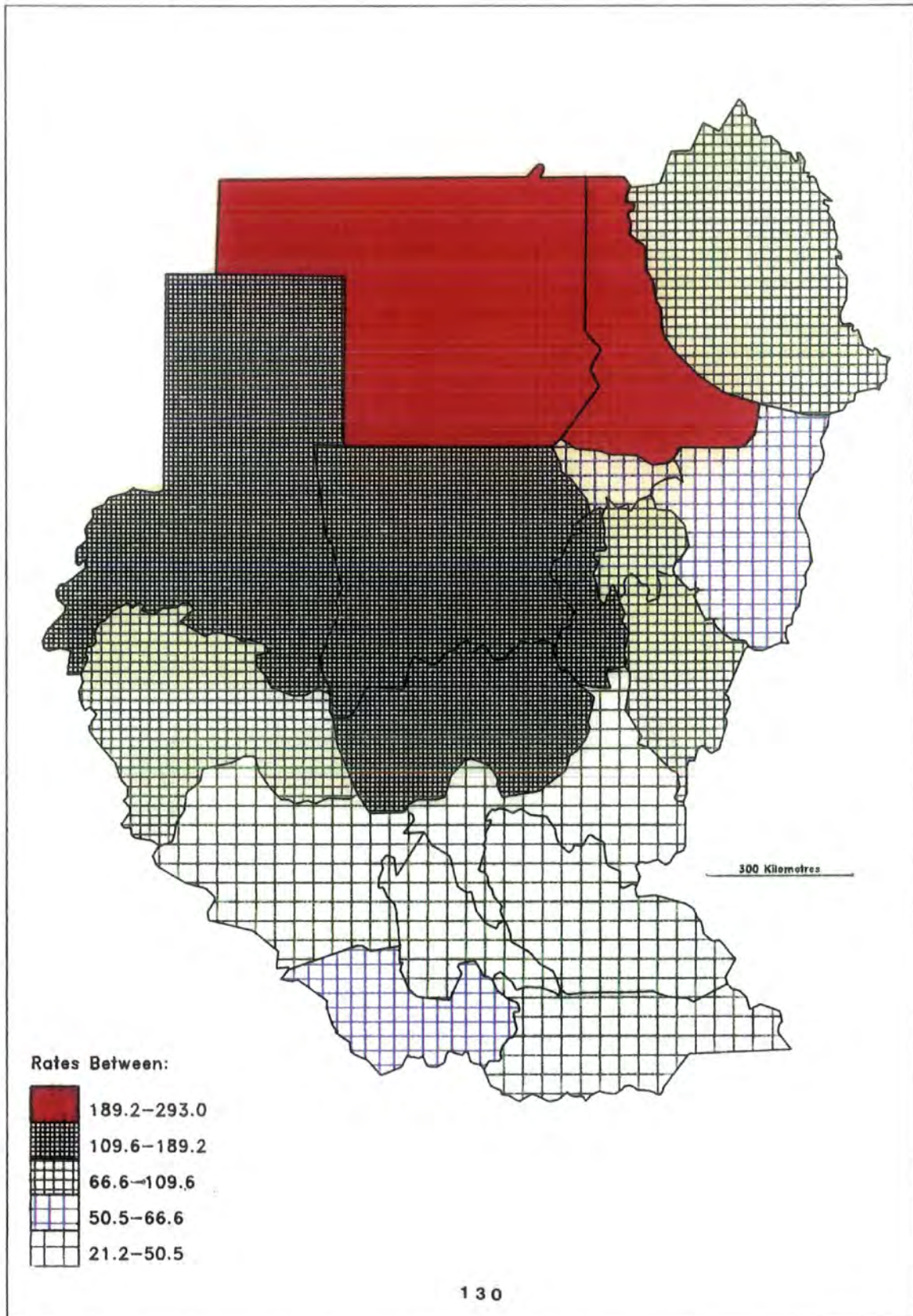
The relationship between the levels of out-migration rates and the rates of net balances shows a substantial negative relationship ($R = -0.731$), while a higher strength of association between the rates of in-migration and rates of net-migration balances is observed ($R = 0.789$). On the other hand, there is a moderate association between the total population in each province and the numbers of in-migrants ($R = 0.524$) but at the same time virtually no relationship is detected between total population and numbers of out-migrants ($R = 0.190$).

4.2 Spatial Structure of Population Movement

Table 4.1 is a matrix showing all migration flows between the provinces of birth and provinces of usual residence in 1983. Any analysis of this matrix is affected by the following limitations:

- a. The flows recorded are not necessarily direct flows from province of birth to province of usual residence; any intermediate movements which may have

Figure 4.3: Out-Migration Rates by Province (1983)



occurred are not recorded.

- b. The matrix, being based on place-of-birth data, records only lifetime migration; there is no evidence as to when the moves occurred. The matrix thus presents only the cumulative effects of multiple movements.
- c. The data refer to inter-provincial movements only and thus show only a fraction of total mobility; the much larger number of moves likely to have occurred within each province are not recorded.

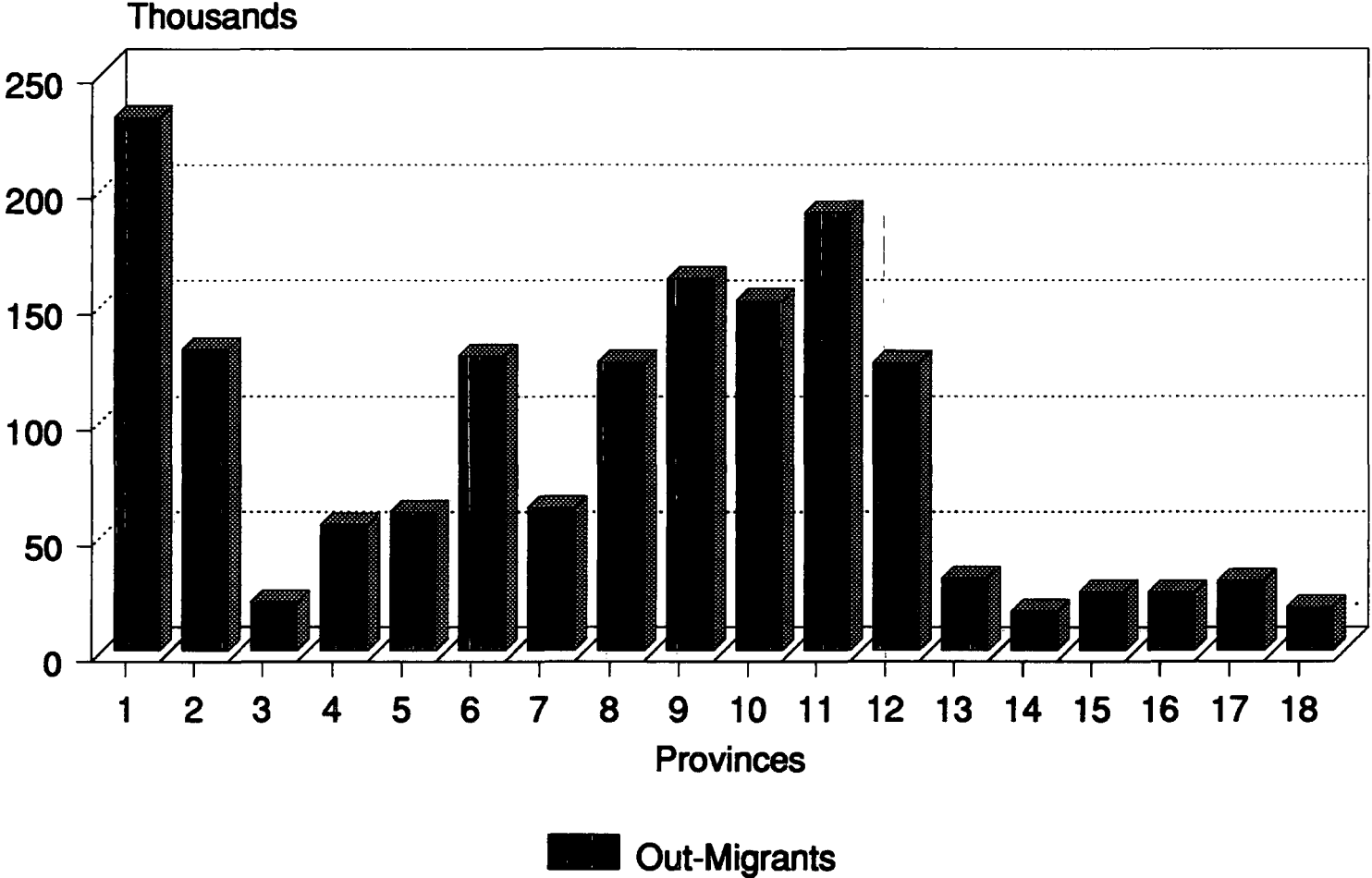
Despite these limitations some striking relationships between the 18 provinces could be observed, including massive differences in the size of the various flows.

A matrix based on 18 provinces produces 306 (i.e 18 X 17) flows. As already indicated, inter-provincial movements involved 1,581,522 individuals (8.6% of the total population); thus the average size of the 306 flows was 5,168 persons. There is a wide range of values on either side of this average, from a minimum of only 2 (Red Sea to Lakes) to a maximum of 100,469 (Northern to Khartoum), (see Table G in appendix A). On the basis of size, four main groups of flows might be distinguished.

Group A:

This group comprises the seven largest flows, each of them more than ten times the national average, ranging in size from 100,469 (Northern province to Khartoum) to 54,949 (Northern province to Kassala). The 515,020 individuals involved represent one-third (32.7%) of all inter-provincial moves. The average flow within this group was 73,574. It is clear that this group is dominated by the Northern province as the main sending province and Khartoum as the main

Figure 4.4: Numbers of Out-Migrants by Province: 1983



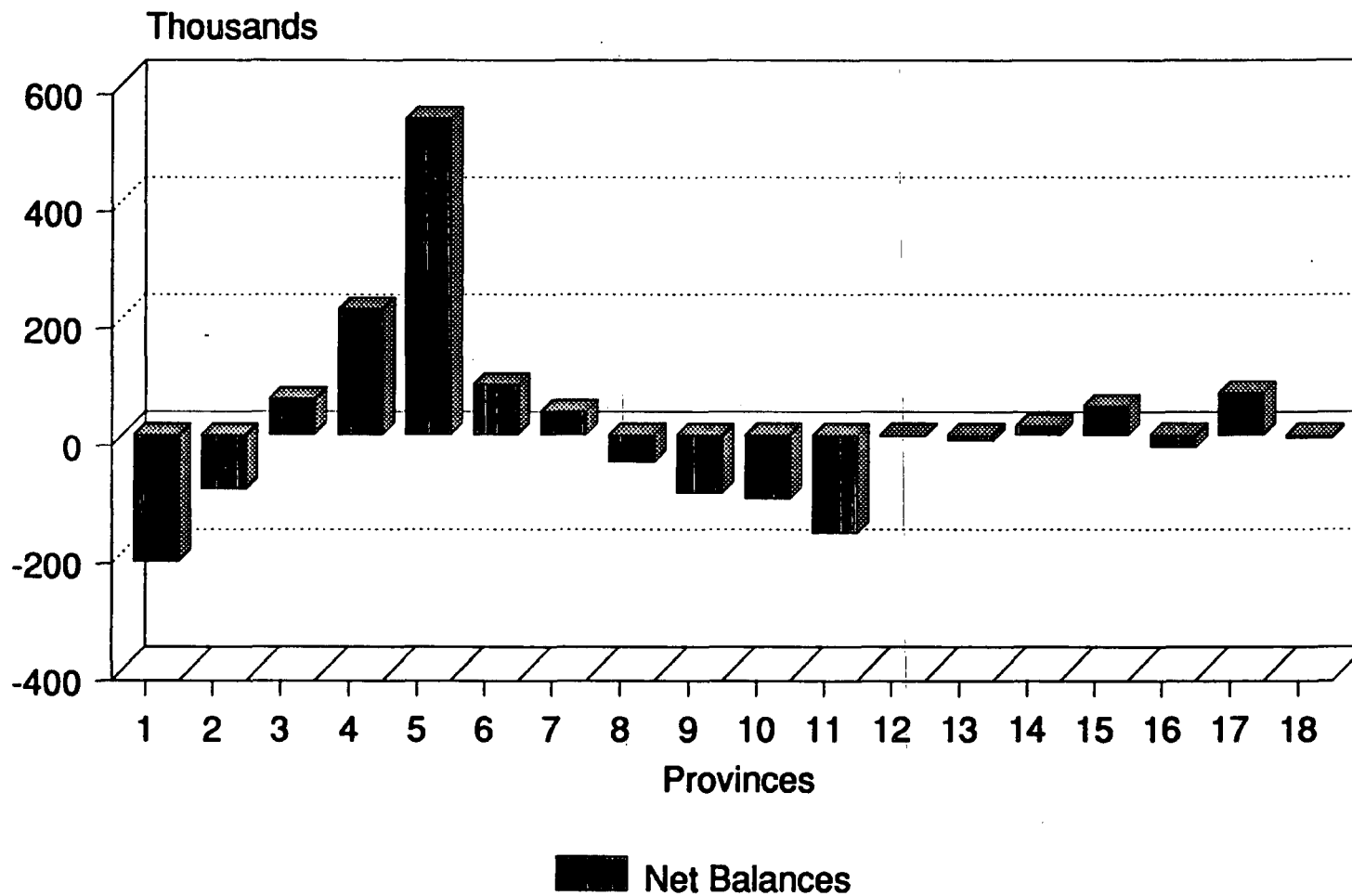
Source: Derived from Table 4.2

province of destination. Of all the moves involved in this group, 30.1% originated in Northern province, 16.4% in South Kordofan, 15.3% in North Darfur, 13.2% in Gezira, 12.8% in North Kordofan and 12.2% in Nile. Khartoum province alone received 381,506 migrants; some 74.1% of all those involved in the seven largest flows, including 100,469 from Northern province (26.3% of the moves to Khartoum), 84,340 (22.1%) from South Kordofan, 68,013 (17.8%) from Gezira, 66,095 (17.3%) from North Kordofan and 62,589 (16.4%) from Nile province. The remaining two flows in this group were from North Darfur to South Darfur (78,565, the third largest of all inter-provincial flows) and from the Northern province to Kassala (54,949) (see Figure 4.7)

Group B:

This group includes 32 flows ranging in size from 10,122 to 38,216 and involving 608,058 moves, representing rather more than one-third (38.4%) of all inter-provincial moves. The average size of flows in this group was 19,002. Eight of the 32 flows were to Gezira province, 7 to Khartoum and 5 to Kassala. As in Group A, Khartoum was the main receiving province with a total inflow of 167,653, some 27.6% of the migrants in this group, followed by Gezira (26.22%) and Kassala (14.2%). The major sender in this group was the Northern province with four out-migration flows totalling 114,524 (18.8% of all moves in this group). In second position came South Darfur with four out-flows totalling 87,716 (14.4%), followed by Nile province 53,069 (8.7%) North Darfur 51,493 (8.5%), and North Kordofan 51,694 (8.5%). The remaining provinces lie in the tail ranks.

Figure 4.5: Net Migration Balances
by Province: 1983



Source: Derived from Table 4.2

Group C:

There were 115 flows in this group involving 1000 - 10,000 (actually 1007 - 9943) people each and totalling 411,452; some 26% of all inter-provincial moves. The average flow in this category was well below the national average at 3,578. 23 flows in this group involved 6000 - 10,000 people, 18 were between 4000 and 6000, leaving 91 flows ranging between 1000 and 4000.

Within this group, Upper Nile province received the largest number of flows (11) totalling 41,660 individuals, and representing 10.1% of all moves in this category. This province is followed by White Nile and South Kordofan (10 flows each) with a respective share of 12.1% and 7.7% of all moves involved in this group. North Kordofan received 9 flows (6.7%), South Darfur 9 flows (4.3%), and 8 flows to each province of Blue Nile, Lakes and Red Sea representing 9.8%, 7.6% and 6.8% of all moves in the category respectively. There were 6 flows each to East Equatoria, Nile and Bahr al Ghazal, 5 to Khartoum, North Darfur and Kassala, 3 each to Gezira and Jongley, and one to West Equatoria.

On the other hand, 13 of the 115 flows originated in Khartoum province, 9 each from Upper Nile, South Darfur, Kassala, Bahr al Ghazal and Blue Nile provinces. The remaining nine provinces provided between three and six flows each.

Group D:

Inter-provincial migration flows involving less than 1000 people each numbered 152 and ranged in size from two to 994. 46,992 people were involved, barely 3% of all inter-provincial migrants, and flow size averaged only 309. 18 flows involved more than 700 people, 13 between 500 and 700 and no fewer than 121 represented less than 500 migrants each.

Figure 4.6: Net-Migration Rates in the 18 Provinces (1983)

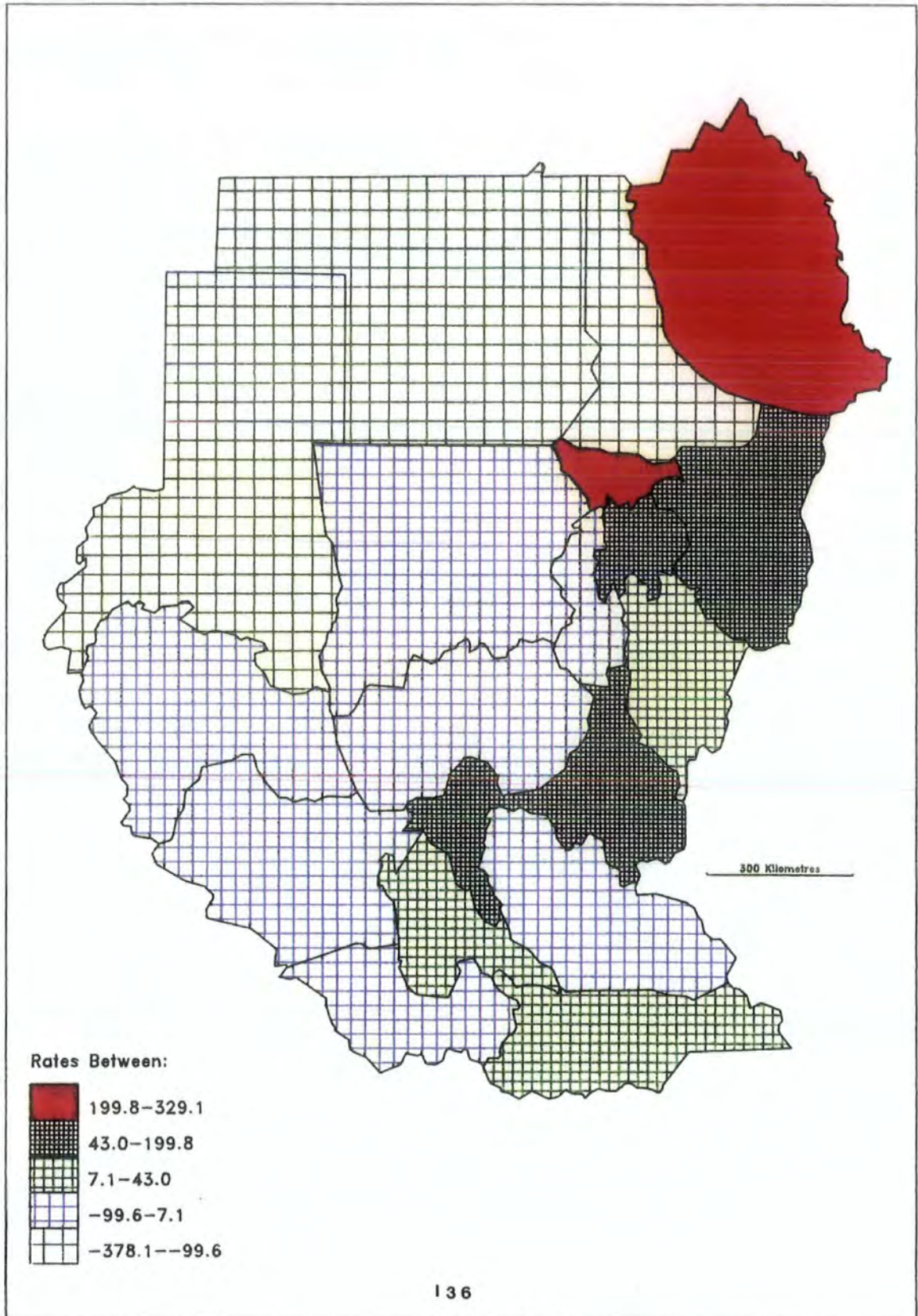


Figure 4.7 maps all migration flows of more than 15,000 (approximately 61.5% of total inter-provincial movement); smaller flows have had to be omitted for the sake of clarity. 26 inter-provincial flows are shown. 20 of these are towards the three provinces of Khartoum (10), Gezira (6), and Kassala (4). Of the remaining six, two are towards the Blue Nile province, and one each to Red Sea, South Darfur, and Upper Nile. As has already been pointed out, five of the seven largest flows (54,949 to 100,469) are towards Khartoum, and one each to Kassala, and South Darfur. The Northern province stands out as a major area of out-migration with large flows to Khartoum and Kassala, and smaller ones to the Red Sea and Nile provinces.

With the exception of the flow from White Nile to the adjacent Upper Nile province, there are no movements above the 15,000 threshold affecting the six provinces of the south. Large-scale inter-provincial migration would appear to be confined almost entirely to the provinces of the Sudan North.

In the discussion which follows, we intend to look in more detail at a number of provinces where the impact of migration movements has been particularly strong. ~~Those selected are the five top gainers and the five top losers in terms of net-migration rates (see Figure 4.6).~~⁵

For these ten, the intention is to examine the direction and volume of their in- and out-migration flows and, *inter alia*, to discuss the level of correlation between these flows and the distances which separate provinces. The appropriate correlation

⁵ By net-migration rates we mean the net gain or loss of each province divided by its total resident population and multiplied by thousand

**Figure 4.7: Major Migration flows Between Provinces:
Flows Greater than (15,000)**

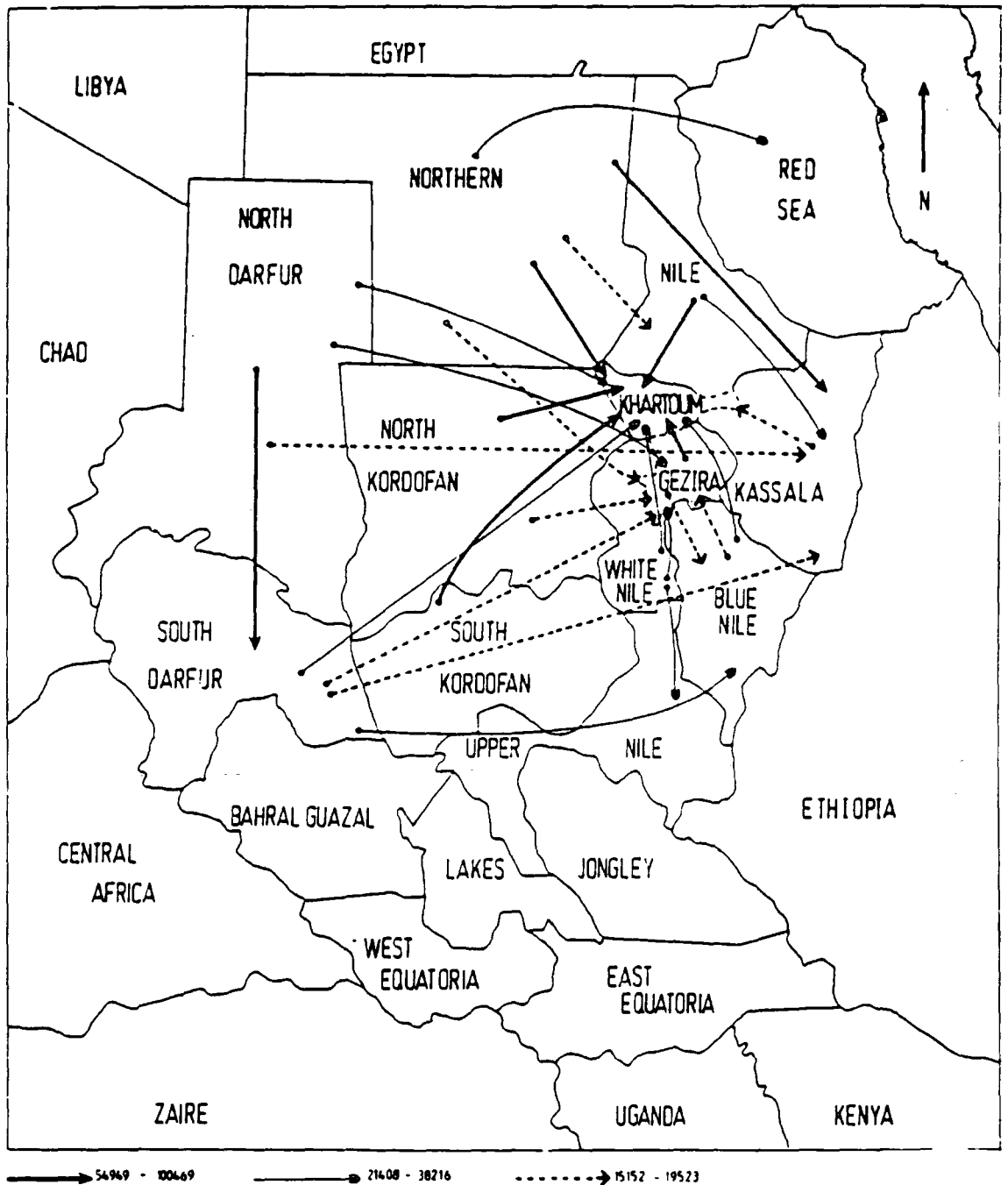


Table 4.3: Relationship between Distance and Size of In- and Out-Migration Flows

Provinces	<i>Correlation Coefficient R of Distance and</i>	
	In-migration	Out-migration
Khartoum	-0.646	-0.735
Kassala	-0.072	-0.634
Gezira	-0.380	-0.561
Red Sea	-0.577	-0.614
Upper Nile	-0.289	-0.135
Northern	-0.533	-0.542
N. Darfur	-0.720	-0.510
N. Kordofan	-0.639	-0.379
S. Kordofan	-0.317	-0.350
Nile	-0.533	-0.561

Based on number of migrants

The critical R value at 5% level of significance for 17 paired values is 0.4821.

coefficients are given in Table 4.3.

4.3 Net Gaining Provinces: The Top Five

4.3.1 Khartoum

Figures 4.2, 4.4 and 4.5 reflect the numbers of in-migrants, numbers of out-migrants and net migration balances in the 18 provinces respectively. As Figures 4.1 and 4.5 clearly demonstrate, Khartoum stands head and shoulders above all other provinces in terms of both net-migration rates and balances. According to the 1983 census, lifetime in-migration totalled 605,409 and there was a net migra-

tion gain of 540,419, providing a net-migration rate of some 329 per 1000 residents; Khartoum was the destination of more than one-third of all inter-provincial migrants. In-migration occurred from all other 17 provinces giving an average flow of 35,318. By far the largest movement was that from the Northern province which contributed 100,469, 16.6% of all in-migrants. Another 13.9% came from South Kordofan and there were large contingents from the neighbouring provinces of Gezira (11.2%), North Kordofan (10.9%), and Nile (10.3%). Only five of the 17 provinces were the source of flows less than 10,000; with the exception of the Red Sea province, these were all in the south: Lakes, Jongley, West Equatoria and East Equatoria.

At the same time, Khartoum province has provided counter streams of migrants to all other 17 provinces totalling 59,990, an average flow of 3,529 to each. The largest of these (13,960) to the neighbouring province of Gezira represents 23% of all out-migration from Khartoum.

A negative correlation ($R = -0.646$) is detected between the number of in-migrants and the distance⁶ between Khartoum and other provinces, suggesting at first sight that distance has some effect on the propensity to move to the capital province and that economic, social and political factors count for the remaining effect.

The main cause of this huge migration to Khartoum is that it is the province of the national capital. As a result, and as is the case with most national capitals of the less developed countries, differentials in job opportunities, social services, wages, production resources, health and educational facilities are all in favour of the

⁶ Distances mentioned in this thesis are all measured by straight line on the map between the capital cities of all provinces. See Table J in appendix A

capital province compared to others. Consequently, a complex of factors provides motives for thousands to migrate to the province. The real motives and causes will be discussed in detail later in chapter five.

4.3.2 Red Sea

Red Sea province received a total of 82,451 migrants, an average flow of 4850 from each of the other 17 provinces, and experienced a net gain of 61,569. The latter figure represents a net migration rate of 200, second only to that of Khartoum.

The Northern and adjacent Nile provinces are the two largest suppliers of migrants to Red Sea, contributing some 48.5% of the total migrants to the province. Another seven flows entered the province, ranging between 1,012 and 7,400 from South Kordofan, Kassala, Khartoum, North Kordofan, Gezira, Blue Nile, and South Darfur. All together, these seven provinces contributed 36.7% of all in-migrants to Red Sea. The last 14.8% is the collective share of the remaining provinces.

The Red Sea province can be classified as one of the provinces that experienced least out-migration. It is ranked sixteenth, with a total of 20,882 out-migrants. The average size of flows of out-migrants was 1,228. The adjacent provinces of Kassala and Nile, plus Khartoum together received 80.1% of all out-migrants from the Red Sea province, while Gezira, South Kordofan, and Northern provinces absorbed 11.2% of the province's migrants. Only 8.7% was absorbed by the remaining eleven provinces. The net-migration balance was a gain of 55,129, a figure that puts the Red Sea in the fourth position in terms of net gains in the process of migration taking place between all provinces.

As in the case of Khartoum province, there is a negative correlation between distance and volume of flow. This is somewhat stronger ($R = -0.614$) in the case of out-migration from the Red Sea to other provinces than in that of in-migration ($R = -0.577$).

4.3.3 Kassala

Kassala province ranks third after Khartoum and Red Sea as a destination for migrants with a total inflow of 268,784, an average flow of 15,810, a net gain of 214,436 and a net rate of 166 per 1000 residents. About 52% of the in-migrants came from six provinces Northern, Nile, North Darfur, South Darfur, South Kordofan, and Gezira, and another 47.2% from the next five provinces of Blue Nile, Red Sea, North Kordofan, Khartoum and White Nile with flows ranging between 1,594 and 7,400. At the other extreme, the six southern provinces contributed only 2,098, less than 1% of all migrants to Kassala.

One can attribute this large in-migration to wide spread occurrence of mechanized rain-fed agricultural sub-sector in this province. As mentioned in chapter two, despite being described as 'mechanized', this sub-sector absorbs a large number of workers to carry out the various agricultural and related jobs in these projects. Most of the large numbers of lifetime migrants from the Northern province could be explained by the historical fact that entire villages and local towns have been evacuated and resettled in 'New Halfa' in Kassala province; this movement involved about 50,000 Nubians in late 1950s and early 1960s, (Heinritz, 1985). This was due to the construction of Aswan dam on the river Nile in Egypt, a thing which caused large areas in northern Sudan to be flooded. As a compromise, the Egyptian government shouldered part of the burden of resettling the

affected northern Sudanese population in the agricultural scheme of New Halfa. Migrants from North and South Darfur, and South Kordofan usually work in the mechanized schemes as labourers in the different agricultural operations. Those from Gezira are associated with the agricultural trading activities in the different towns and villages of Kassala province.

Kassala ranks eleventh (Figure 4.4) in terms of numbers of out-migrants with a total of 54,348 and an average flow size of 3,197. About one-third (34%) went to Khartoum and 18.7% to Blue Nile province, both adjacent to Kassala. Most of the remainder (42.6%) went to seven provinces, leaving only 4.7% to be distributed among the remaining eight provinces, with flows of only a few hundred to those in the south.

Migrants to Kassala seem to be not affected by the distance factor with a correlation coefficient of only $R = -0.072$. On the other hand distance has a moderate association with the numbers of outmigrants from the province to other provinces ($R = -0.634$).

4.3.4 Upper Nile

This province is the first among the six southern provinces in terms of sending, and receiving large numbers of migrants to and from all of the twelve northern provinces and is ranked fourth in terms of net-migration rates. A total of 74,956 in-migrants entered in flows averaging 4,409. The White Nile province alone supplied Upper Nile with 38.8% of total in-migrants. Jongley, North and South Kordofan, and South Darfur sent four flows greater than 5,000 each to the Upper Nile province. Together, the four provinces shared 31.7% of the migrants recorded in the province. The subsequent seven flows to the Upper Nile ranged between 1,066

and 4,443 and represent 23.7% of all migrants to the province. The last 5.8% was sent to Upper Nile by West Equatoria, Northern, Lakes, Nile, and Red Sea provinces in flows ranging between 99 and 900 migrants. Altogether these in- and out-flows resulted in a net-migration rate of about 66 per 1000 residents.

It is obvious that most of the migrants to this province were from the northern and western provinces, and not from the southern ones. Most of the White Nile migrants to the Upper Nile go there for trading purposes and that was made easy by the cheap river route between Kosti town in the former, and Malakal town in the latter, as well as the railways. The western provinces contain nomadic tribes which are animal raisers who cross the borders between these provinces (South and North Kordofan) and Upper Nile to the rich pastures; one can regard this factor as the main explanation for this recorded migration in the Upper Nile province.

The largest flow of migrants originating from the Upper Nile province entered Khartoum, representing 41.4% of the total 25,276 out-migrants from the province. The average size of each out flow amounted to 1,487. Provinces of White Nile, East Equatoria, Gezira, and Lakes have collectively received 31.2% of the migrants from the Upper Nile. Another 14.6% were received by Jongley, South Kordofan, and Blue Nile. The rest was distributed among the remaining provinces. Unlike the preceding provinces, migration to the Upper Nile is more affected by distance ($R = -0.289$) than migration from the province to other provinces ($R = -0.135$).

4.3.5 Gezira

That Gezira province ranks fifth in terms of net-migration rates. Lifetime migration to this province amounted to 213,305 individuals, a net migration gain of 85,916 and a net rate of 43. This indicates that Gezira was the destination for

13.5% of all moves; inflows averaging 12,547. The largest two flows entering Gezira province originated from the White Nile and North Darfur provinces, constituting more than one-third (33.9%) of all migrants to the province. In descending order, the provinces of Northern, South Darfur, North Kordofan, Blue Nile, Khartoum, South Kordofan, and the Nile have provided Gezira province with seven flows ranging between 18,417 and 10,122 and totalling 51.9% of all in-migrants. The remaining provinces provided 11 flows ranging between 80 and 6,619 and accounting for the remaining 14.2% of all in-migrants.

This in-migration to the province is not new; rather it goes back to the 1920s when the Gezira Scheme first emerged. Since then, large numbers of migrants from other provinces have entered Gezira province to work in the scheme and in other agricultural and agro-industrial projects situated in the province. The Gunaid Sugar Factory, textile and spinning factories, flour mills, oil factories, and others all continue to provide promising destinations for thousands of migrants from other provinces.

Gezira is ranked sixth in terms of numbers of out-migrants (Figure 4.4). A total of 127,389 out-migrants gives an average of 7,493 per flow. The largest three out-flows entered Khartoum 68,013 (53.4% of total out-migrants from the province), Blue Nile 19,523, (15.3%) and Kassala 10,331, (8.1%). That is to say, the three mentioned provinces received 76.8% of all migrants from Gezira, while the remaining 23.2% is distributed among the other provinces. The net-migration balance of Gezira province is a net gain of 85,916; some 4.3% of the total residents (see Figure 4.5).

As in Table 4.2, $R = -0.380$, shows the level of correlation between distance

and in-migration to the Gezira province, while that between out-migration and distance reflects a moderate relationship ($R = -0.561$).

4.4 Net Losing Provinces: The Top Five

Taking the net-migration rates as reference we find, as we stated, that Northern province is the first loser and the subsequent four ranks are occupied by Nile, North Darfur, South Kordofan and North Kordofan provinces (see Table 4.2). We will now examine in more detail the volume and direction of migration flows going in and out of these provinces, starting with the first in the group, the Northern province.

4.4.1 Northern

In both absolute and relative terms, the Northern province shows the highest out-migration with 230,557 born there living in other provinces in 1983 (Figure 4.4). The result is a net loss of 215,842 (Figure 4.5) giving rise to a net rate of 378 per 1000 residents. Five leading destinations (all well above the 17- provinces average of 13,562) accounted for 93.2% of all out-migrants from Northern province. By far the most important of these was Khartoum which received 100,469 (43.6%), followed by Kassala (23%), Red Sea, Gezira, and Nile. On the other hand, the six southern provinces together received only 1,762 migrants from Northern province, less than one percent of the total, a striking indication of lack of movement between the northern and southern extremities of the country. Northern province also shows the highest rate of out-migration with 29.3% of those born there resident in other provinces in 1983.

This considerable out-migration is the product of the very limited arable land,

and the growing population of the province. The arable land in the Northern province is found in a narrow strip along the banks of the river Nile. The cost of the land is very high and few families have holdings which are large enough to support or require the labour of all family members. As a result, individuals must decide between remaining where they are at a low standard of living or risking migration for higher expected returns; and a large proportion prefer the latter. Thus problems of limited land resources and tenure can be regarded as the main factors behind this out-migration in the Northern province.

Movement into Northern province also occurs but only on a very small scale; in-migrants numbered 14,715 (see Figure 4.2), an average of only 866 from each province. In fact, two-third (66.7%) of all migrants came from four provinces of North Kordofan, Khartoum, Nile and South Kordofan; three of which are adjacent to the Northern province. Only 5% had originated from the six southern provinces. In addition, the data show that, for every 1000 migrants who left the province there were only 64 in-migrants.

Distance seems to have a moderate effect on both out-migration ($R = -0.542$) and in-migration ($R = -0.533$).

4.4.2 Nile

In relative terms, Nile province ranks as the second largest loser with a net loss of 92,370, a rate of 189 out-migrants per 1000 born in the province and a rate of net loss of 155 per 1000 residents. The average out-flow size was 7,659, and was highly directional with the three adjacent provinces of Khartoum, Kassala and Red Sea, and with Gezira province. The four provinces together received 115,685 migrants out of a total of 130,211 Nile migrants; some 88.9%. Khartoum alone

received 48.1%, Kassala 24.1%, Red Sea 8.9%, and Gezira 7.8%. The remaining 13 flows were all less than 4,000 each and they range between 8 and 3,085. Less than 2% of all out-migrants of the province headed towards the six southern provinces, another illustration of the low level of movement between the north and south. Factors responsible for this out-migration are almost as same as those stated for the Northern province.

The rates of in-migration to the province show that for every 1,000 out-migrants there were only 291 persons coming in. Seventeen flows entered the province ranging between 49 and 15,845, and averaging 2,224. Inflows come mainly from within the four adjacent provinces which sent some 70% of all migrants to the province. The Northern province sent 41.9% of all migrants to the Nile province, followed by Khartoum 12.8%, Red Sea 8.6%, and Kassala 6.2%,. On the other hand, South Kordofan contributed 8.8%, Gezira 5.5%, and north Kordofan 2.8% of the migrants to the Nile province. The moves between the Nile province on the one hand and the six southern provinces on the other show a weak trend compared to that between the province and other northern provinces. Only 1% of all moves from the Nile province entered the six provinces of the south, and only 3.4% of all its in-migrants originated from there.

As depicted in Table 4.3, distance moderately affects both in-migrants ($R = -0.533$) and out-migrants ($R = -0.561$) of the Nile province, with greater effect on the latter group.

4.4.3 North Darfur

The net migration balance recorded in North Darfur was a loss of 166,277, and a rate of 140 out-migrants for every 1000 people born in the province. The

contrast between the large-scale exodus from this province and the small number of in-migrants is illustrated by the fact that, for every 1000 who left the province only 121 entered it; the net loss rate was 141. Migrants from North Darfur totalled 189,192 giving an average inter-provincial flow of 11,129. Some 41.5% of all out-migrants moved to South Darfur and a further 43.4% went to Khartoum, Gezira, and Kassala. The remaining 15.1% comprised 13 flows ranging between 23 and 8,614.

Despite the fact that the population density was only 8.3 persons per square kilometres for the whole region of Darfur; North Darfur is regarded as overpopulated in some areas (Ibrahim, 1978). This overpopulation results not from the size of the area, but from the low soil productivity and the small size of areas with permanent water supplies; consequently *the population density in the area of El Fasher, the capital of the province, for instance, has reached 70 inhabitants per km²* (Ibrahim, 1978,38). Drought and desertification which particularly affected this province (and North Kordofan as well) compelled thousands of people to leave their land and cross the borders to the less affected provinces. Desertification, which is confirmed to be the result of overgrazing, affected vast areas of natural pastures that provide necessary food for the nomadic tribes and their animals and lead to the death of large numbers of animals. Thousands were left with no alternative but to travel and seek food and shelter in other provinces. This drought and desertification have been the main causes of recent movements from the western provinces in general and from North Darfur in particular. Other factors include seasonal migration to the agricultural projects in Gezira, Kassala and Blue Nile provinces.

At the same time, North Darfur received counter streams of migrants totalling

22,915; of which 34.2% were from the adjacent South Darfur. North Kordofan, Khartoum, Gezira and South Kordofan were sources of 26.4% of all in-migrants to the province. The remaining 39.4% came from the other 12 provinces. Together, the six southern provinces sent only 4.8% of the migrants to North Darfur showing the weak contacts between this province and the south.

Migrants to North Darfur seem to be strongly affected by the distance factor with a correlation coefficient of $R = -0.720$. On the other hand, the correlation between distance and the number of out-migrants proved to be weaker ($R = -0.510$). The two coefficients suggest that migrants to North Darfur are somewhat more affected by distance than those moving out of it to other provinces.

4.4.4 South Kordofan

This province has experienced a net migration loss of 98,670 resulting in a net-migration rate of some 100 per 1000 resident population. Also in relative terms, the proportion of migrants to South Kordofan was 63 persons in every 1,000 resident population, while that of out-migrants was 148 in every 1,000 population born in the province.

The total number of out-migrants from South Kordofan was 160,684 with an average flow size of 9,452. South Kordofan sent its largest flow of migrants to Khartoum a total of 84,340, some 52.5% of all its out-migrants. Another three flows ranging between 10,341 and 14,872 were to North Kordofan (9.3%), Gezira (7.3%), and Kassala (6.4%). Collectively, the six provinces of the south were the destinations of only 5% of the out-migrants from South Kordofan.

The main reason behind out-migration from this province is the fact that it

provides the source of labour for the Gezira and Rahad schemes in Gezira province, and mechanized agricultural schemes in Kassala province. Large numbers prefer to stay for one or two years or permanently in these provinces. Also, attracted by the bright lights of the city, thousands of the migrants prefer to go to the national capital Khartoum and join the growing informal sector there doing marginal jobs.

The province experienced inflows of in-migrants totalling 62,014, and averaging 3,648 each. For every 1000 out-migrants there were 386 coming in. The largest flow entering the province originated from the adjacent province of North Kordofan, and the second was also from the other neighbour, South Darfur; together the two sent 36.9% of all migrants to South Kordofan. Only 3% of the migrants to the province originated from the six southern provinces. The remaining provinces were the source of 59.1% of all in-migrants in 9 flows ranging between 527 and 5,322.

Distance shows a modest relationship with out-migration ($R = -0.350$), and with in-migration. This may imply that out-migrants of the province are not much aware of distance in their migration.

4.4.5 North Kordofan

The net migration loss of this province was 108,621 resulting in a net-migration rate of 85. The out-migration rate of the province was 110 in every 1000 born in it. Its largest out-flow of migrants was to the province of the national capital Khartoum in a flow containing 66,095 individuals; some 43.7% of all out migrants. 12.2% of the out-migrants entered Gezira, South Kordofan received 9.4%, South Darfur 7.8% and White Nile 6.8%. Averaging 2,788 each, the remaining outflows headed towards the remaining provinces. The six southern provinces together were the destination of only 6.5% of the out-migrants from North Kordofan. We can say

that all the factors listed for North Darfur also apply to North Kordofan because they both share the same geographical and economic characteristics.

At the same time the rate of in-migration amounts to 33.5 per 1,000 resident population. The average size of flows of in-migrants to the province was 2,507, and they add to a total of 42,618. The adjacent province of South Kordofan sent the largest stream of migrants to North Kordofan amounting to 14,872, some 34.9% of all migrants to the province, and North Darfur, the second neighbour, sent 12.8% . Another eight flows entered North Kordofan ranging between 1,220 and 3,448 with an average size of 2,469. These eight flows originated from Khartoum, South Darfur, Gezira, Bahr al Ghazal, Northern, White Nile, Nile and Blue Nile, summing to 46.3% of all in-migrants. The six southern provinces contributed only 9.3%.

Distance seems to have a moderate relationship with the number of migrants to North Kordofan ($R = -0.639$), but a modest relationship ($R = -0.379$) with the number of outmigrants to other provinces.

4.5 Impact Flows

Another possible approach to the analysis of Table 4.1 involves the concept of *impact flows*. Different sizes of migration flows originating from the same province might not necessarily have the same proportional impact on the different areas of destination. For example, although 54,949 persons migrated from Northern province to Kassala while 25,313 migrated from the former province to Red Sea the destination impact of the smaller flow of migrants to Red Sea province was greater than that of the bigger one to Kassala. The simple cause of this paradox is the fact that the population of Red Sea province is smaller in size than that of Kassala. By

dividing the elements in each column of the population matrix in Table 4.1 by their corresponding column-elements in the principal diagonal, one gains an impression of the numerical impact of each migration flow on each particular destination province. Relative numerical impacts on provinces of destination are computed for the 18 provinces in Table 4.4(a). Lifetime migrants are therefore compared to the population of their destination province who have not made an inter-provincial move. As stated by White and Woods (1980) *the higher the resulting figure the greater the 'impact' of the arrivals is likely to be in terms of their addition to the immobile group* (p. 24).

From Table 4.4(a) it is clear that the out-migration flows from Northern province, the one with greatest relative numerical impact on a destination province was the one to Red Sea (0.112). Eight other provinces have had their highest impact flows on the destination of Khartoum; these include Nile (0.060), Gezira (0.065), Blue Nile (0.022), South Kordofan (0.081), North Kordofan (0.063), South Darfur (0.059), Bahr al Ghazal (0.005) and Upper Nile (0.010). Most of the remaining provinces have had their highest impact flows with their adjacent provinces and they include that from Red Sea to Kassala (0.007), Kassala to Red Sea (0.032), Khartoum to Red Sea (0.025), White Nile to Upper Nile (0.043), North Darfur to South Darfur (0.059), Lakes to Bahr al Ghazal (0.005), Jongley to Lakes (0.014) and those between East and West Equatoria, (0.017) and (0.009) respectively.

In general the impact of out-migration flows between the provinces of the Sudan North and Sudan South seems to be very low apart from that of Bahr al Ghazal and Upper Nile on Khartoum (0.011 and 0.010 respectively) and that of White Nile on Upper Nile (0.043), a result supports the above argument of the weak contacts between the north and the south parts of the country.

Similarly, we can consider the impacts of these migration flows on the provinces of origin or, in our case, provinces of place of birth. This impact is measured by dividing the elements in the rows of Table 4.1 by the relevant row figures from the principal diagonal (see Table 4.4(b)). The resulting figure reflects the significance of each flow in depleting the province of its population; White and Woods (1980) called this the *origin impact* of migration. For example, the origin impact of migration between the Northern and Khartoum is 0.257 (the highest among all) on Northern province but 0.002 on Khartoum. This implies that the migration stream from Northern to Khartoum has a higher impact on the former than the counter-stream has on the later. The effect of migration to Khartoum in depleting populations of different provinces is clear from Table 4.4(b) column 5. Apart from North Darfur (to South Darfur), Jongley (to Lakes), West Equatoria (to East Equatoria) and Lakes (to Bahr al Ghazal), all the remaining 13 provinces experienced their highest origin impact of migration with Khartoum province.

Another way of representing migration streams could be obtained by a matrix of net-migration flows reflecting the prevailing direction of migration. For the Sudan, this matrix is depicted in Table H in Appendix A and is also derived from Table 4.1. Nothing else more important than what has already been mentioned could be extracted from that table. Nevertheless, it is important to bear in mind that such a type of matrix displays distinct directional bias which is the product of gross flows in opposite directions; that is to say the existence of counter-streams must not be forgotten.

Table 4.4(a): Relative Numerical Impact Flows Between the 18 Provinces: Impact on Provinces of Destination

Province of Place of Birth	Province of Usual Residence																	
	1 North- ern	2 Nile	3 Red Sea	4 Kassala	5 Khartoum	6 Gezira	7 Blue Nile	8 White Nile	9 South Krdofan	10 North Kordofan	11 North Darfur	12 South Darfur	13 Bahr al Ghazal	14 Lakes	15 Upper Nile	16 Jongley	17 East Equatoria	18 West Equatoria
(1) Northern		0.028	0.112	0.054	0.096	0.010	0.004	0.008	0.001	0.002	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000
(2) Nile	0.005		0.051	0.031	0.060	0.006	0.004	0.004	0.002	0.002	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002
(3) Red Sea	0.002	0.006		0.007	0.006	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
(4) Kassala	0.002	0.004	0.032		0.018	0.004	0.012	0.002	0.003	0.001	0.000	0.001	0.000	0.000	0.002	0.000	0.000	0.000
(5) Khartoum	0.006	0.009	0.025	0.005		0.008	0.005	0.006	0.006	0.003	0.002	0.002	0.000	0.002	0.003	0.000	0.002	0.000
(6) Gezira	0.002	0.004	0.011	0.010	0.065		0.023	0.011	0.005	0.002	0.001	0.002	0.001	0.000	0.005	0.000	0.000	0.001
(7) Blue Nile	0.000	0.001	0.005	0.007	0.022	0.009		0.006	0.001	0.001	0.000	0.001	0.000	0.000	0.006	0.000	0.000	0.001
(8) White Nile	0.001	0.001	0.003	0.002	0.037	0.021	0.006		0.002	0.002	0.000	0.001	0.000	0.007	0.043	0.000	0.000	0.002
(9) South Kordofan	0.003	0.006	0.033	0.010	0.081	0.007	0.010	0.011		0.012	0.001	0.002	0.001	0.001	0.008	0.000	0.000	0.000
(10) North Kordofan	0.011	0.002	0.012	0.007	0.063	0.009	0.008	0.014	0.015		0.002	0.009	0.001	0.002	0.009	0.000	0.000	0.000
(11) North Darfur	0.001	0.001	0.003	0.018	0.031	0.017	0.010	0.007	0.003	0.004		0.059	0.001	0.000	0.007	0.000	0.000	0.000
(12) South Darfur	0.000	0.001	0.001	0.015	0.031	0.010	0.025	0.011	0.009	0.003	0.007		0.001	0.000	0.007	0.000	0.000	0.000
(13) Bahr al Ghazal	0.000	0.000	0.002	0.000	0.011	0.000	0.001	0.001	0.002	0.002	0.001	0.002		0.003	0.002	0.000	0.003	0.004
(14) Lakes	0.000	0.000	0.001	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005		0.001	0.001	0.002	0.003
(15) Upper Nile	0.000	0.001	0.001	0.000	0.010	0.001	0.001	0.004	0.001	0.000	0.000	0.000	0.000	0.002		0.002	0.002	0.003
(16) Jongley	0.000	0.000	0.000	0.000	0.002	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.014	0.010		0.004	0.000
(17) East Equatoria	0.000	0.001	0.002	0.001	0.008	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.010	0.002	0.002		0.017
(18) West Equatoria	0.001	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.003	0.001	0.000	0.009	

Source: Derived from Table 4.1

Table 4.4(b): Relative Numerical Impact Flows Between the 18 Provinces: Impact on Provinces of Origin

Province of Place of Birth	Province of Usual Residence																	
	1 North- ern	2 Nile	3 Red Sea	4 Kassala	5 Khartoum	6 Gezira	7 Blue Nile	8 White Nile	9 South Krdofan	10 North Kordofan	11 North Darfur	12 South Darfur	13 Bahr al Ghazal	14 Lakes	15 Upper Nile	16 Jongley	17 East Equatoria	18 West Equatoria
(1) Northern		0.041	0.065	0.140	0.0257	0.047	0.010	0.015	0.001	0.006	0.001	0.003	0.001	0.000	0.002	0.000	0.001	0.000
(2) Nile	0.004		0.021	0.056	0.112	0.018	0.006	0.005	0.004	0.003	0.000	0.002	0.000	0.000	0.001	0.000	0.001	0.001
(3) Red Sea	0.003	0.014		0.032	0.028	0.004	0.002	0.001	0.004	0.001	0.000	0.0001	0.001	0.000	0.000	0.000	0.000	0.001
(4) Kassala	0.001	0.002	0.007		0.018	0.006	0.010	0.001	0.003	0.001	0.002	0.000	0.000	0.001	0.000	0.000	0.000	0.000
(5) Khartoum	0.002	0.005	0.005	0.005		0.013	0.004	0.004	0.005	0.003	0.002	0.003	0.001	0.001	0.002	0.000	0.002	0.000
(6) Gezira	0.000	0.001	0.001	0.006	0.039		0.011	0.004	0.003	0.002	0.001	0.001	0.001	0.000	0.002	0.000	0.000	0.000
(7) Blue Nile	0.000	0.001	0.001	0.009	0.027	0.018		0.005	0.001	0.001	0.000	0.001	0.000	0.000	0.005	0.000	0.000	0.000
(8) White Nile	0.000	0.001	0.001	0.002	0.053	0.051	0.007		0.003	0.003	0.000	0.002	0.001	0.007	0.041	0.000	0.001	0.001
(9) South Kordofan	0.001	0.004	0.008	0.011	0.092	0.013	0.009	0.009		0.016	0.001	0.003	0.001	0.000	0.006	0.000	0.000	0.000
(10) North Kordofan	0.004	0.001	0.002	0.006	0.054	0.013	0.005	0.008	0.012		0.002	0.010	0.001	0.001	0.005	0.000	0.000	0.000
(11) North Darfur	0.000	0.000	0.001	0.017	0.030	0.028	0.008	0.004	0.002	0.005		0.071	0.001	0.000	0.004	0.000	0.000	0.000
(12) South Darfur	0.000	0.001	0.001	0.012	0.025	0.013	0.016	0.006	0.007	0.002	0.006		0.001	0.000	0.004	0.000	0.000	0.000
(13) Bahr al Ghazal	0.000	0.000	0.000	0.000	0.008	0.001	0.000	0.000	0.001	0.002	0.000	0.002		0.002	0.001	0.000	0.002	0.001
(14) Lakes	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010		0.001	0.001	0.002	0.001
(15) Upper Nile	0.000	0.001	0.000	0.001	0.015	0.002	0.002	0.004	0.002	0.001	0.000	0.001	0.001	0.002		0.002	0.003	0.001
(16) Jongley	0.000	0.000	0.000	0.000	0.003	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.013	0.009		0.005	0.000
(17) East Equatoria	0.000	0.000	0.000	0.001	0.008	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.007	0.001	0.001		0.006
(18) West Equatoria	0.001	0.001	0.000	0.001	0.007	0.000	0.000	0.001	0.001	0.001	0.000	0.000	0.007	0.006	0.003	0.000	0.028	

Source: Derived from Table 4.1

4.6 Age and Sex Selectivity of Inter-provincial Migration

Table 4.5 reports mobility levels by sex for three broad age groups; despite the deficiencies inherent in such data as a result of age misreporting, a number of significant features could be identified. There is clear evidence that males have a greater propensity to migrate between provinces than do females. In 1983 about 113 males out of every thousand were living outside their province of birth, while the equivalent figure for females was only 87.

There are also significant differences between the three age groups. The least mobile section of the population was that of children aged 0-14, with mobility ratios (proportions living outside province of birth) of 48 per 1000 for males and 47 for females. The most mobile male age group was the middle group 15-44 while for females it was the oldest group 45+. In 1983, about 180 males in every 1000 aged 15-44 were living outside the province in which they were born; the equivalent figure for females was 117. For males in the higher age group there were 153 in every 1000 living outside their province of birth; the equivalent figure for females was 133. Regarding the whole population, males and females; the propensity to migrate shows a higher value for the middle age group (146), a lower value for the oldest population (144) and a smaller value for the children (47).

Further aspects of migration selectivity are illustrated in Tables 4.6 and 4.7, both of which are derived from Table 4.5. Table 4.6 gives the sex ratios of the resident and migrant populations in each age group. In all three cases the ratio (males per 1000 females) is higher among migrants than among resident population.⁷

⁷ Resident population consists of that proportion of population which were born and live in their province of birth, plus that which lives in the same province but was born elsewhere; that is, the original plus the in-migrant population.

Table 4.5: Sex and Age Differentials in Population Movement

(1)	(2)	(3)	(4)	(5)	(6)
Age Groups	Total Residents	Original Population	Total Born in Another Province	$\frac{(4)}{(2)} \times 1000$	$\frac{(3)}{(2)} \times 1000$
Males:					
00 - 14	4268443	4064402	204041	48	952
15 - 44	3406218	2793224	612994	180	820
45 +	1194539	1011657	182882	153	847
TOTAL	8869200	7869283	999917	113	887
Females:					
00 - 14	4023362	3835724	187638	47	953
15 - 44	3860203	3408902	451301	117	883
45 +	1089261	944369	144892	133	867
TOTAL	8972826	8188995	783831	87	913
Population:					
00 - 14	8291805	7900126	391679	47	953
15 - 44	7266421	6202126	1064295	146	854
45 +	2283800	1956026	327774	144	856
TOTAL	17842026	16058278	1783748	100	900

source: Derived from the PCO, 1989

The adult population constitutes all those aged 15 years and over. Table 4.7 reports the age structure of resident and migrant adults by sex. The adult migrant males represent 79.6% of the total migrant population of males; the equivalent ratio of females is 76.1%. These rates are higher than those calculated for the residents, where the adult males and females constituted 51.9% and 55.2% of all male and female populations respectively.

Table 4.6: Sex Ratios of Resident and Migrant Population by Age

Age Group	<i>Ratios of Males over Females</i>	
	Residents	Migrant Population
Under 15 Years	106	109
15 - 44 Years	088	136
45 Years and Over	099	128

Ratios are explained as males per 1000 females

Table 4.7: Age Structure of Resident and Migrant Adult Populations by Sex

Sex	<i>Population Aged 15+ per 100 Total</i>	
	Resident Population	Migrant Population
Males	51.9	79.6
Females	55.2	76.1
Total	53.5	78.0

Source: Derived from Table 4.5

The matter of migration selectivity by sex is taken a stage further in Table 4.8 which reports the sex of in- and out-migrants for each province. Among the male population, out-migration rates vary from 419 per 1000 born in the Northern province to only 25 per 1000 born in Bahr al Ghazal. In-migration rates cover a somewhat narrower range from 409 per 1000 in Khartoum province to only 4 per 1000 in Jongley. Variation in the migration rates for females are less than those for males. Out-migration of females ranges from 15 to 327 per 1000 born in the province; in-migration from 7 to 314 per 1000 resident population. Provincial net migration balances cover a very wide range, from + 331,688 to - 115,916 in the case of males and from + 208,790 to - 99,858 in that of females.

Table 4.8: Sex Ratios of out- and in-Migrants by Province

Place of Birth	Out-migrants per 1000 Population Born		Males ÷ Females	In-migrants per 1000 Resident Population		Males ÷ Females	Net-Migration Balance	
	Males	Females		Males	Females		Males	Females
Northern Nile	419	327	128	46	29	159	-115916	-99858
Nile	267	158	169	70	58	121	-75133	-37740
Red Sea	85	83	102	302	225	134	40469	21241
Kassala	54	46	117	218	198	110	116206	98485
Khartoum	57	52	110	409	314	130	331688	208790
Gezira	84	51	165	130	86	151	49514	37007
B. Nile	77	57	135	115	96	120	19612	19951
W. Nile	165	132	125	111	98	113	-30375	-16018
S. Kordofan	180	109	165	69	49	141	-60391	-35350
N. Kordofan	134	89	151	38	29	131	-66564	-44129
N. Darfur	183	115	159	22	19	116	-98394	-68000
S. Darfur	111	73	152	91	78	117	-16016	3933
B. Ghazal	25	15	167	16	13	123	-7235	-1334
Lakes	27	18	150	52	34	153	9909	6184
Upper Nile	42	27	156	101	98	103	24848	25562
Jongley	34	30	113	4	7	57	-12554	-8425
E. Equatoria	35	25	140	40	33	121	2921	4173
W. Equatoria	57	46	1.2	46	31	148	-1911	-2732

4.7 Summary

Most of the data produced in this chapter may be considered as preliminary findings which need to be tested by further research. At the same time, they enable the findings of detailed empirical research on population mobility in the Sudan to be placed in context as well as suggesting topics and areas for more detailed investigation in future projects. Empirical studies of migration in Sudan have tended to concentrate on rural-urban migration and have been particularly concerned with the changes in the economic and social relationships between groups and individuals resulting from their migration (see, for example, Ali, 1987; Galal el Din, 1979; Hassaballa, 1983; and ILO, 1976).

The overall level of mobility and its spatial structure in Sudan are much more complex matters than the analysis carried in this chapter. Such matters are dealt with at a theoretical level by Zelinsky (1971), in his *hypothesis of the mobility transition*, which states, among other things, that there is a general increase in the level of mobility as development takes place. To him, *there are definite, patterned regularities in the growth of personal mobility through space-time during recent history, and these regularities comprise an essential component of the modernization process* (pp. 221-222). The stages of the mobility transition have been set alongside those of the classic demographic transition; since Sudan is now in the early transitional stage in demographic terms, we might expect it also to be in the *early transitional stage* as regards mobility. Zelinsky has identified five main features of that stage; large-scale rural-urban migration; colonization of rural frontiers by rural folk; small-scale immigration of skilled workers; large-scale emigration of labourers; and an increase in various kinds of circulation related to greater personal mobility. These features are listed by Zelinsky in parallel position with the associated de-

mographic characteristics of the society which are: (1) slight, but significant, rise in fertility, which then remains fairly constant at a high level, (2) rapid decline in mortality, (3) a relatively rapid rate of natural increase, and thus a major growth in size of population.

With the exception of the immigration of skilled workers, which has not been identified in research carried out so far, all these features listed by Zelinsky would appear to be present in Sudan. Large scale rural-urban migration is certainly under way and is the focus of much research and planning in the Sudan, and at the same time new wide areas of land have been opened and exploited by the rural folks as residential and agricultural land in the countryside. There is a sufficient emigration of skilled workers to the Gulf, Libya, Iraq, Saudi Arabia, and Yemen. Although the birth-place data used in this chapter tell us little about the timing and nature of individual moves, the development of transport and industry in the Sudan in recent decades, together with new employment opportunities have led to an increase in individual circulation. At the same time, the Sudanese population's demographic structure almost coincides with the three demographic characteristics mentioned by Zelinsky as accompanying the early transitional society; therefore, the volume and speed of mobility in the Sudan could be regarded as increasing.

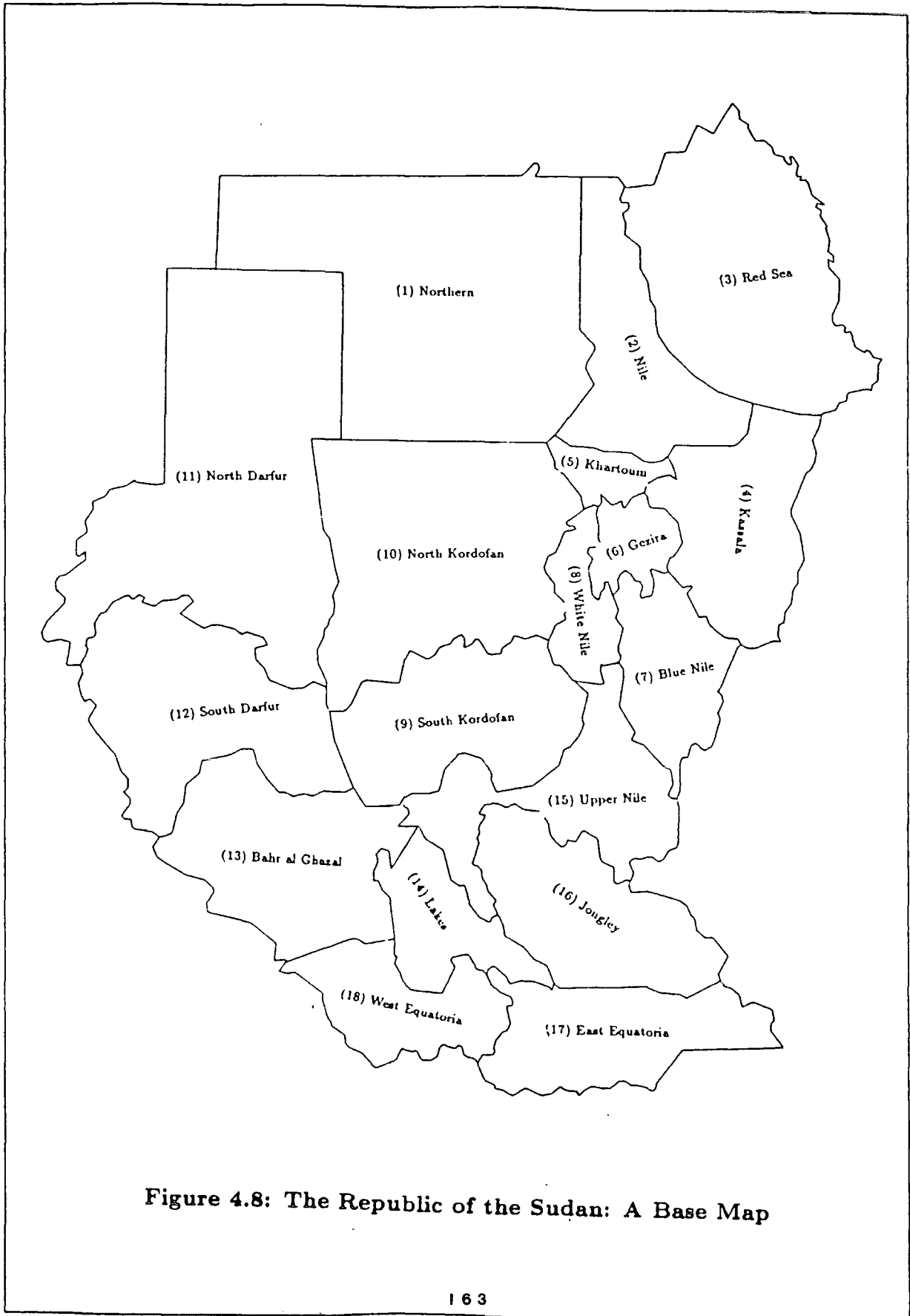


Figure 4.8: The Republic of the Sudan: A Base Map

Chapter V

Urbanization and Rural-Urban Migration in the Sudan

5.1 Urbanization: Definition and Concept

As a demographic phenomenon, the concept of urbanization in a given country may be viewed as a process involving two main trends, namely those of absolute and relative growth of towns and cities within that country. These trends eventually involve first an increasing proportion of the population resident in urban places, and second, a growth in the proportion of the population living in the largest urban centres. The end of the sequence is presented as an almost completely urbanized society, with a high proportion of its population living in a few large places.

The second concept is that structural changes in society resulting from industrial development are also linked to the demographic process. Cities are presented as the focus of the exchange processes that are central to the capitalist mode of production and as the optimum location for the production functions. Consequently, the search for increases in productivity leads to the development of factories to make use of the economies of scale and the advantages to be gained from the process of *concentration* and *centralization*.¹ The third concept is that of urbanization as a behavioral process. Urban areas have been identified as centres of social change; attitudes, values and behaviour patterns are modified in the particular environment of the urban place and then spread to the rest of the population by diffusion through the urban system.

¹ The two words mean the tendency towards localization of economic activities in and around a relatively small number of urban centres.

This concept or model of urbanization has been challenged on a number of grounds, the most important of which (to our study) is that, in many of the less developed countries, the pace of demographic urbanization is far outrunning the pace of industrialization, (Johnston, 1983).

5.2 Urbanization in the Sudan

El-Mustafa (1983) states that the basic changes in the productive structure clearly have infinite variations in different historical examples stemming from differences in the modes of capital accumulation within different particular social formations. In the Sudan, the pattern of urbanization has been strongly affected by the main objectives of the British colonial regime and its modes of capital accumulation; extracting as much surplus as was possible at the minimum cost. These objectives required the introduction of certain changes in the structure of Sudanese society so as to ensure the production of the surplus to be extracted. As a result, most of peasant economies in the country at that time were transformed to serve as suppliers of cheap labour producing the necessary commodities (such as cotton) for capitalist businesses.

Therefore, all those who remained behind in villages became increasingly dependent on cash earnings to cover their daily needs. In some parts of Northern and Western Sudan it was possible for farmers to turn themselves into export producing cultivators. However, for those who failed to meet their needs in this way, migration seeking wage-labour in agricultural schemes or urban centres became the only viable alternative (Bakri, 1988,150).

To give a brief account of the process of urban growth in the Sudan, data will be provided in this section describing the levels and rates of urbanization in the Sudan.

The Department of Statistics used various criteria for defining urban areas in the country. In some cases (throughout the three censuses) the classification of an area as urban was based on its administrative importance even if the administrative locality had no commercial, industrial, cultural or other importance. In other cases, size (a minimum population of 5000) was used as a criterion, and large villages were often classified as towns. As a result of this confusion, the rates of urbanization in the country were distorted. El-Arifi (1980) stated that some anomalous findings appeared in the 1955/56 and 1973 censuses; for example, Upper Nile province had only one town, Malakal, while places such as Kaka and El Nasir were not considered as urban. Conversely, in 1973 some places were classified as urban despite their population being less than 2000, such as El Khandag (826) and El Dabba (1435) and this had equally been the case in 1955/56 when Yei (1352) and Katari (611) were enumerated and classified as urban centres. These distortions and imperfections were also experienced in 1983.

In 1955/56, only 8.3% of the total population of Sudan was recorded as living in urban centres and the census showed that about 60% of the urban population was living in eight towns with populations of 20,000 or more (Table 5.1). These included the Three Towns of Khartoum (i.e Khartoum, Khartoum North, and Omdurman); some 4.1% of the country's total population were living in those eight towns. By 1973, some 18.2% of the population was living in urban areas and there were 14 towns of 20,000 or more inhabitants. Three cities- Khartoum, Port Sudan and Wad Medani had populations above 100,000 in 1973; by 1983 this number had increased to six by the addition of Kassala, El Obied and Gadaref. Khartoum stands head and shoulders above all other cities, with a population well in excess of one million.

**Table 5.1: Population and Growth Rates of
Major Sudanese Towns
(1956 - 1983)**

Towns	Population ¹			Growth Rates per Year		
	1956	1973	1983	1956-1973	1973-1983	1956-1983
Khartoum ²	143541	823170	1346094	10.70	5.11	8.60
Port Sudan	47462	132632	212741	6.15	4.90	5.70
Kassala	40612	99652	142909	5.35	3.51	4.76
Wad Medani	47677	106715	141065	4.80	2.86	4.09
El Obied	52372	90073	139446	3.20	4.53	3.68
Gadaref	17537	66465	119002	8.05	6.08	7.33
Kosti	27688	65404	91946	5.12	3.5	4.53
El Fashir	26161	51932	84533	4.06	5.06	4.43
Juba	...	56000	83787	...	4.17	...
Atbara	36298	66116	73009	3.54	1.01	2.61
Guneina	11817	35424	55996	6.59	4.75	5.91
Malakal	...	35000	33738	...	-0.37	...
Wau	...	53000
Total	451165	1681583	2524266

1- Source: Bakri, 1988.

2- Includes the Three Towns

Table 5.1 ranks the major towns in the Sudan based on their population size in 1983 and calculates their corresponding growth rates in the period 1956-1983. The big towns of Khartoum, Port Sudan, Wad Medani, Kassala and El -Obied are regarded as the primate cities of the country; some 78.5% of the total population of the 12 towns (excluding Wau) listed in Table 5.1 were living in these five primate cities in 1983.

Generally it is argued that *the major cities in Africa are plagued by the adverse effects of rapid growth-urban sprawl, unemployment, delinquency, inadequate social services, traffic congestion and poor housing. Undoubtedly these features and the rapid rate of urban population growth from now till the end of the century have serious implications for food, housing, education, health services, job opportunities and social amenities in the urban areas and the nation(s) as a whole*, (E.C.A, 1984 cited in Bakri, Z., 1988, p. 154). Sudan is no exception among these African countries; in fact these disorders are reflected in the primate cities of the country in the growth of shanty towns, squatter settlements and slums. Khartoum and Port Sudan, for example, have extensive squatter settlements.

Table 5.2 reports the estimates and projections of urban population in the Sudan and selected African countries. The projections suggest that the Sudanese urban population will constitute 42.5% of the total by the turn of this century. But, as Table 5.3 reflects, the urban growth rate in the country will decline to 4.7% per annum by the year 2000. This decline in the rate of urban growth will likely be due to the slowing down of rural- urban migration.

The most important factors responsible for the rapid rate of growth of the urban centres in the country include natural increase, net migration and the re-drawing of the borders of towns to encompass surrounding villages. Rural-urban migration and natural growth are by far the most important factors accounting for this high rate of urbanization.

The estimated annual growth rate of the Sudan population as a whole in 1983 was 2.8% per year and this rate is partially responsible for the 6.0% rate of urban growth. The natural increase in the urban population is expected to remain high

because of the declining mortality and the relatively high and constant fertility. Rural-urban migration also contributes to the high urban growth rate in the country. At least 3.2% of the 6.0% urban growth rate may be attributed to in-migration from rural areas. Despite the fact that most of the rural-urban migrants are Sudanese, migrants from out of the country, in the form of refugees, also contribute to the growing urban population.

Table 5.3 suggests that the projected urban population growth rates will decline to 4.7%, a change which suggests that a higher proportion of the urban growth rates will be accounted for by the natural increase rather than by in-migration. Thus, rural-urban migration will be relatively small in relation to the total urban population increase and, as a result, natural increase and redrawing of town borders will account for the most important part of the urban population growth. But this projection seems unlikely; diverse factors will continue to maintain migration as an important element in urban growth for many more years to come.

A major factor in population mobility is unbalanced regional development, to which should be added specific problems such as the civil war in the south, drought and desertification, and the influx of refugees from neighbouring countries, as well as the attraction of the towns as centres of education, higher incomes and social amenities.

Population movement between rural and urban areas is commonly categorised under four heads: rural-urban, urban-urban, rural-rural and urban-rural (usually return) migration. As the major factors underlying urban growth in the Sudan, rural-urban and inter-urban movements receive particular attention in the sections which follow with greater emphasis on the former, taking the national capital

Table 5.2: % Estimates and Projections of Urban Population in the Sudan and Selected African Countries (1950-2000)

Country	1950	1960	1970	1980	1990	2000
Sudan	6.3	10.3	16.4	24.8	34.0	42.5
Egypt	31.9	37.9	42.3	45.4	50.5	57.4
Nigeria	10.5	13.1	16.4	20.4	26.1	33.4
Zaire	19.1	22.3	30.0	39.5	48.6	56.3
Kenya	5.6	7.4	10.2	14.2	19.5	26.2
World	28.9	33.9	37.4	41.1	45.8	51.1

Table 5.3: Annual Growth Rates of Urban Areas in Some African Countries: (1950-2000)

Country	1950/ 1960	1960/ 1970	1970/ 1975	1975/ 1980	1985/ 1990	1990/ 1995	1995/ 2000
Sudan	6.8	6.9	6.9	6.7	5.8	5.3	4.7
Egypt	4.1	3.5	3.0	3.4	3.3	3.3	3.3
Nigeria	4.7	5.0	5.2	5.5	5.9	5.8	5.7
Zaire	3.8	5.0	5.4	5.3	4.8	4.5	4.1
Kenya	5.2	6.4	7.0	7.3	7.3	7.1	6.8
World	3.4	3.0	2.8	2.7	2.7	2.7	2.6

Source: U.N., Estimations and Projections of Urban, Rural and City Population, 1950-2000: The 1980 Assessment, New York 1982

Khartoum as our case study.

5.3 Migration to the Capital City of Khartoum

Migration has generally been regarded as the most important demographic

process changing the size and composition of geographically based populations within nations. Rural-urban migration of population has been particularly important for the urbanization process in most countries, especially the less developed ones. Many scholars agree that, whatever the direction of primary flows, there is no country in the world today which does not have an urban population which is growing, at least in part because of rural-to-urban migration; and generally in countries with multiple urban centres these are differentially affected by both the rural-urban and the inter-urban movement of population. Findings of various researchers indicate that, in most of the less developed countries, rural-urban migration dominates other types of movement. The general direction of migration flows can easily be detected, but the volume, specific direction, and composition of migration seem more difficult to identify and show sizable fluctuations from one period of time to the next, depending upon the particular social, economic, and demographic conditions prevailing. Thus, there may be steady flows of migrants from rural to urban areas and these may affect the size and composition of sending and receiving areas in certain patterns. But certain changes in the sending or receiving areas can temporarily or permanently alter these patterns. As a result, it becomes relatively difficult to make long term projections of rural-urban migration which can form a reliable basis for socio-economic planning.

The assumption of the classical model of rural-urban migration suggests that there exists surplus labour in rural agrarian areas, as against labour shortages in urban industrialized areas. If that is the case, then rural-urban migration will increase the marginal productivity of both those who stay and those who migrate; that is to say by reducing the labour/land ratio in rural areas and increasing the supply of productive labour in urban centres. This assumption might hold true for

a few developing countries, but the vast majority of them, particularly in Africa, are facing a problem of rapid urban growth without having the potentials in the urban sector to absorb the migrant labour force in a productive way. *In tropical Africa the magnitude of rural-urban migration has greatly exceeded the capacity of the modern industrial sector to absorb the persons concerned, so that it can only employ productively a small proportion of them* (Todaro, 1977,45).

In the Sudan, the pressure of population on urban centres has resulted in a number of problems such as unemployment, underemployment, inadequate housing supplies and social services, crime and delinquency, and squatter settlements. These problems carry the threat of unrest and instability and may lead to social unrest and military coups. Becoming the places of residence for large numbers of people compared with rural dispersion, urban centres in the Sudan, particularly Khartoum City, attract the bulk of expenditure on social development in the fields of education, sanitation, health care, electricity and water supplies, with little of these expenditures going to the rural areas. Therefore, the increasing rural-urban migration in the Sudan is an outcome of the deteriorating socio-economic conditions prevailing in rural areas much more than the attractive lights of the city.

Before the Second World War, labour migration in the Sudan was mainly directed to rural areas, particularly the Gezira scheme, Tokar and Gash deltas and Gedaref area. Earnings in agriculture, particularly during the peak periods, were higher than in Khartoum city. There were naturally some fluctuations in wages according to supply and demand, and there was quite commonly a shortage of labour in the three towns of the capital city, especially during the peak of the agricultural season (Galal al Din, 1980).

Since the Second World War, this shortage of labour has changed into a large surplus. The most important reason behind this change is that there has been very little economic and social development in the areas outside Khartoum. Galal al Din mentioned that about 77% of all industries, and 73% of the entire Sudanese industrial labour force are located in the national capital, which has consequently become very attractive to migrants. Therefore, the volume of migration has greatly exceeded the capital's capacity to absorb all new migrants in productive works.

The 1983 census data on lifetime migration to the city of the national capital (Khartoum) will be used to measure the size and composition of migration to the city. The number of lifetime migrants in the city is actually far less than the total number of migrations experienced by those persons. This is because of the fact that each individual migrant may have moved into and out of the city on several occasions but only one of these moves is actually enumerated and recorded. Similarly, migrants who return to the area of their birth prior to the time of the enumeration were not counted as migrants at their place of birth.

Also, a rural migrant to the city of Khartoum is defined as person who was enumerated as a usual resident of the city but whose place of birth was in a rural area. On the other hand, an urban migrant to the capital city is defined as a person usually residing in Khartoum whose place of birth was in another different urban place. The period of time during which that migration took place is indefinite as long as we are dealing with lifetime migration data.

5.4 Size of Migration to Khartoum

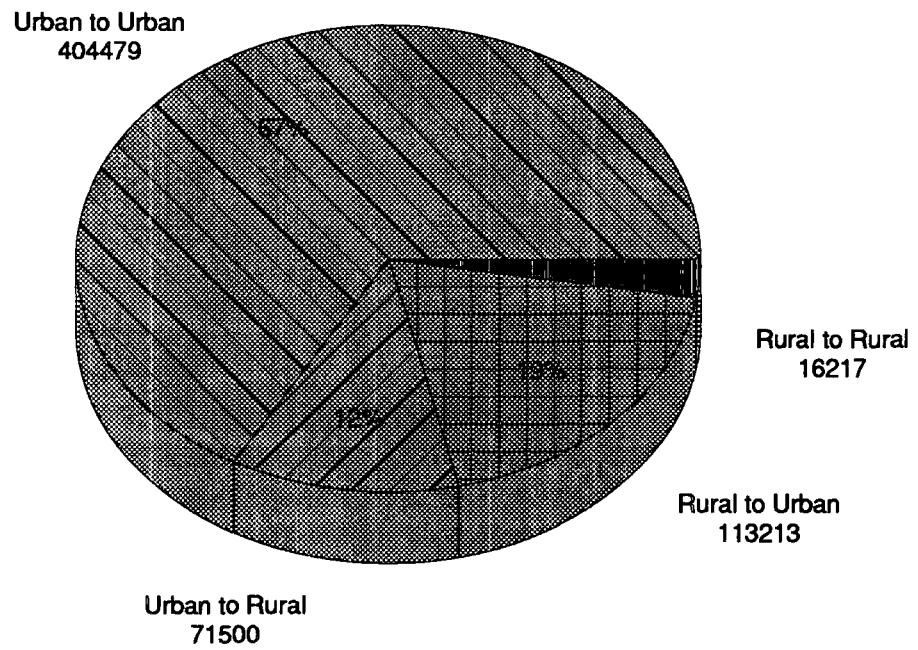
The population of Khartoum city represents some 75% of the whole population of the province; the rest represents the share of the rural population. The total

number of lifetime migrants to Khartoum province recorded in 1983 was about 605,409; some 34% of the total population of Khartoum conurbation (1,802,000). The Khartoum complex (i.e the Three Towns) represents the entire urban area of the province. Migration to Khartoum conurbation includes migrants from both urban and rural origins. Figure 5.1 reports the volume of migration to the urban and rural areas of the province of the national capital, in absolute and relative terms. About 404,479; some 67% of all migrants to the province, have been migrants from urban origins enumerated in Khartoum city. Another 19% (113,213) entered the city from rural origins; thus, some 86% of the migrants to the province entered Khartoum city. The remaining 14% include the migrants from urban and rural origins recorded in the rural areas of the province.

The surprising outcome of the above figures is the fact that migration to the national capital is dominated by inter-urban migration rather than by rural-urban migration. We expect that this feature (i.e the dominance of inter-urban migration) is confined to the city of Khartoum and does not apply to all the cities and towns of the country. This could be attributed to several factors, the three most important of which are; the definition of the urban areas, the ability of urban population to cope easily with the life style in Khartoum city, and the possibility of misreporting the exact place of birth by migrants in Khartoum.

The first factor returns us to the problems surrounding the definition of urban areas applied by the Department of Statistics in the 1983 census (see section 5.2, paragraph 3). The definition is likely to overestimate the urban areas and consequently the population classified as inter-urban migrants in Khartoum conurbation. For the second factor it can be argued that a rural migrant might find it easier to migrate to any town or city, but he will think twice if he intends to migrate

Figure 5.1
Volume of Migration to Khartoum Province



Derived from 1983 Census Data.

to the capital city of Khartoum. This is because of the big differences (social and economic) between his village and the capital city, and the numerous problems lying ahead of his migration to the capital city. These differences and expected problems appear likely more easily to be overcome if he intends to migrate to a local town. On the other hand, those who are from urban origins know much about urban life, so it is not particularly difficult for them to migrate to the Three Towns. The third factor of misreporting of the exact place of birth is most likely to result in an overestimation of the numbers of urban migrants to the city of Khartoum. If asked about their place of birth, large numbers of Sudanese from the villages would mention the nearest town or city to their villages, no matter how far that city from the village. This is to make themselves identifiable since nobody will recognize the names of their villages.

5.5 Characteristics of Migrants

- Age and sex

As reported in Table 5.4, of the 548,348 migrants to Khartoum city, 62% were males and only 38% were females in 1983. Among the males, some 15.1% were in the age group 0-14, 74.3% in the age group 15-44 and 10.6% in the age group 45+. The corresponding rates for female migrants were 23.1%, 65.2%, and 11.7%. In all age groups the migrant males outnumber the female migrants, producing sex ratios of 106, 187 and 148 males per 100 females for the age groups 0-14, 15-44, and 45+ respectively. The sex ratio for the total migrants was 163 while that for the resident population was 142. That is to say, there were 163 male migrants for every 100 migrant women, while there were 142 resident males for every 100 resident females in the city of Khartoum. In 1973, sex ratio of the resident population of the

Table 5.4: Total and Relative Numbers of Migrant and Resident Population of Khartoum City by Sex and Broad Age Groups (1983)

Age Groups	Migrants to Khartoum City					Residents of Khartoum City				
	Numbers		Percent		Sex Ratios	Numbers		Percent		Sex Ratios
	Males	Females	Males	Females		Males	Females	Males	Females	
0 - 14	51227	48243	15.1	23.1	106	311386	121094	39.4	21.8	257
15 - 44	252532	135979	74.3	65.2	187	412298	380582	52.2	68.4	108
45 +	36039	24328	10.6	11.7	148	66404	54330	8.4	9.8	122
All ages	339798	208550	100	100	163	790088	556006	100	100	142

Source: Derived Tables A-I in Appendix A

city was 126 males per 100 females; in the same year this ratio was 89 in Darfur region, 96 in Kordofan region, and 86 in the Northern region. These figures reflect the selective nature of migration to the city; selective in both sex and age. The predominance of flows of male migrants implies that among all three broad age groups the propensity of males to migrate is higher than that of females; this is particularly the case in the middle age group (15-44) where the number of male migrants was almost twice that of females.

This selective nature of migration to the capital city of Khartoum has a serious impact upon the sending areas; particularly as, according to a survey

conducted in the city in 1971/72, nearly two-thirds (65.3%) of the migrants intended to stay permanently in the capital. The demographic, social and cultural characteristics of the migrants would qualify them to play an important developmental role were they to return to their place of origin. As regards their age, for example, some 70% were in the 15-44 age group and thus represent a high

percentage of the working population of the sending areas.

The selective nature of migration also has a serious effect upon the sex ratio of the population. A majority of the migrants to Khartoum were young males, either unmarried or leaving their wives and families in their villages for various reasons (Galal al Din, 1980). Reasons for the male domination of migration flows include both their superior educational opportunities and the cultural and religious beliefs deeply rooted in rural societies which prevent women from moving alone.

To obtain more detail on the characteristics of migrants to the capital city of Khartoum, an urban household survey was undertaken in the Three Towns. The aim was to evaluate the demographic and non-demographic characteristics specific to members of the migrant households and which have an effect on the decision to migrate and on the sending as well as on the receiving areas. The results of the survey are discussed in the following sections.

5.6 Methodology of the Survey

The field survey took place from December 1988 to late January 1989 in the Three Towns of the national capital Khartoum. The objective of the field work was to collect supporting information not found in the 1983 census. At the outset of the survey it had been intended also to include a field survey of rural households. The formidable problems of organization and transportation and limited resources of time and money compelled the survey to be restricted to the Three Towns of the national capital. Only a certain number of migrant households were to be interviewed. According to the 1983 census, the Three Towns contain 241,163 households of which Omdurman city includes some 40.8%, Khartoum 36.7%, and Khartoum North 22.5%. Therefore, a sample was made to survey 350 households

in the Three Towns. The share of Omdurman in the sample was 143 households (41%), Khartoum 125 (36%), and Khartoum North 82 house holds (23%). The size of the sample was restricted owing to time and resource constraints. The data were collected through personal interviews by the author, assisted by two trained interviewers.

The Methodology followed to select the sample of households was based on the following:

1. In each city a specific area known to contain migrant households was selected to be the field of the survey. Each of these areas is located within a broader administrative area known as a "people's council"². The selected residential areas are:

- **Omdurman El-Gadida (Umbadda) in Omdurman:**

In English, this area is called the new Omdurman as an opposite to older areas of the city (see Figure 5.2). According to the 1983 census, this area contained 31,793 households, the largest among the 13 councils included in the area council of Omdurman. Its population amounted to 101514 giving rise to an average household size of 5.7. The percentage share of male population was 56% and the sex ratio was 126.5 males per 100 females.

- **El Sahafa Town in Khartoum:**

This area of the survey is also a people's council by itself. It is the largest council in Khartoum area council in both terms of numbers of households (21669) and total population (125023); with an average household size of 5.8.

² Each of the three cities is regarded as an "area council", and furthermore each area council is subdivided into smaller councils known as "people's councils". Omdurman area council includes 13 people's councils, Khartoum 14, and Khartoum North 6, (PCO, 1983)

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MAP - FIG 5.2.

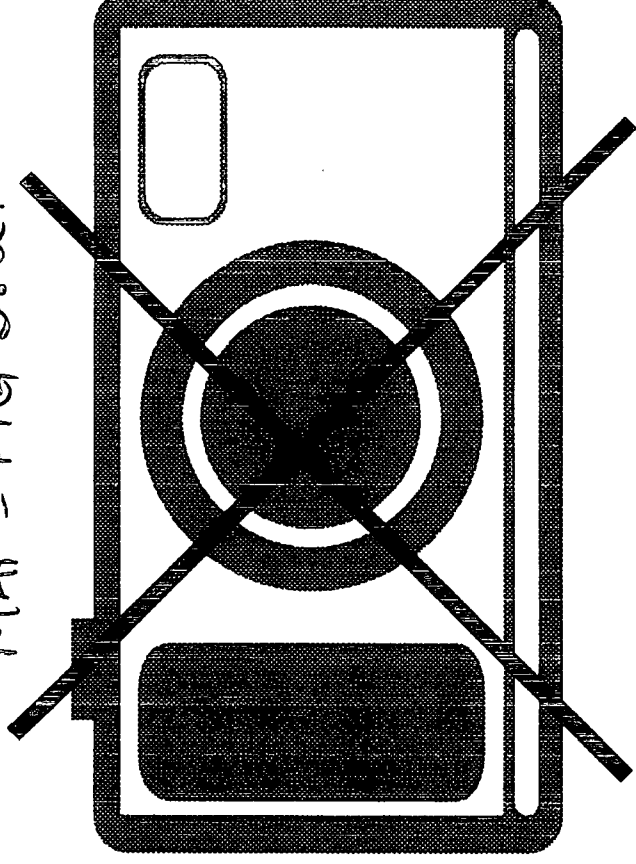
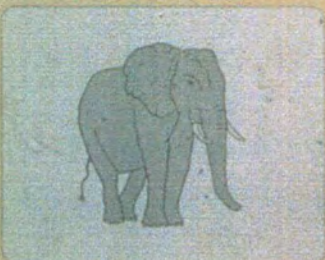


Figure 5.2: The Three Towns of the Capital City of Khartoum

Greater KHARTOUM

Khartoum Omdurman and Khartoum North

Scale 1:25,000



Printed and published by the Sudan Survey Department

General Cartographic Information... 1:25,000 scale... 1950



Legend table with symbols for roads, railways, and other features



Detailed legend table with symbols and names for various map features

The total number of male population was 58185 (46%), and the sex ratio was 114.9. The total number of households surveyed was 100.

- **El Geraif Gharb (West) in Khartoum:**

The second area chosen in the survey of migrant households in Khartoum city is the area of El Geraif Gharb. This area is located alongside the left bank of the Blue Nile in the south east of Khartoum city. Administratively, this area is part of El Geraif Gharb and Soba people's council. Because of the social, economic and geographic similarities of the two areas of this people's council, its demographic characteristics will be assumed to apply for our survey area of El Geraif Gharb. In 1983, the total number of households of this people's council was 5551, total population 33442 and an average size of households of 6 persons. The males were some 56% of the total population and the resulting sex ratio was 129.5. Only 25 households were surveyed in this area.

- **El Haj Yousif in Khartoum North:**

This survey area is part of the people's council of Bahri East Town in Khartoum North. This people's council is the largest one among other councils of Khartoum North area council. A total of 24930 households was recorded in this people's council (including El Haj Yousif), with a total population of 148496, and an average household size of 6 in 1983. Some 54% of the total population were males and the resulting sex ratio was 119.4.

In terms of building structure and material, Umbadda in Omdurman is dominated by houses built of mud. The rocky nature of the soil helps the large majority of house owners to refrain from using expensive building materials of red bricks and cement and use the mud instead. More than half of the houses in this area are

of mud, a lesser number of houses is built of red bricks and very few of cement. In contrast, with the other survey areas, El Sahafa town appears as the area where more than three quarters of the buildings are made of red bricks, and red bricks and cement and very few built of mud. Many residential buildings can be observed as comprising two or three stories. The area of El Haj Yousif is characterized by the dominance of red-brick houses and fewer cement houses in the inner (western side) part of it, and in its outer (eastern) skirts is dominated by mud houses and huts. In the area of El Geraif Gharb, the dominant house-building material is the red bricks for more than half of its buildings, but you can find mud houses and fewer cement houses.

Neither of the four survey areas is a squatter settlement, and all are authorised residential areas. Generally, all residential lands inside the urban people's councils of the three cities is owned and controlled by the government. The housing authorities plan and distribute these areas according to the need and under different rules and criteria. For example, a person would be listed as deserving a residential piece of land if he or she had been residing in the city for, say, the last ten years and had his or her family with them, and had a permanent employment in the city (Fawzi, 1980). But in practice, the land can be sold by that person after he receives it for a much higher price than that he paid for the government. Therefore, not always the house owner is the original land buyer, and not every house occupier is the house owner. The average area allotted for each family varies between an average of 400 to 600 square metres. The price per square metre also varies from one area to another and according to the class of the land, whether it is classified as a first, second or third class. This classification has something to do with the location of the piece of land and its distance from the city centre, transportation and other

social services.

Given these facts, it is clear that the chosen areas are located within the largest people's councils of each of the three cities. Also, these areas vary in their locations within the capital city and in their building materials and structures. This is significant to the outcome of the survey as a whole since the selected sample of population is expected to represent a wider range of migrant population in the capital city. Therefore, the *whole sample* (regardless of the area of the survey) will serve as a means of generalizing the demographic and socio-economic characteristics for a significant proportion of the whole migrant population in the three capital city.

2. After selecting the four areas, a systematic random sampling was followed in each area; that is, to start by knocking the door of any house, then the third, the fifth, the seventh and so on. If a household chosen by the systematic random sampling method was found to contain no migrant head of household, then the interviewer proceeded to the next household in the sample.
3. The definition of the household in the survey was that adopted in the 1983 census where it was defined as *a unit consisting of a group of related or unrelated individuals who normally share living quarters and eat together* (PCO, 1989,17). On the other hand, family is defined in the survey as a unit in which members are related by blood or marriage. To be include in the survey, a household had to contain at least one family nucleus such as husband and wife; or husband, wife and their children (see appendix B for more definitions of other concepts).

The total number of households approached in the survey was 554, of which 350 were found to satisfy the definition of a **migrant household**. A household

was classified as **migrant** if and only if the head was born in a province other than that of Khartoum. Households not subjected to the full questionnaire survey included those with non-migrant heads, those whose heads were absent and -in a few cases, those which refused to take part. The survey met few difficulties, largely presumably because of the two weeks (prior to the actual field work) spent on planning for the survey and care taken in drawing the sample and sample areas. The responses from the 350 households were excellent, particularly in part B, and they provided usable information.

The questionnaire was divided into two parts:

1. Part A:

This part included questions on age, sex, type of birth place, literacy, and educational level. These questions were to be answered, (either by the head of the household or by the member himself) for all the members. After data were collected and in the stage of revision and refinement, the answers from 84 households were discarded because of the inconsistency of some, and damage of others later in computer. The 266 households which remained have provided very useful and indicative results.

2. Part B:

This part of the questionnaire was designed to be answered only by the heads of the households. The questions were formulated to give answers useful in the analysis of the socio-economic parameters involved in the migration process, and the effect of migration in creating new jobs for and improving the welfare of the migrants. It included questions about date of arrival in the city, place of residence before migration, number of family members who accompanied the head or joined

later. Questions were also asked about current employment status (at time of the survey) and status before migration, and the type of job before and after migration. Urban-rural links were also examined to investigate the type and degree of that link and its economic and social impact on those left behind in areas of origins. Above all, the questions were designed to find the reasons behind migration to the city. Other questions were also necessary to link and lead the discussion towards the subsequent questions. Unlike part A, this part was almost 100% complete.

The comments and remarks of the respondents and the different opinions which appeared during the discussions were recorded and are made use of in this chapter. These have been of considerable value since many points were raised in connection with most of the questions in the questionnaire. Sometimes even the exact words of some respondents are quoted. As 80% of the households in the sample were questioned outside working hours, the interviews became quite ceremonial occasions. Almost all members of the household currently resident in the city were usually present and general remarks were made to the head of the household. No difficulties were met in obtaining answers to the questions in both parts of the questionnaire.

Before discussing the results of the survey, some general remarks are necessary. As expected in any survey, the results are subject to errors of response, processing and sampling variability. It is never claimed that the proportion selected constitutes an adequate sample. A proper random sample would have extended the project beyond the resources available for this investigation. Every effort was made to keep the response and processing errors under control at each step. Reviews of the interviewers' work, verification of manual coding and editing, checking of tabulated figures, etc., reduced these errors to an acceptably low level. As far as

the sampling variability is concerned, the sampling techniques adopted in the survey ensure the minimum possible sampling errors under the resource constraint. Despite all these efforts, the reader should be cautious about the following points:

- i. The outcomes of the survey are estimates based on a sample of households. Since such estimates are subject to sampling errors, one should not attribute a hundred per cent material significance to the exact numerical values of any estimate.
- ii. The results of this survey are not necessarily directly comparable with those from any other surveys. This is due to differences in the dates at which surveys were carried out, in the coverage and in the methods of analysis used.

5.7 Structure of Migrant Households:

- Size and composition

As stated above, the total responses in this part (A) were collected from 266 households. The total population living in these households was 1741 giving an average household size of 6.5 persons. Of this total, males numbered 945 (54.3%) and females 796 (45.7%). Table 5.5 shows that some 36% of the sample were less than 15 years of age, divided equally between males and females. Another 36.1% were in the age group 15-29 where males were 55% giving a sex ratio of 120 males per 100 females. This age group is the largest and, if combined with the previous one, more than two thirds of the population in the sample were under 30 years of age. Those between 30 and 44 constitute only 17.5% with males forming 58% of the age group. In the fourth age group, 45-59, the share was further reduced to 7.5%. Only 2.9% were of 60 years of age and over. The average age was 23 for

Table 5.5: Age Groups, Sex, and Sex Ratios of the Migrant Household Residents in the National Capital

Age Groups	Total	Males	Females	Sex Ratios	% Age Group Population
Less than 15 Years	626	313	313	100	36.0
15 - 29	629	344	285	121	36.1
30 - 44	304	176	128	138	17.4
45 - 59	130	73	57	128	7.5
60 +	52	39	13	300	3.0
All Ages	1741	945	796	119	100.0

Source: Migrant Households Survey in Khartoum, 1989

Table 5.6: Absolute and Relative Numbers of the Members of the Migrant Households in Khartoum

Place of Birth	Total		Sex			
	Numbers	Percentage	Males	Females	% Males	% Females
Urban	1103	63.4	570	533	60.3	67.0
Rural	634	36.4	372	262	39.4	32.9
Abroad	4	00.2	3	1	00.3	00.1
All	1741	100.0	945	796	100.0	100.0

Source: Migrant Households Survey in Khartoum, 1989

males and 22 for females. Those under seven years of age (i.e. pre-school age) were 148 males and 134 females; some 16.2% of the total.

Table 5.6 indicates the distribution of the sample population by sex and place of birth. It shows that some 63.4% were born in urban areas, 36.4% in rural areas and only 0.2% abroad.

Some 8.7% of the 1103 individuals of urban origin recorded in the survey are heads of households, 46% are children below 15 years of age, and 4.1% are parents of the heads of households. The remaining 41.2% are other relatives and friends living with the head of the household. For the 634 individuals of rural origin some 26.8% are heads, 18% are children and 2.8% are parents. Other relatives and friends in this category accounts for a higher rate than that in the urban category. Some 52.4% of the sample population of rural background are counted as other relatives and friends members of the household. These figures may be compared with a survey in the city conducted by the ILO in 1974 which showed that the proportion of *other relatives and friends* was 45.9% for those of rural background and 42.1% for those of urban background.

These statistics imply that "other relatives" and "friends" constituted a very high proportion of household membership in 1974 and an even higher proportion in 1989. The presence of friends and family members is thus acting as a considerable force in attracting new migrants from other rural and urban areas. It is probably through these friends and family members that potential migrants get their information about income and job opportunities in Khartoum. In many cases, as we will see later in this chapter, shelter, financial help, finding a job and other sorts of help are provided freely for most of the migrants by those relatives, hence the migration cost is greatly reduced. In fact some migrants enjoy a better life this way than they were used to at home. In any case, the existence and presence of relatives and friends is some assurance against adversity, at least during the settling-in period.

Males were heavily predominant in all three place of birth categories in Table 5.6. For a further refinement, some 43.8% (763) of the sample population were of

urban origin but had been born in Khartoum (mainly children of the head or of other migrant members of the household born in the city). If these are excluded, then the remaining population of urban origin (340) could be identified as genuine migrants, born in urban areas but outside Khartoum province. Those of rural background were all from provinces other than Khartoum. About 96 of the 266 heads of household interviewed were from urban backgrounds. If we assume that migrants from urban backgrounds live only with heads of households from urban backgrounds then the average size of those households will be 3.5 persons (i.e. 340/96). The remaining 170 heads of households were from rural origins and they host a total of 634 rural individuals giving an average size of 3.7. These outcomes are not strong because in reality many heads of households of rural background host other individuals born in urban areas and vice versa. Therefore, the overall size of households in the sample remains the most indicative one.

5.8 Literacy and Educational Attainment

Of the 945 males in the sample, 148 were below the age of 7³ while in the female population this age group amounts to 134. The literacy rates are computed in Table 5.7 for both sexes aged 7 and over. It is clear that the literacy rates are high among both sexes when compared with those prevailing in their home provinces. For males of 7 years and over the rate is as high as 91.7%, and for females 72.8%. For those of 15 years and over the literacy rates are somewhat lower at 89.5% for males and 64.3% for females. This rate (for those over 15) was 70% for migrant males in 1971 while the same rate for the corresponding age group was only 10% in their place of birth (Galal al Din, 1979). The literacy rates slope

³ The lowest age to attend primary education is 7 years in the Sudan. About 31 individuals who were literate but of less than 7 years of age are omitted from Table 4.7 but included in Table 5.8

Table 5.7: Literacy Rates for Both Sexes by Age Groups

Sex and Age Groups	Total Numbers	No. of Literate People	Literacy Rates
Males			
07 years and Over	793	727	91.7%
15 years and Over	650	582	89.5%
30 years and over	291	242	83.2%
Females			
07 years and over	636	463	72.8%
15 years and over	462	297	64.3%
30 years and over	193	079	40.9%

Source: Migrant Household Survey in Khartoum, 1989

down to reach 83.2% for males and 40.9% for females 40 years of age and over.

These literacy rates reflect the great differences in the educational opportunities and attainment between the two sexes. The discrepancies are clear from Table 5.8 which reports the levels of education of the members of the migrant households. At all levels of education, males have higher opportunities and educational attainment than females. These higher figures cannot be attributed solely to the greater numbers of males in the sample; rather, there are other factors behind. The levels of education include both those who completed the level and those who did not. The higher the level of education the wider the gap between males and females educational attainment.

Table 5.9 reports the significant educational disparities between different regions of the country. Although rates of schooling and literacy have increased, about half of primary school age children remained unadmitted to schools in the

Table 5.8: Educational Levels for Both Sexes of Seven Years of Age and Over: 1989

Level Of Education	Total Numbers	Sex	
		Males	Females
Primary			
Numbers	709	375	334
%		52.9	47.1
Intermediate			
Numbers	259	138	121
%		53.3	46.7
Secondary			
Numbers	311	179	132
%		57.6	42.4
Post Secondary			
Numbers	181	128	053
%		70.7	29.3
All Levels			
Numbers	1460	820	640
%		56.2	43.8

Source: Migrant Household Survey in Khartoum, 1989

Sudan, a condition that could be attributed to two main reasons. First, there might be insufficient enrolment opportunities and second, the social and economic conditions in the country, particularly in the rural areas, compel large numbers of families to keep their children to help in feeding the family and at the same time to avoid the material cost of education. In all cases the central government is held responsible for the problem. In 1983/84 only 49.8% of primary, 26% of intermediate, and 14.8% of secondary school age population were provided with enrolment opportunities. Of these numbers female enrolment rates were 39%, 23% and 11%

respectively. High enrolment rates are associated with the most urbanised regions since educational services are urban oriented and centred. Most of the rural areas have much poorer basic services; a deprivation reflected in low enrolment levels, especially among females. This imbalance and bias in terms of educational and other social services contributed significantly to the increasing flow of migrants towards urban centres and particularly towards Khartoum. Therefore, the objective of education is reversed; instead of staying in their areas and participating in changing the socio-economic and political structures, the educated make their way towards cities and towns, depriving their rural areas from one of the most effective elements needed to improve their conditions.

Statistically, we used stepwise regression method to find the degree of association between the explanatory variables of age, sex, and place of birth and the dependent dummy variable of literacy. The method dropped out the factor of place of birth and considered it as a factor that has no significant effect on literacy rates among the members of the migrant households as the other two variables have. This can be attributed to the selective nature of migration itself. The educated in both urban and rural areas have the highest propensity to migrate; therefore, they appear as literate in the model, regardless of the type place of origin. Thus the significance of place of birth was reduced in this model.

The other two factors of age and sex appear to be of significant strength to affect literacy rates among the members of the migrant households. Among those members the estimate parameter of age showed a negative sign, ($\hat{b}_1 = -1.167$). This indicates that the older the person the lower the probability of being literate. This result has a historical justification; as we go back in previous years of the education services in the country as a whole we realize that there were few schools,

Table 5.9: % School Enrolment in Selected Regions

Regions	Primary		Intermediate		Secondary	
	Males	Females	Males	Females	Males	Females
Eastern	41.9	35.2	22.9	19.5	15.2	10.9
Central	71.7	60.9	41.5	34.6	26.0	15.4
Kordofan	49.2	28.7	23.2	15.0	14.4	06.1
Darfur	40.7	22.7	17.8	10.8	09.4	03.6
Upper Nile	23.8	08.1	08.5	03.1	05.2	01.3
Bahr al Ghazal	19.4	03.3	05.3	01.7	05.0	01.2

Source: Educational Statistics 1983/84

even primary schools, in the country. This made it difficult for large numbers of people at that time (who are now old) to obtain any sort of formal education. The standard error of the estimated parameter of age shows a very low magnitude, ($\hat{\sigma}_{b_1} = 0.0633$) implying that our parameter estimate is statistically significant at all levels of significance for a two tailed test.

On the other hand, sex is found to be statistically significant in its effect on the literacy rate ($\hat{b}_2 = 0.266$), and its standard error of its estimated parameter is $\hat{\sigma}_{b_2} = 0.133$. The religious and cultural values were and still are having great effects on the education of females. Even the education system and services adopted by governments discriminate between the two sexes and favour the education of males. The adjusted coefficient of multiple determination of the equation in question showed a small value of $R^2 = 0.166$. This coefficient shows that only a small part of the variation in literacy level is associated with sex and age and indicates that other factors not shown in the equation are responsible for variations in literacy rates. These factors comprise multi-cultural, social, economic and political aspects.

Generally speaking, no suitable education programmes have as yet been developed for populations that are largely rural and illiterate. The structure, method, and content of education appear to have little relevance to the local context and are criticised by many specialists as being based on foreign models. This disharmony takes a wide range of forms, such as the adoption of inappropriate curricula initiated, imported or decided upon by an elite out of the touch with the rural masses. Consequently, ill-prepared pupils work their way through the school system. Also, the poor quality of the educational system is tangible in the complete absence or inadequacy of educational guidance and services, particularly for females. Concentration on academic aspects neglects the value of practical activities and manual work associated with occupations vital to the country's economic and social advancement. Technical education has no leading, if any, role in promoting the traditional agricultural and industrial activities practised by the masses of people in the rural areas; if it had played that role then it could have tied large numbers of people to their places of origins and made them participate in the improvement of the socio-economic and cultural conditions of the area. As a result, almost all of the educated people plan to get an office job, which is most likely to be in an urban centre, and so thousands move towards small and large urban centres.

All the above results were derived from the information collected from members of the migrant households. The analysis which follows reports the different results derived from part B in the questionnaire. These results are exclusively associated with the 350 male heads of the migrant households interviewed in the sample. These heads had arrived in the city of Khartoum and stayed there as migrant citizens at different times; one migrant had been in the city since 1915 and others

arrived only in 1987. Of the 350 heads, some 42.6% had arrived in the city before 1970. The remaining 57.4% had arrived in the period 1970 - 1987. That is to say, in a period of 54 years (1915-1969) the number of the migrant heads was less than that witnessed in the other period of 17 years, (1970-1987). This outcome is plain because of the mere fact that a high proportion of those who arrived before 1970 are likely to have died and also because of the increasing pace of migration to Khartoum in the past two decades. Some 126 heads were from urban origins while the rest were from rural backgrounds. All heads of households in the sample will be assumed as originating from rural areas; this is because of two factors:

1. There is no 'significant' difference in the socio-economic features of the rural and the urban heads in the survey since most of the latter group are classified as urban but in fact most of them (96%) were from villages categorized as urban because of their size, commercial or administrative characteristics but are 'rural' in every aspect.
2. It is complicated and difficult to cross tabulate the place of birth (in part A of the questionnaire) of the heads with any other characteristics (in part B). This is because of the design of the survey data in the computer and limitations of the computer software used in the analysis.

5.9 Occupational Contrast of the Heads

The most important factor in the creation of a rural-urban migration stream is the occupational difference between village and town; in the former most people are farmers while in the latter they are not. In the town nearly all workers are paid substantially in cash while in the village these numbers are relatively small. Almost 80% of the rural population in the Sudan is agrarian in one form or an-

other. It is precisely this homogeneity of the village population, the fact that most men are farmers and most women are concerned both with domestic duties and farming, that makes rural occupational activity an unsatisfactory index for predicting migration behaviour. There is, however, some evidence of the influence of occupation on migrational behaviour.

About 262 (74.9%) of the 350 heads of households interviewed reported having worked in their areas of origin before they migrated to the city. 93.1% claimed to be working in the city at the time of the survey. Thus it seems that unemployment rates among the migrants dropped after they settled themselves in the city, from 25.1% to 6.9%. But, what type of work was performed before and after migration? This question is important to investigate because its answer will give a clue to evaluate the productivity and value of these jobs. If found productive after migration then the result will indicate a positive sign that the migration process is for the economic and social welfare of both migrants and society.

Table 5.10 reports the current and previous jobs (at home) of the migrants in the sample. The jobs in the table are divided into security, farmers, officials, skilled and unskilled labour force, and those who were idle and unemployed. Security jobs are meant to include police and military staff at all ranks. Farmers include every member whose work was associated with the agricultural field directly as farmers, peasants, agriculture labourers and the like. In the 'officials' category a variety of jobs were included, e.g. teachers, medical staff, clerical jobs, and all other white collar jobs. The 'skilled labourers' category comprises all those who have occupations that need skill and talent; it includes painters, carpenters, car mechanics, electricians, bicycle repairers, plumbers, etc.. The unskilled labourers include all those who perform marginal jobs that need no talent or training such

Table 5.10: Cross Tabulation of Current and Previous Jobs at Home for the Migrant Heads of Households

Previous Job	Current Job in the City						Totals	
	Security	Farmers	Officials	Skilled	Unskilled	Unemployed	Numbers	%
Security	07	00	01	09	03	00	020	5.7%
Farmers	06	01	00	32	81	04	124	35.4%
Officials	00	00	06	01	03	00	010	2.9%
Skilled	00	00	00	55	03	02	060	17.0%
Unskilled	02	00	00	06	30	10	048	14%
Unemployed	25	00	04	21	30	08	088	25.0%
Totals	40	01	11	124	150	24	350	100%
%	11.4%	0.3%	3.1%	35.4%	42.9%	6.9%	100%	100%

Source: Migrant Household Survey in Khartoum, 1989

as car washers, shoe polishers, street vendors, tea makers, table waiters and so on.

This survey showed that some 76% of those who were working both before and after migration were performing a job which was different, at least in title, from that performed at home. Only 24% were working in the same type of work. Of those employed in the city at the time of the interview, some 42% stated that they had moved at least once from one job to another in the city. It can be seen that, when moving from their origins, migrants were prepared to work in a job different from that experienced at home. As is clear from the table, the largest group of migrant heads (35.4%) had worked in agriculture before migrating; but only one person was reported as working in this sector after migration to the city. The remaining persons in the category had distributed themselves between different types of work. Some 4.8% of them entered the security category, 25.8% worked as skilled workers, 3% stayed unemployed, and the majority, 65.3%, became unskilled

labourers. Of the 60 migrants performing skilled types of work in their place of origin, only 8% changed to unskilled type of work or stayed unemployed in the city. The other 92% joined the skilled in Khartoum. The unskilled labour force was 14% of the force before migration, but increased to 42.9% after migration. This reflects the fact that the propensity to migrate to the city is high to the extent that many migrants were ready to accept any marginal job in the city even if this involved a shift to unskilled employment.

- Migrants and the informal sector

The private sector appears to absorb the smallest proportion of migrants. Some 19% of the sample were working in the private sector, 30% in the public sector, and the bulk were in the 'informal sector'. Despite the time gap, it was found in a similar survey in the city in 1971 that 60% of the migrants had joined the informal sector. The skilled and/or the unskilled group of migrant workers are found joining the already expanding *informal sector*. By informal sector we mean the portion of the economy which is composed of people operating or working in small businesses that lack formal government recognition, registration, and support for their enterprises. Also, this sector has no access to formal credit institutions, earns low incomes and has no employment security.

This phenomenon of the 'informal sector' has characterised most of the economies of the less developed countries. Most of these countries, and Sudan is no exception, have been advised since the 1950's to achieve high economic growth through industrialization and modernization. This scheme has succeeded in attracting large numbers of rural 'surplus' labour force but failed to absorb them into the urban productive labour force. Consequently, the numbers of unemployed and underem-

ployed started to rise in the urban sector. As an alternative, those unemployed began to seek another way of living anyhow. By creating their own marginal jobs the informal sector emerged. Despite the numerous constraints, the informal sector in the Sudan has expanded and continues to expand without government support and despite government harassment.

The expansion of this sector can also be attributed to its nature. It is characterised by ease of entry and job change, labour intensive methods of production and distribution, traditional or easily acquired skills, low wages and poor profit margins, and the use of essentially local materials and simple tools and machinery. These characteristics enabled and motivated large numbers of migrants to enter the sector. The economic importance of the sector is advocated by some and criticised by other economists and sociologists. The former group argue that this sector provides the basic needs of those who work in it and those whom it serves. It offers them a variety of goods and services of daily needs. The advocates go even further to claim that *life will be at standstill economically and even socially if the activities of this sector are taken away from any society. Without this sector urban life and its fabric...would be impossible. This sector also offers a huge potential for development progress. The growth process can be led by strengthening and widening this sector* (Nur, 1989, 2). The advocates called for official recognition and assistance such as provision of easier access to credit, training to improve skills, the provision of better tools and production techniques, etc..

The other group of critics have called for the adoption of tough government policies to eliminate the informal sector and to help all those working in it to return home and perform productive type of work. This group claims that this sector is unproductive and adds nothing to the national income, and it deprives the rural

areas of its manpower needed most to overcome the rural backwardness. (Galal al Din, 1979). Also it is complained that this sector adds to the rising levels of unemployment in urban centres in the Sudan, and increases the pressure on the urban infrastructure.

In this author's opinion, neither of the two extremes is completely correct; the real practical and feasible solution to the controversy regarding the informal sector lies between the two opinions. That is to say, this sector, which attracts the migrant population, should be preserved to an optimum level where only those who provide 'real' goods and services are to be recognised and helped. On the other hand, to curb migration flows from rural to urban areas a number of integrated policies are essential to be implemented by both government and public effort. These policies can be broadly stated as follows:

- Serious efforts should be exerted to reduce the wide socio-economic disparities between rural and urban areas in general and between Khartoum and other regions of the country in particular.
- Investment policies should be directed to inducing private capital to move to the rural areas and invest in its various potentialities.
- Improvement of the rural infrastructure, especially roads, should be undertaken to increase the degree of interaction and hence create new markets and new jobs and products.
- Efforts should be made to motivate all types of rural production particularly agriculture, animal husbandry and handicrafts. This motivation can take different forms such as providing encouraging prices for rural products, promotion of the small attainable type of agro-industry, e.g. forage industry, industries of

milk and meat by-products, industries to promote and improve production of traditional production tools used in agriculture,..etc..

If implemented, these policies would lead to a reduction in migration flows towards the urban centres and would help to tie rural migrants to their home areas. In this context, it is not the case that population pressures will then be felt in the rural areas because of the increasing numbers of stayers in the rural areas resulting from these recommended policies. Because of the vastness and potential richness of the country, these pressures will not be felt, at least in the foreseeable future.

5.10 Rural-Urban Links

As in many other African countries, the Sudanese rural-urban migrants keep in contact with their village people even after their settlement in the town. When they reach the city, find their jobs and establish themselves in reasonably satisfactory housing, the operation is not over for them. Very few of them begin a new life and forget their old one. Quite the reverse, many of them continue links of all kinds with the village. Most of the migrants, if not all, pay frequent visits to their villages to pay condolences on deaths, congratulations on happy occasions or even to pay respect and regard to the elders left behind or to see and check on their investments back at home. In addition, remittances in kind and cash make their way from the city to the village to help those staying behind. As stated by Jones (1981), *migrants (in the city) still maintain strong ties with their rural origins, but they are more reluctant to make periodic returns of long duration, because of the difficulty of regaining urban employment. Migration to the cities is therefore becoming more permanent, with the urban worker more commonly being joined by*

his family (p.247).

It is these aspects which make the Sudanese rural-urban migration in some ways potentially far more significant for social and economic change than has been the case with similar movements in the western world. The sophistication of the city is transferred deliberately or inadvertently to the village in different forms of goods, services and money. Most villagers on the other hand believe that the town is the source of modern things and, to some, of 'civilization'. To investigate these links further, additional questions were asked on various aspects of this relationship.

5.10.1 Knowledge about the town

It is debatable whether migrants go to the town as a result of factual knowledge about town life and rural-urban differences, or whether they are attracted only by the false pictures arising from the faulty communications and inability of persons unfamiliar with town life to interpret correctly the received information. During the discussions, almost all the migrant heads of the households stated that they had known, any how, about the urban life prior their migration. Most of them also stated that they had visited the national capital at least once before they made their final decision to migrate. These prior visits increased their knowledge about the city, but the primary knowledge was obtained from relatives living in town and friends living or having lived in town.

Table 5.11 shows the responses of the migrants to the question on the source of information and basic knowledge about the city. Surprisingly, the information received from mass media is small. Only 8% of the migrants in question have derived their first basic information about the town (Khartoum) from the

Table 5.11: Sources of Information About the Town

Source	Numbers	Percentage
Relatives and Friends	306	87.4%
Mass Media	28	8.00%
Others	16	4.60%

Source: Migrant Household Survey in Khartoum, 1989

mass media. This can not be entirely attributed to the educational and literacy standards in the sending areas, but also to the poor spread of radio, television transmission and newspapers. By far the largest proportion (87.4%) of the respondents stated that 'relatives' and 'friends' in the town were their primary source of knowledge; Beaujeu-Garnier (1982) called such a motivation as the *appeal of the group*. She mentioned that it has been observed that migrants from village, from town, a region or a country, will often encourage one another in the act of migration and re-form as a group at the end of the journey. According to Beaujeu-Garnier, when the news from the departed son or friend is good and promising, the migration process increases and more individuals follow for no other reason than the fellow-feelings which unite families or friends. On the other hand, only 4.6% stated 'others' as their source. 'Others' largely means mates at schools or 'people' have told them.

The next step was the plan for the final journey. Once the decision to migrate has been made, most migrants plan to save some money to meet the travelling cost and cost of staying in the town before obtaining work, even if they are going to be invited by relatives and friends. The former cost was found to be of no great importance as the travelling cost was relatively cheap. Table 4.12 shows private

savings as the main source of cash to meet the initial cost of migration. 69.7% of the respondents referred to private savings, 19.7% mentioned family support, and only 1.1% have borrowed that initial cost. Those who mentioned 'others' as the main source from which they derived their initial cost include those government or non government employees who got official 'free' tickets or 'pass licence' to the town paid by their employers. Some 67.7% of respondents replied that they were accompanied by no members of their families. But 52.6% of them were joined later by other members of the family. Of these, some 54.9% were joined by one, two, three or four members. The other 45.1% were joined later by more than four and up to eleven family members.

In total, 531 persons either accompanied the respondents from the start (49.2%) or joined them later (50.8%). That is, every 10 of the 350 migrants brought about 15 other persons in their wake. These figures reflect the strong effect of 'relatives' in attracting others to the town. By this procedure migration risks and cost are reduced to the minimum, especially upon arrival.

5.10.2 Help in the town

Upon arrival the migrant labour force faces a range of problems, the most important of which is accommodation. Having no job or knowledge of the labour market this matter is crucial. They need a period, while they are looking for a job, to stay in cheap, if not free, accommodation. It is advantageous if they can find this accommodation with someone who is sympathetic to their need for a job and whose knowledge of the job market or even his personal intervention can help secure employment. Above all, adaptation to the town life style needs time to learn the new behaviour. In such an atmosphere there is much to be said for staying

Table 5.12: Types of Help Offered to the New Arrivals in the Town

Type of Help	Responses	
	Numbers	%
Free Housing	287	41%
Free Meals	183	26%
Finding Job	171	24%
Financial Help	053	08%
Others	006	01%
All Types	700	100%

Source: Migrant Households Survey in Khartoum, 1989

with someone who can be of great help; but, who is this person?. To answer this question two questions were asked of the migrants interviewed, the first was *who helped you in the town upon arrival?* and if helped, *what type of help?*.

Not surprisingly, some 80.3% mentioned that their 'relatives', in most of the cases, and friends were their supporters at the time of arrival, and only 10.3% mentioned other sources such as government sponsorship or educational institutions, and in rare cases some mentioned that they were picked by chance by business people to work with them as guards or as construction workers. The remaining 9.4% claimed that they supported themselves and nobody did them any favour. Thus it is clear that chain migration has become strongly important as a mechanism for moving people from rural to urban areas; indeed, it explains the accelerated rates of urbanization in the country. At the same time, the mechanism of ensuring a balanced volume and quality of labour flow had little effect.

Table 5.12 reflects the readiness of the urban migrants to help each other. Every

respondent was given the chance of listing up to the most important three types of help they received upon arrival. Some 41% of the respondents mentioned that they were offered free lodging until they found their jobs, and for a considerable number even after they got their jobs. This free lodging was accompanied by free meals for almost two thirds of those offered free housing; some 26% received this type of help. Through this procedure migration risk and cost are reduced to the minimum as many of the migrants found places to put their heads and food to fill their stomachs. The helpers themselves feel that the least they can do to help their relatives arriving in the city is to provide transitional board and help locate a job. From the discussions and comments made during the interviews, one can state that about half of the migrant heads of households were prepared to do all this for close relatives, and a somewhat smaller fraction of them was ready to provide it even to other friends and fellow villagers as well. Some 24% of the migrants received help in finding a job. Financial and 'other' types of help were only stated by 9%.

Generally, most of the migrants feel that their only obligation towards fellow villagers is to devote some time and to use their superior knowledge of the town in searching for jobs, contacting others and at least advising. The closer the relationship the greater the readiness to help. Financial help, one can say, is confined to very close relatives. Nevertheless, sufficient help is provided to keep the process of chain migration going on and alive. The helpers, in most cases, wait for no material repayment for their help, rather they look forward to improving their social image within their communities in their areas of origin.

5.10.3 Remittances and investments at home

The most important economic aspect of migration to the town is the counter

Table 5.13: Volume of Financial Remittances by the Town Migrants Back to Their Homes Per Year

Volume in £s	Numbers	%
0100 - 1000	66	45%
1200 - 2000	36	25%
2400 - 5000	30	21%
6000 & over	14	09%
All Groups	146	100%

Source: Migrant Household Survey in Khartoum, 1989

flow of remitted money and goods which characterises the migration stream. Such flows of wealth are undoubtedly important, not only to the stayers behind but also to the migrants themselves. In the interviews, some 98% answered 'Yes' when asked whether they had sent any money and/or goods back to their homes. But when the question was specific for money only, some 41.1% replied 'Yes' and the rest replied 'No'. Table 5.13 classifies⁴ the volume of money remitted back per year.

Remittances are not always fixed or regular. Many stated that they send their money irregularly or upon request. But generally, the stated figures are understood to be fairly regular. Thus the overall picture is clear; almost half of the respondents (some 45%) send between 100 and 1000 Sudanese pounds annually, (currently £s1000 = \$ 80 using the official rate of exchange). One quarter of the remittances stated were between £s 1200 - 2000. Some 21% were in the range £s 2400 - 5000; and only 9% were £s 6000 and over. Most of the remitted money is sent through a visiting relative, and very few through the post office.

⁴ The start and end of remittance classes in the table include the exact figures recorded in the survey

Table 5.14: Crosstabulation of Remittances by Date of Arrival

Remittances	Date of arrival in the City			
	Before 1970		After 1970	
	Numbers	%	Numbers	%
0100 - 1000	34	59.6%	32	36.0%
1200 - 2000	14	24.6%	22	24.7%
2400 - 5000	06	10.5%	24	27.0%
6000 +	03	05.3%	11	12.3%
Total	57	100%	89	100%

Source: Migrant Household Survey in Khartoum, 1989

In order to associate the degree of the link between the destination (Khartoum) and the area of origin, a table is constructed in which the date of arrival in the city (a date which reflects the length of stay in the city) is crosstabulated with the amount of money sent back home. Table 5.14 reports this crosstabulation. Our hypothesis was that the remitted money is expected to decrease in volume as someone stays longer in the town. The ties are expected to weaken as the period away from the area of origin increases. The null hypothesis, of course, states or suggests that money remitted is independent of the length of stay in the city. A chi-square test was made wherein the calculated $\chi^2 = 11.70$. Compared with the tabulated $\chi^2 = 11.34$ at 2% level of significance and 3 degrees of freedom, the null hypothesis was rejected. That is to say, our assumption and expectations were true, namely that the volume of money sent back home will decline as the length of time in the town increases.

These links are also maintained through other means, such as having another source of income at home, or through plans to invest savings back at home. Of the

350 migrants interviewed, about 173 (49.4%) stated that they had some source of income back at home. 90.8% of them mentioned land (agricultural) as their source, 5.8% mentioned animals (cattle, goats and sheep), and the remaining 3.4% stated 'other' sources of income. When asked whether they had any plans or intentions to invest their savings back at home, some 25.1% replied 'Yes, 70.9% replied 'No', and only 4% were uncertain. Of the 88 who replied 'Yes', 79.5% mentioned their desire to invest in agriculture, 8% in petty commercial activities, another 8% in 'other fields' which included building, reconstruction or furnishing of own house, getting married etc.. Only 5.7% were planning to invest in animals and transport. Apart from those who wanted to invest, the latter two respondent groups were deterred by one or both of the following two reasons:

- Lack of savings enough to enable them go into any investment plan and / or
- Lack of rewarding investment opportunities in the area of origin. Lack of electricity and transportation facilities necessary for any ambitious investment were mainly responsible for reducing investment opportunities, together with the other problems associated with the marketability and rewards of the investment products.

Thus, the rural-urban links will probably remain as important as they are or even stronger as long as the difference between the city and village is kept wide; but the flow of remittances in the form of money is expected to fall. This is because, even if the income differential between town and country side fails to close, the spread of cash-earning activities in the latter will certainly reduce the share of remittances in the total income of the rural household, and reduces the level of the need for that help. However, these trends, one can say, have already

started, particularly in the countryside where agricultural schemes are sited, as in the Central, Eastern and Northern regions, and agriculture is becoming more and more productive and profitable. Therefore, economic dependence on the town is expected to decline (in relative terms) further and more rapidly in areas like Gezira scheme.

5.11 Reasons Behind Migration

When the questionnaire was first designed on the basis of closed questions, the section dealing with the reasons and motives behind migration was treated with extra care. From the general observation of Sudanese society, and from the findings of contemporary research on this topic, the alternative answers were made to encompass and include almost all the pulling and pushing factors of migration. Sixteen alternative answers were carefully listed. The interviewees were left free to talk about major reasons behind migration and it was the interviewers who compared the statement of the respondent and fitted it within one of the sixteen alternative answers. The interviewers were trained to discuss these reasons and motives on the basis of contemporary migration to the town. Emphasis was placed on why people move nowadays, rather than on why past migration had taken place. Generally there are only two new reasons (war and drought) that came to the surface pushing people from their areas towards the town; the remaining reasons have long been major causes of migration. Respondents were encouraged to choose not more than four major pushing or pulling factors but some of them insisted that another one or two reasons were important to be stated; this too was recorded.

- **Urban pull and rural push**

As mentioned in chapter three, Lee (1970) listed four influential groups of

factors that affect the decision to migrate; these were factors associated with either areas of origin, areas of destination, intervening obstacles and personal factors. An attempt is made here to discuss these factors in relation to the migration process in Sudanese rural-urban migration. Table 5.15 summarizes the total responses to the questions of pull factors of migration. As expected, the economic motive emerges as the outstanding one. More than three quarters of the responses mentioned one of the three economic factors as attractive (+) factors. Some 26.3% of the all respondents stated that migration is induced by the high job opportunities in the town; another 25.4% stated higher wages prevailing in the town compared with those in the countryside, and another 24.4% stated that suitable jobs exists in the town and thus it pulls many migrants. Other non economic motives such as joining relatives, the expectation of better life and services, continuation of education and other factors collectively count for 23.9% of all responses. Those who mentioned 'others' meant to state that transference of job place from a rural area to the town also contributes to the increasing numbers of migrants in the town.

On the other hand, Table 5.16 reports the responses to the other side of the coin, the pushing factors (repulsive (-) factors according to Lee, 1970). Its findings came out as supporting those in the Table 5.15. The economic disparities between the town and village appear to be the main factor responsible for rural- urban migration. Some 82.9% of the total responses chose one of the three economic reasons of low job opportunities in the rural areas, lower wage rates and nonexistence of suitable jobs in the countryside. Other factors count for only 17.1%.

Of those who were both working before migration and at the time of the interview, some 81% reported that their current job was higher waged than that experienced at home. Only 10.7% stated that the current job had a lower wage

Table 5.15: Pull Factors of the Town

Pull Factors	Responses	
	Numbers	Percentages
High Job Opportunities	248	26.3%
Higher Wages	239	25.4%
Suitable Job	230	24.4%
Better Services	032	03.4%
Better Life	040	04.3
Continue Education	031	03.3%
Join Relatives	061	06.5%
Others	060	06.4%
All	941	100%

Source: Migrant Household Survey in Khartoum, 1989

rate, while another 8.3% stated that the two jobs were of equal wage rate.

Here, it is important to restate that the rural areas in the country contain both subsistence and mass production agriculture and have lost large number of workers largely due to rural-urban and international migration. Most of these areas are chronically depressed and left with very limited economic opportunities for their population. On the other hand, many more real and imagined economic opportunities are available in more prosperous urban centres. This contrast encourages people to move to take advantage of that urban prosperity. As a result, the pattern of migration streams to the town has been consistent and even increasing over the years. The list of pull and push factors and the sequence of importance of each one are clear from the percentages given. No single factor can be claimed as being the sole reason behind migration. The whole matrix of factors influences the decision to migrate. Additionally, an enthusiasm for something new and for new

Table 5.16: Push Factors of the Rural Areas

Pushing Factors	Responses	
	Numbers	Percentages
Low Job Opportunities	239	28.4%
Lower Wages	226	26.9%
No Suitable Jobs	232	27.6%
Poor Services	029	03.4%
Social Reasons	020	02.4%
Drought	013	01.6%
War	016	01.9%
Others	066	07.8%
All	841	100%

Source: *Migrant Households Survey in Khartoum, 1989*

tasks to undertake is a sentiment which animates many of the migrants. Also, the improvement in transportation services has a psychological as well as a material role in the migratory movement in the country, and in encouragement of many to move.

According to Peterson's (1958) distinctions, such rural-urban movement could be classified as an *innovative* type of migration because the main motive is to seek a new better way of life in the destination. The migration process could be also described as *free* as long as the individual migrant moves by his own will and choice. War and drought (political and natural forces) count for only 3.5% of causes of the move. But the city is not at all prepared to provide all these numbers with productive work opportunities, housing, health, educational and other services. The consequent result can be seen in the increasing levels of unemployment, pressures on housing, limited supplies of material goods, and services available in the

city. These pressures have been the main cause of the emergence of haphazard and shanty camps of houses around and even inside the national capital as well as in other towns of the country. Shortages of goods, and overload of schools, roads and other services have become a permanent phenomenon in the capital city of Khartoum. Even the ethics and values of the urban society have changed for the worse. Robbery, theft, begging, rape and other criminal offenses which were rarely heard of in the past increased. More than 25,000 vagabonds and wanderers were recently estimated living in the streets of the national capital compared with only 1454 in 1966 and 7454 in 1976 (El Khartoum daily, February 6 1989). In other words, urbanization and rural-urban migration have greatly affected the social as well as the economic environment of the capital city.

The adverse effects on sending areas are also immense. Migration distorts the demographic (age and sex) and educational structures of the population. As rural-urban migration is age, sex and education selective, the countryside is expected to suffer a series of problems which can be summarised as a reduction of reserves of educated and productive groups. This will result in a shortage of labour in rural agriculture and other activities. Also, the departure of young males increases the burden on the old and female populations of those left behind. All these are expected to reduce the marginal productivity of the agricultural workers, especially in traditional agriculture where strong muscles are needed in the labour intensive agricultural operations. All these, together with the prevailing low income levels in the countryside and the threat of civil war, drought and desertification encourage more people to migrate and join the masses of related and unrelated migrants in the city.

5.12 Migration Reward

To most of the Sudanese, the ancestral village remains the ultimate unexchangeable home. Does it hold true for today's migrants to the town or has the situation changed?. Before answering this question, it is worth mentioning that, during the interviews, few migrants mentioned that during their first journey to the town they assumed that the town would be their final home. Surprisingly, despite the personal links with their place of birth, many respondents reported that they would not return home for good. Some 83.7% of the sample interviewed stated that they would stay in the city, while only 16.3% stated that they would return home. Almost all of those who preferred to stay permanently in the city mentioned that their settlement in the city did not mean breaking ties with the village. As one of them said *I have my business here, own house, and children at schools..I will stay for good in the town, but the link with my village will never be broken; even after my death my body will be buried there and my children will keep in touch.*

It was assumed that the choice to stay is more likely to be associated with those who have stayed in the city for a long time. The length of the period was defined broadly as those arrived before 1970 and those arrived in the city after that time. Table 5.17 shows that 89.3% of those who arrived before 1970 preferred to stay, while 79.6% of those arrived after that date stated the same preference. It is clear that this preference is more dominant in the first period. At a 2.5% level of significance a chi-square test has accepted this assumption, and at the same time rejected the null hypothesis of independence of the choice to stay or return home from the length of the period of stay in the city. The calculated $\chi^2 = 5.169$ at one degree of freedom. This acceptance of our assumption supports the fact that

Table 5.17: Preference to Stay or Return by Length of Stay in Town

Preference	Stay		Return	
	Numbers	%	Numbers	%
Before 1970	133	89.3%	16	10.7%
After 1970	160	79.6%	41	20.4%
Total	293	83.7%	56	16.3%

Source: Migrant Household Survey in Khartoum, 1989

Table 5.18: Cross Tabulation of Preference to Stay or Return by Responses to Migration Reward

Preference	Have You Benefited from Migration?			Total
	Yes	No	Do not Know	
Stay	157	109	27	293
Return	014	039	04	057
Total	171	148	31	350
%	48.9	42.3	8.9	100

Source: Migrant Household Survey in Khartoum, 1989

the preference to stay or return home is associated with the personal, social, and economic surroundings of the migrant as well as with the length of the period of stay in the city.

This question of preference was also associated with another question, *Do you think migration is good and beneficial?* Table 5.18 shows the results of the cross tabulation. Some 48.9% stated that migration was good and of clear benefit to them, 42.3% stated the reverse, and only 8.8% were indifferent and stated that they could not judge. Of those who replied 'Yes', migration was good, 91.8%

were preferring to stay. The remaining 8.2% were those who preferred to return home; as one of them said .. *I can not deny it..migration has really rewarded me economically and socially..but it is not to the extent that makes me stay here for ever..home is home.* Of those who replied 'No', some 73.6% preferred to stay despite lack of benefit experienced as a result of their migration. The justification for this contradiction was presented by one of them in a simple statement, he said *Believe me or not..I am indebted now with few hundred pounds..I see no close opportunity to raise me up..but the road must be followed to the end..I prefer dying to going back empty handed.*

5.13 Summary and Conclusion

So far, throughout this chapter we have been discussing the concept of urbanization and rural-urban migration in the Sudan. It is seen that, as a demographic phenomenon, growth of urban centres in the country has been, and for a long time to come is likely to be, affected directly by the influx of migrants from the rural areas. The process of urbanization in the whole country was explained and the rural- urban migration was investigated on the basis of the 1983 census data and the migrant household survey in Khartoum in 1989. Volume of migration to the national capital and the demographic characteristics of the migrant households, and the factors responsible for migration were also covered in the discussion.

As mentioned before and from the start of this chapter, the objective was to use the sample of the migrant households interviewed in the four areas as a one representative of a considerable proportion of the whole migrant population to the Khartoum conurbation. Therefore, the tabulation of variables in the analysis is made without linking it to the survey areas from which the data were derived.

Despite the fact that the design of the data in computer does not permit us to describe the differences which may emerge from the survey between the four areas of the survey, it may be possible to explain some of the differences that would be expected to appear.

One of the differences to be expected is that the migration rates in each of the four areas may assume different values. If the male-selective nature of migration to the Khartoum conurbation is taken as granted, then one can assume that the degree of in-migration in each of these survey areas can be guessed by taking the sex ratio as an indicator. In such a condition, the survey area of El Geraif Gharb with a sex ratio of 129.5 can be regarded as the area (among the other 3 survey areas) that had experienced the highest rate of in-migration in 1983. In the second position comes Omdurman El Gadida (Umbadda) with a sex ratio of 126.5, in the third position comes El Haj Yousif (119.4) and last comes El Sahafa town with a sex ratio of 114.9.

Other differences could also be expected to emerge as a result of the differences in the standard levels of living in the four areas. That is to say, if the wellbeing and richness of an area can be deduced from its structure and the building materials of its houses, from the rates of house rents and from the availability of and access to social and other services then these may have their reflections on such variables as the degree of benefit from migration, the amount of remitted money sent back home and on the wish and will of the migrants to stay in the city or return home.

According to the description of buildings of houses in the four areas in section 5.6, El Sahafa town appears to be the top area, compared with the other three, in terms of the fact that most of the houses are built of red bricks and cement.

Additionally, the area charges the highest rates of house rents which in some cases amounts to more than £s1500 per month. These high rates are justified because of the location of El Sahafa town near the main town centre and availability of good transportation, education, health and other social services. In general, the other three areas carry similar characteristics of availability and access to fewer social services and in the average income levels. Therefore, the differences in this respect appear between El Sahafa town in the one hand, and the other three areas on the other.

If it is assumed that rich migrant households are found in the relative rich areas, then most of the households interviewed in town of El Sahafa could be expected to be well off and richer than those residing in the other three areas. Their remittances to their original areas, therefore, would be expected to be higher. Those who are living in Umbadda, El Geraif Gharb and El Haj Yousif are expected also to have their links with their areas of origin but the amounts of goods and/or money sent back home to be lower.

As we mentioned, more than 80% of the sample interviewed stated their wish to stay permanently in the town. The better the wellbeing of a migrant in the town the higher the probability of him choosing to stay to gain more and enjoy more, but the reverse may not hold true. In such a case, El Sahafa migrants who live in one of the best residential areas of the capital city and who are assumed, therefore, to be rich and better off are more expected to prefer to stay to enjoy more, and few (in relative terms) prefer to return.

Most of the migrant heads of households interviewed were from rural origins, while the remaining ones were from rural towns not so much different, in many

respects, from the former. Because of the homogeneity and resemblance of the rural origins of the migrants, the responses to the questions of reasons and factors behind migration, both push and pull, are expected to be fairly similar in the four survey areas. Job opportunities, wages, suitability of jobs and the rest of the other factors are almost same in rural areas apart from few exceptions. These responses are more expected to vary according to place of birth (urban or rural) of migrants than to the place of residence in the Three Towns.

At this point it is necessary to forward some general remarks on this matter. The scale of rural-urban migration in the Sudan, and the proportion it constitutes in all types of movements are not expected to fall in the nearest future. One can list different reasons to back this projection. Perhaps the most potent reason is that all the forces mentioned in the chapter are on the increase, especially education, wage rates, and job opportunity. Another thing is that agriculture in rural areas, mainly where the big agricultural schemes are located, is becoming less and less labour intensive. The use of herbicides and the mechanization of different agricultural operations has reduced the demand for the labour in certain operations like weeding and harvesting of groundnuts and sorghum. Thirdly, there is little sign of a fall in the rates of growth of Sudanese towns, and little evidence of a sudden decline in the rate at which urban employment can be increased.

Such rapid urbanization can be regarded as the direct product of social change and economic development in the country. Indirectly it can be attributed to the acceleration of rural-urban migration by high rates of population growth in rural areas following a decline in mortality rates. This has led to population pressure in certain rural areas where the agricultural area is strictly limited as in the Northern and Western regions. In the former region arable land along the Nile banks is

strictly delimited by the levels of the Nile water; in the Western region the arable as well as the pastoral areas are both totally dependent on the rates of rain fall. Drought and desertification have been major threats to pastures and agriculture; reductions in the area of land in use and its productivity in that region has immensely affected thousands, if not millions of people dependent on the land. In many cases population of entire villages were left with only one choice, migration. Thus, urbanization and rural-urban migration have been and will continue to be an integral part of the economic and social transition.

It is believed that individuals usually migrate to the town to improve their living standards. In Sudan, as in many other countries, the structure of capital and labour market is such that the unequal distribution of income arising from unequal distribution of productive assets is reinforced by the price mechanism. Credit and investment opportunities are always in favour of the urban centres where those who have access to them live.

To suggest a policy recommendation, these policies should have at their starting point the understanding that any radical solution to the problems of rapid urban growth and rural-urban migration and their social, economic, and demographic consequences can only be effective if it is made within the context of tackling questions of underdevelopment in the country as a whole. With this in mind, a series of broad policy recommendations can be suggested.

5.14 Recommendations

1. Any policy should understand the explicit relationship between urbanization and agricultural development in the Sudan.

2. Policies should be adopted in which attention is directed to rural development, where small and secondary towns are encouraged to emerge and expand. This will promote agricultural production by offering real market prices to the products of the area and also by offering new off-farm employment for the rural population. Ultimately, this would limit or slow down the growth of the largest cities and towns.
3. Industries which are at present heavily concentrated in the largest cities, namely Khartoum, Port Sudan and Wad Medani, should be dispersed to the smaller regional centres. The current concentration has not led to rapid and widespread economic growth, nor are the major cities capable of providing productive jobs to the masses of the people there.
4. All types of social services should be improved throughout the country and educational and health services in the countryside and employment in these sectors should be assigned to the local population as far as possible.

All these policies should be implemented without forgetting the battle against nature by attracting domestic and international efforts to combat drought and desertification.

Chapter VI

Seasonal Migration to the Agricultural Schemes: The Case of the Gezira Scheme

Many scholars have described population movements which involve no permanent change in the place of residence and thus cannot be classed as genuine migration (though such terms as seasonal or temporary migration appear frequently in the literature). Such moves may be either regular, made deliberately without coercion or compulsion, although perhaps not entirely voluntarily; or irregular, happening involuntarily as a result of natural, human or both factors (Prothero, 1985). Such types of mobility were also described by Mitchell (1959) and Prothero (1985) as 'circulation'. Zelinsky's (1971) definition of circulation has been widely quoted as

.. a great variety of movements, usually short-term, repetitive, or cyclic in nature, but all having in common the lack of any declared intentions of a permanent or long-lasting change of residence. (p. 411)

In this chapter, one type of Sudanese population movement will be discussed, and it lies within the context of Zelinsky's definition, namely seasonal migration to the Gezira scheme for cotton picking. Here we will investigate the nature of the seasonal labour movements to the scheme and its patterns which are associated with the agricultural production operations (mainly cotton picking). We will also try to relate the patterns of these movements to the conditions prevailing in the rural labour market, and the 'truth' of the seasonality of the movement will be

tested.

6.1 Sources of Data

The analysis in this chapter is based on two sources of data. The first source is the available statistics of the Sudan Gezira Board (SGB) the administrative body of the scheme, and other published sources. The second is a survey carried by the author in February 1989 in the Gezira and the Managil extension (see appendix C). That survey was divided into two parts:

- i. The first section was designed to count the number of labour force found picking cotton inside the tenancy at the time of the survey, and to collect information on some demographic characteristics of these labourers, to assess their productive and earning capacity and to relate the latter with their age groups (see appendix C.2.1 and C.2.2). It covered those working in the field at the time of the survey whether they were family, local, or seasonal migrant labour (these types of labour are discussed in section 6.3). This part covered about 280 tenancies around four villages in four blocks (see Figure 6.1 for the location of the Gezira Scheme and appendix C.1.3 for its divisions). Three blocks, El Komur, and El Radma (in the Centre) and Tayba (in Masselemia) are sited within the main Gezira, while the fourth block, Hamadnalla (in El Mikashfi) is in the El Managil extension. The tenancies were randomly selected, by just entering the tenancies where some people were working (see subsection 6.3.1 for the definition of tenancy). Table 6.1 shows the numbers of different types of labour interviewed inside the cotton tenancies. A total of 1974 labourers were surveyed of whom 14.9% were classified as family labour, 37.5% local labour and 47.6% seasonal migrant labour. The migrant workers were found in the two blocks

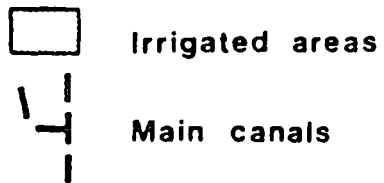
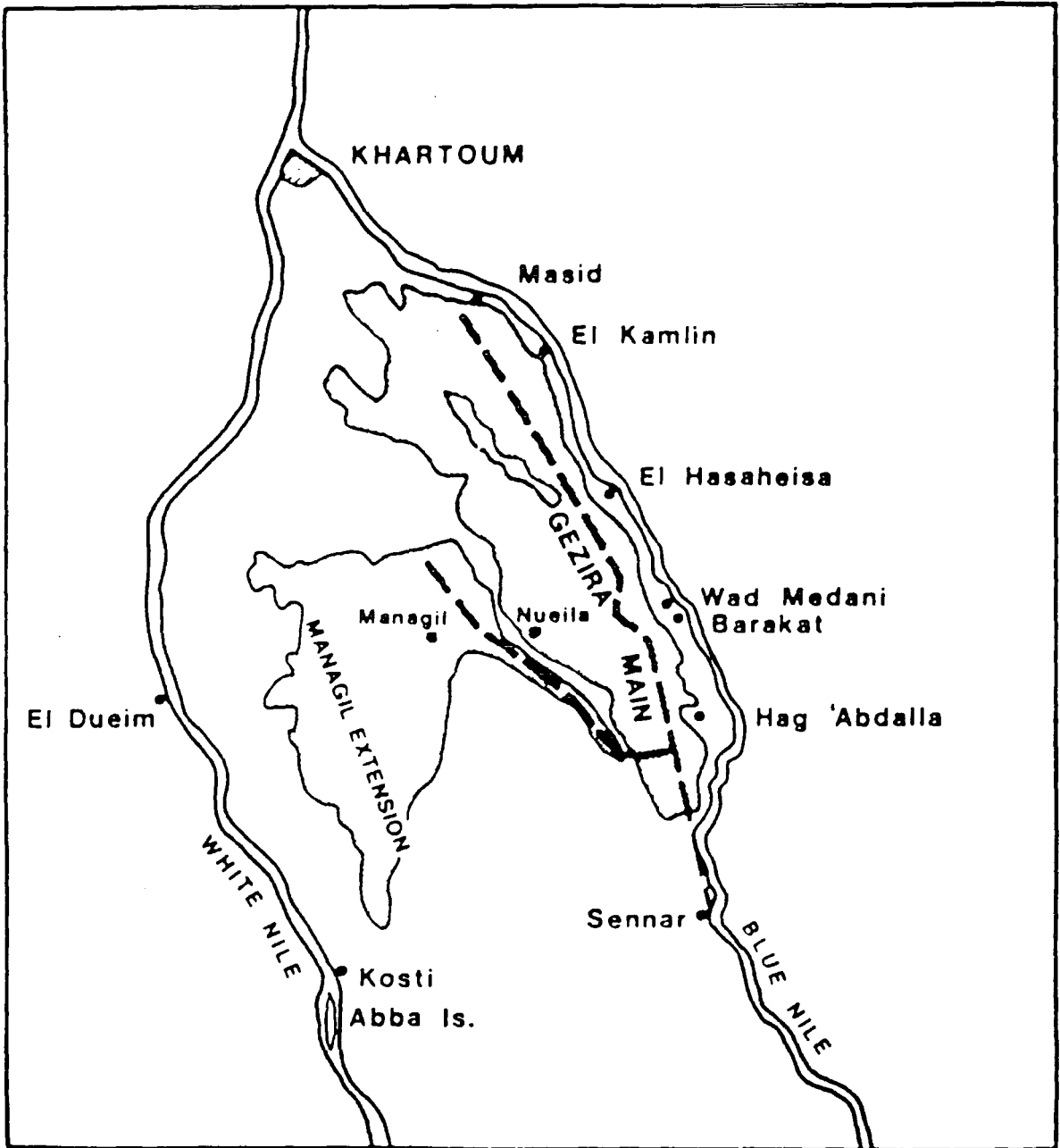


Figure 6.1: The Gezira Scheme

Source: Barnet, (1977) p.2

of El Komur, and Hamadnalla. Of the total labour force interviewed, some 54.8% were found in El Komur block, 29.7% in Hamadnalla, 13.6% in Tayba, and only 1.9% in El Radma. Out of the 280 five-feddan cotton tenancies, some 56% were in El Komur block, 30% in Hamadnalla, 10% in Tayba, and 4% in El Radma.

Table 6.1: Types of Labour Force Surveyed in the Gezira Scheme by Block

Block	Type of Labour Force							
	Total		Family Labour		Local Labour		Migrant Labour	
	Numbers	%	Numbers	%	Numbers	%	Numbers	%
El Komur	1082	54.8	85	28.9	309	41.7	688	73.3
Hamadnalla	587	29.7	148	50.3	188	25.4	251	27.7
Tayba	269	13.6	045	15.3	224	30.2	000	00.0
El Radma	036	01.9	016	05.4	020	02.7	000	00.0
Total	1974	100	294	100	741	100	939	100
% Total	100%		14.9%		37.5%		47.6%	

Source: Cotton Pickers Survey in Gezira Scheme, 1989.

- ii. The second section of the questionnaire was devoted to investigating the patterns of the movement of the migrant labour, the nature of the move, the length of stay in the scheme, the mode of living, and other aspects of the seasonal migration. About 235 seasonal migrant workers were interviewed and all of them were in El Komur block. The chosen sample was meant to be adults over 18 years of age. This part of the questionnaire was not administered in the tenancy, but in the temporary residence camps set up to accommodate the migrant labour. A round was made in each camp which led to all of the huts. The interview was informal in the sense that the nature of the talk took an open discussion form with simple statements. The total camps visited were 25 including an average of 9 to 10 huts each. Both parts of the questionnaire were

carried out with the assistance of the two interviewers who participated in the migrant household survey in Khartoum city.

6.2 Agricultural Sector and the Labour Force

Of the total population of the Sudan in 1983, 79.5% were classified as living in rural areas and of these 86.2% were settled and 13.8% nomadic. A substantial proportion of the total population is young. In 1983, some 44% were below 15 years of age. Those of 65 years of age and over were some 4.5%; this means that the dependent population was 48.7%. The potentially economically active population, (including the employed, unemployed, or those seeking work for the first time) was some 51.3%.

Agriculture is the main source of employment in the whole country. In 1976/77 some 86.5% of the employed labour force was employed in agriculture and fisheries. This proportion is expected to decline through time because of the movement into and the slow expansion of the non-agricultural sectors. But it will be a long time before the absolute size of the agricultural labour force levels off and then begins to decline. This is because the non-agricultural sectors are still relatively small. For the non-agricultural sectors to absorb a greater proportion of the labour force, capital investment must be increased substantially. Individually, these sectors all receive smaller proportions of capital investments than does agriculture. The Three Year Public Investment Programme 1982/83 - 1984/85 estimated the level of public investment over the three years at about £s1.65 bn at the constant prices of 1981/82. Some 32% of that amount was allocated to agriculture. The remaining 68% were allocated between the other seven sectors, an amount which

Table 6.2: Distribution of the Labour Force by Major Sector and Sex 1976/77

Sector	Males	Females	Total	%
Agriculture and Fisheries	2538013	897293	3435306	86.50
Industry and Mining	155203	29851	185054	3.69
Electricity and Water	45222	411	45633	0.91
Building and Construction	91473	803	92276	1.84
Business and Finance	226054	19681	245735	4.90
Transport, Communication and Storage	166792	2214	169006	3.37
Others	310740	9718	320458	6.39
Total	3994504	1020524	5015028	100

Source: Ministry of Finance and Economic Planning, 1983/84

Table 6.3: Trained Agricultural Manpower Currently Employed Compared with Demand Projected in the Six Year Plan (1977/78 - 1982/83)

Manpower Category	Demand	Actually Employed	Deficit %
Agric. Graduates	5000	2962	41
Veterinary Doctors	2220	759	65
Technicians (both)	7000	3047	56
Assistant Tech.	4000	2142	46
Total	18220	8910	51

Source: Ministry of Planning, 1977: cited in: Mohammad, A.B., "The Supply and demand of agricultural labour" An article in: Zahlan, A.B., and Magar, W.Y., 1986 (ed) "The Agricultural Sector of Sudan".

was not adequate to create enough jobs to absorb the masses of labour transferring from agriculture. Private investment, domestic or foreign, is far from capable of

providing significant employment opportunities. Table 6.2 shows the contribution of the different sectors in employment.

In 1982 the estimated total number of agricultural graduates and technicians, and veterinary doctors and technicians was about 8910. Table 6.3 provides the break down of trained agricultural manpower employed at that time compared with the actual demand for such personnel projected in the Six Year Plan 1977/78 - 1982/83. It is clear that the shortfalls were great in the case of veterinary doctors followed by agricultural and veterinary technicians. These shortfalls were not and, up to now, are not attributed to the inadequacy of training institutions, but to a change in government employment policies.

Until 1980, trained agriculturalists and veterinarians at all levels were automatically recruited by the government after graduation. Since 1981, however, the number of new recruits has been dependent on the number of vacant posts, with very few being created. This policy has been adopted not because of a genuine concern to rationalise employment, but rather because of the economic crises manifested mainly by the widening gap between public expenditure and revenue. With more than 15 mn feddans under crops, and some 59 mn livestock, the need for more trained agriculturalists and veterinarians is high and required to increase the productivity of the existing cultivated lands and livestock, let alone from the requirements for horizontal expansion.

Therefore, unemployment levels have risen recently among those trained personnel in agriculture. Conditions deteriorated as larger numbers of trained agriculturalists returned home after they completed their studies abroad. Some of the unemployed of this skilled labour force turned to the private sector, which by now

employs some 5% of them. Most of the others left for the Gulf, Saudi Arabia, Libya, and Yemen where they work in agricultural and non-agricultural sectors as well. Those who found neither of the two opportunities made themselves available for the government to work, against their will and training, as teachers in the secondary schools.

To investigate the conditions surrounding the employment of the different types of labour in the different agricultural schemes, one should give a brief account of the demand, supply and market mechanisms affecting the unskilled labour force in this sector with particular emphasis on the operation of these mechanisms in the Gezira scheme.

6.3 Labour Force in the Gezira Scheme

Irrigated agriculture has a key role to play in determining the levels of output and employment in the whole economy. For example, the Gezira scheme, as well as producing the country's main cash crop, cotton, also accounts for a substantial proportion of the rural labour force, particularly seasonal migrant labour, over and above the permanent employment of near 100,000 tenants. This scheme is the most important among all others because of its size (2.1 million feddans) and because of the fact that all have taken the scheme's production structure as a model.

According to ILO (1976) it was found that migration towards modern agricultural schemes was of staggering magnitude. Some 542,000 people were employed by the Sudan Gezira Board (the administrative body of the biggest irrigated scheme) as cotton pickers, of whom 62% were brought from outside the province on a seasonal basis. The volume of seasonal migration to the mechanised rain fed farming scheme in Nuba Mountains in South Kordofan was in the region of 70,000. In

Kassala province, similar rain fed schemes attracted up to 100,000 migrants in the peak season.

In the Gezira scheme, about 1,346,644 feddans were under cultivation in the 1983/84 season when 34% of the area was under cotton, 19.7% wheat, 10.1% groundnuts, 30.5% dura (sorghum), and 2.7% vegetables. In the following season 1984/85, for technical reasons, wheat was not cultivated and as a result the total area under cultivation was reduced to 1,123,285 feddans; the cotton share was 41.4%, ground nuts 18.9%, dura 37.4%, and 2.3% vegetables. In the scheme, a family labour force of 96,000 tenants is assumed to be supplemented each season by casual labour of about half a million. Of all crops cotton is the most labour intensive. The operation of cotton picking is done manually by four types of labour force; (a) family labour force, (b) local labour force, (c) seasonal migrant labour force, and (d) floating labour force.

Table 6.4 provides information about cotton picking labour statistics for the 1983/84 and 1984/85 seasons. It appears that, in each of the two seasons, the seasonal demand for labour in the Gezira scheme was near half a million. The shortage of picking labour was 4.6% and 1.3% in the two seasons successively. The tenants or family labour force is far from satisfying the whole demand, constituting only 30.2% of the total supply in the 1983/84 season and 30.5% in the subsequent season. The local labour force was 19.3% and 20.3% of the total in the two seasons respectively; while the floating labour force was only 1.2%, and 2.9%. The bulk of the labour force is imported or induced to migrate seasonally from outside the province, mainly from Blue Nile province and the western provinces of Kordofan and Darfur (see Table 6.5(a) and Table 6.5(b)). Seasonal migrant labourers constituted 49.3% of the total in 1983/84 and 46.3% in 1984/85.

Table 6.4: Cotton Pickers in Gezira Scheme for 1983/84 and 1984/85 Seasons

Types of Labour Force	Seasons			
	1983/84		1984/85	
	Numbers	%	Numbers	%
Family	141940	30.2	141505	30.5
Local	090850	19.3	094078	20.3
Migrant	231933	49.3	214862	46.3
Floating	005697	01.2	13640	02.9
Total	470420	100	464085	100
Total Demanded	493054	100	470830	100
Total Available	470420	95.4	464085	98.7
Shortage Labour	22634	4.6	6745	1.3

Source: The S.G.B Socio-Economic Research Unit: The Gezira Current Statistics for Season 1983/4 - 1984/85: Prepared by M. Nur El Din, Barakat March 1986

The demand for cotton labour concentrates in the period from January to April, with additional peak periods in August and September for weeding, which is generally done by family, local and floating labourers. In January to March the demand is higher for the labour force to pick cotton; at this stage the flow of the seasonal migrant labour force is at its highest level. At the beginning of the picking operation, the demand for local and family labour is usually high, but as the season advances and the migrant seasonal labour force starts to pour into the scheme the demand for the former forces declines relatively. Demand for labour is not confined to the picking operation, but is also needed to pull out and clean the debris, an operation which begins when the cotton picking ends by late April and continues for about two months. After sowing in August and the first half of September, there is a slack period before the dura harvest starts in November and

**Table 6.5(a): Sources of Cotton Pickers in the Gezira Scheme
for the Seasons 1965/66 - 1971/72**

Source of Supply	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72
Family Labour	149986	161077	173155	170010	157154	175337	164147
Local Labour	61098	68792	82861	67589	63114	69351	65416
Blue Nile	159875	96010	122703	161481	118964	117893	..
Kordofan + Darfur	21089	64921	67475	79053	97358	95572	..
Kassala	-	5297	2719	7255	8851	7551	..
South	-	450	575	790	516	524	321982
Chad	-	6122	7934	-	-	-	..
Ethiopia	-	307	239	-	-	-	..
Others	-	307	239	-	-	-	..
Total	431699	412385	463179	496256	536137	552827	551545

Source: *The Gezira Board, cited in ILO, 1976, 96*

**Table 6.5(b): Main Sources of Cotton Pickers
for the Seasons 1965/66 - 1971/72**

Source of Supply	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72
Family Labour	149986	161077	173155	170010	157154	175337	164147
%	34.7	39.0	37.4	34.3	29.3	31.7	29.8
Local Labour	61098	68792	82861	67589	63114	69351	65416
%	14.2	16.7	17.9	13.6	11.8	12.5	11.9
Migrant + Floating	220615	182516	207163	258666	315869	308139	321982
%	51.1	44.3	44.7	52.1	58.9	55.8	58.3
Total	431699	412385	463179	496256	536137	552827	551545
%	100	100	100	100	100	100	100

Source: *Derived from Table 6.5(a)*

continues for two months.

Basically, the seasonal migrants to the modern agricultural schemes in the

Sudan are peasants from the rain fed agricultural sector in the western provinces of the country, and parts of the central and southern Sudan. Their movements are said to reflect the supply and demand forces in the labour market. The labourers move from areas where crop and animal production does not provide or ensure the basic subsistence requirements for large numbers of households, particularly in poor rainy seasons. Usually, these labourers migrate in groups of families and relatives, since the work can be done by most of the household members. In the survey conducted by the author in 1989, (discussed later in this chapter), some 14.3% of the sample of the seasonal migrant cotton pickers were under 15 years of age, and some 36.7% were under 20 years. The seasonal migrations of a typical migrant cotton picker are usually repeated several times, and in many cases he joins the same tenant with whom he worked in previous seasons.

6.4 Mechanism of Labour Markets in the Scheme

6.4.1 Family labour force

The Gezira scheme was said to be designed with the concept that the tenant would provide unpaid family labour and act as the farmer as well. The size of the tenancy and cropping intensity were designed in accordance with the availability of family labour. A typical tenancy in the scheme consists of 40 feddans. The crops grown consist of cotton (10 feddans), wheat (10 feddans), dura (5 feddans), groundnuts (5 feddans) and a 10 feddans area is left fallow for one season to be cultivated by cotton in the next season. The land was basically under tribal ownership before the scheme. When the scheme was established the government rented the land from its users on which they used to grow their food crops and graze their animals. The rent was at minimal rates but it gave the owners the

right to hold a tenancy in the scheme.

Table 6.6 reports the contribution of the different members of the tenant's family labour force recorded in the tenancy survey conducted by the author in 1989. Out of the 294 workers classified as family labour, some 66.4% were core family members; that is, sons, daughters, and spouses of the tenants. The remaining was the share of other members of the family such as the parents (6.5%) brothers (6.1%) and sisters (19.4%) of the tenants, and the tenants themselves (1.7%). Even the household or the family labour does not necessarily work without financial reward; it is common for male children to receive wages from the head of the household and in many cases these are equal to the market wages. In the case of females, the period of contribution as an unpaid worker in the tenancy lasts until marriage, most commonly around 16 years of age. However, from the start it became clear that the labour requirements were more than could be handled by the tenants and their family labour alone.

Table 6.6: Family Labour in Cotton Picking and Relation to the Tenant

Relation	Numbers	%
Daughter	106	36.1%
Sister	57	19.4%
Wife	54	18.4%
Son	35	11.9%
Parent	19	6.5%
Tenant Himself	5	01.7%
All	294	100%

Source: Migrant Cotton Pickers Survey, 1989

Hired labour has been in high demand since the very beginning. Table 6.7 shows the annual labour requirements of a characteristic Gezira tenancy and the contribu-

tion of a tenant family and hired labour (local plus imported) to the labour supply. It reports that the annual labour requirement per tenancy is 1001 man/days. Cotton is the most labour demanding among all crops, followed by groundnuts and dura. The use of machines and herbicides justifies the low labour requirement for wheat. According to the estimate of Table 6.7, the participation rate of the family labour force in the total labour required in an average typical tenancy is 32.4%. The remaining is obtained through hired labour.

The 1989 survey showed that, of the 1974 workers interviewed inside the cotton tenancies, only 14.9% were family labourers (see Table 6.1) This low contribution by the tenant's families in the workings of their tenancies as a whole, and cotton in particular, can be attributed to a variety of factors.

The most important factors are:

- a. The prevailing production relationships before the 1981/82 season were based on the sharing of the cotton crop between the tenant and the government, and did not provide an incentive to increase production. The system then in use was called the joint account system, according to which the two partners (the government and the tenant) had certain obligations to be carried out jointly. After the selling of the cotton, joint costs were deducted from the proceeds. These costs included all production inputs and administrative costs. The balance was then to be divided between the two parties according to an agreed formula. On the other hand, other crops belonged to the tenant and he did not have to pay any costs incurred by the government in the production of these crops. That relationship made the returns from cotton less rewarding compared with other crops, and resulted in less effort and concern being directed towards cotton.

Table 6.7: Labour Requirement and Supply (man/days) by Family and Hired Labour for a Typical Gezira Tenancy

Month	Cotton	Wheat	Groundnuts	Dura	Total Labour Required	Family Labour ¹	Hired Labour
May	-	-	20	10	30	27	3
June	20	-	20	15	55	27	28
July	10	-	18	10	38	27	11
August	46	-	11	16	73	27	46
September	57	-	18	8	83	27	56
October	32	16	7	23	78	27	51
November	12	16	45	33	106	27	79
December	12	9	90	10	121	27	94
January	87	4	-	-	91	27	64
February	132	4	-	-	136	27	109
March	127	10	-	-	137	27	110
April	50	3	-	-	53	27	26
Total	585	62	229	125	1001	324	677

1- Family labour is estimated on the assumption of 1.3 worker per average tenancy per day.

Assuming 21 actual working days per month, potential number of man/days available per month are 27.

Source: Euroconsultant et al, 1982b

In addition, those policies penalized high yield cotton producers because the proceeds were distributed among tenants only after the joint costs were paid and a balance resulted. These costs were calculated by the SGB on the basis of yield not area. In years when joint costs exceeded proceeds, no tenant received any income from cotton whatever his production has been.

b. The lower returns from the tenancy compared with those which might have been

earned from off-farm employment caused increasing numbers of tenants and their family members to seek non-farming jobs and activities. The relatively low and fluctuating income from tenancy led to a widespread dislike of complete dependence on farm work. The phenomenon of a tenant and his family members having another occupation has increased. In a survey conducted in 1976, over 36% of the sampled tenants were found to have a secondary occupation, and almost 50% of the income earned by that sample in that season came from sources other than tenancy. Currently, it has been claimed that some 51% of the registered tenants are not involved directly in the agricultural operations of their tenancies, but work as traders or workers in other fields.

- c. The intensification of cropping in the scheme has increased the demand for labour input. Since the 1975/76 season the cropping intensity has increased to 75% in the Gezira, and 100% in the Managil extension. This came as a result of the increase of the area under wheat and groundnuts. The former crop does not demand a high labour input, but the latter does. Most of the tenants currently in the scheme enter into sharing arrangements with the landless camp labourers as a means of substituting for family labour in groundnuts production. The tenant provides the land and seeds, and the partner, called the *shareek*, provides his labour and supervision. The harvest is divided in most cases equally between the two partners. This partnership, known as *sharaka* in the scheme, lasts for only one season but can be renewed next season with the same or another partner, and may be under the old or new terms of partnership.

Since the 1981/82 season, the joint or shared account system has been replaced by a new production relationship called the 'individual account' ending 70 years⁵

⁵ The Gezira scheme started in 1910 as an experimental pump station in Tayba (Khalafalla, 1986)

of sharecropping. The aim of the new system is to calculate the actual cost and revenue of cotton production for each tenant separately. This change came as an effort to encourage tenants to invest more of their resources on their cotton tenancies. This new relationship enables productive tenants to achieve a greater share of the cotton proceeds than under the former system. It also enables them to re-allocate their resources more efficiently among all crops. As found by El Bashir (1982), the new production relationship increased the tenants' returns from cotton from £s6.7 million in 1980/81 to an all-time record of £s21.1 million in 1981/82. However, there is a long way to go before tenants can have their own effective say in the decision making on crop mix, area allocated for each crop, land preparation and variety selection which are all made separately by the policy makers and technical experts.

Despite the fact that under the new account system tenants, particularly the most productive ones, have shown greater interest in their tenancies, and devoted more resources to cotton cropping, the new system is not without faults and shortcomings. It does not protect the tenant against crop failure resulting from such natural and technical hazards as shortages of irrigation water at the needed time, pest hazards, bad soil, etc... As a result, it could not convince the tenant's family to devote all or a considerable part of its labour potential to cotton picking.

6.4.2 Local labour force

We have already mentioned that the majority of the rural labour force needed for cotton picking is specially recruited in the scheme. The local and floating labour forces are recruited by direct contact between the tenant and the worker. This type of labour includes labourers resident in the villages of the scheme, and

includes also those living outside the villages in the labour settlements. The latter group consists of Fellata (natives from Nigerian origins), and Burgo and Tama (the border tribes of Chad) who are predominantly non-Arab workers. This local labour force is used most by those tenants whose tenancies are adjacent or very near to the village and who import no migrant labour. Also, the demand for this group of labourers is high at the beginning of the period of cotton picking when the contracted imported labour force has not arrived yet. At that time, the remote as well as the adjacent tenancies compete for the existing local labour force. This competition sets the wage prices per guffa (1 guffa = 35 lbs) for the new season, which apply only to the local and not to the imported labour force. Currently, as in the case of El Komur village, the tenants whose farms are remote (3 km and more) attract the limited local labour force to their fields by providing free transport to and from their tenancies. They hire lorries, or carts pulled by horses to carry them.

All the local labourers receive their wages in cash, and the average price per guffa which is the standard measure for the labour productivity, was £s5 in the 1988/89 season. This wage rate for this type of labourer was almost equal everywhere in the scheme in that season. As the season advances, the flows of the seasonal induced migrant labour force increase, and consequently, the demand for the local labour declines, but the wages set will not decline throughout the season.

Table 6.8 shows the sources of the hired cotton labourers in the Gezira scheme, and their absolute and relative numbers for an average of 12 seasons, 1967/68 - 1978/79. It appears that the average supply of the local labour force during that period was 65,714 per season; some 18.7% of the total annual supply of all types of labour force hired for cotton picking. In the 1989 cotton fields survey, the local

labour was 37.5% of all those in the sample; a figure which shows the increasing share of the local labour in cotton picking. This increase can be strongly attributed to the introduction of the individual account system which enabled the tenant to give a better wage to cotton pickers, and consequently attracted larger numbers of local labourers than under the old system.

The size of the floating labour force is never large, and they make themselves available to the tenants and are treated in much the same way as local workers. Basically, the floating labourers move into the scheme from other provinces and sometimes from the edges of the province of the scheme, without being recruited or transported by anybody. Their average annual supply was 15,744, which represents only 4.5% of the seasonal supply of hired labour in the scheme.

6.4.3 Seasonal migrant labour force

The average annual supply of the seasonal migrant labour force recruited for cotton picking was 350,521 for the period 1967/68 - 1978/79. This category of cotton pickers is attracted to the scheme in two ways:

- a. Labour contracted and imported by the tenant themselves from the extremities of the Gezira, the Blue and the White Nile provinces, and from the western provinces of Kordofan and Darfur.
- b. Labour contracted and imported by the Picking Labour Committees, which are set jointly by the SGB, the tenants and the government labour offices in the different provinces.

Since 1967/68, both the Sudan Gezira Board and government labour offices in the different provinces have been operating recruitment stations, mainly in Kord-

**Table 6.8: Sources of Hired Cotton Labour Force in the Gezira Scheme
1967/68 - 1978/79**

	Types of Labour Forces			
	Local Labour	Seasonal Migrant Labour Recruited by Tenants	Seasonal Migrant Labour Recruited by SGB	Floating Labour
Total				
4,206,253	788,573	2,587,512	641,179	188,929
Average				
350,521	65,714	215,626	53,432	15,744
% Average	18.7	61.5	15.3	4.5

Source: Derived from Euroconsult et al, 1982a, cited in: Zahlan, A.B., (ed) 'Agricultural Sector of Sudan: Policy and System Studies (p. 100.)

ofan and Darfur. On the other hand, tenants themselves, acting individually or in groups, also travel to the areas of the labour supply and recruit workers through personal ties and/or through influential persons in these areas such as village heads and tribal chiefs.

In practice, as Table 6.8 shows, recruitment through the formal agencies of the SGB was on a relatively small scale when compared with that achieved by the tenants themselves. Of an average of annual labour supply totalling 350,521, some 53,432 (15.3%) were recruited by the SGB and 215,626 (61.5%) by verbal direct contacts between the tenants and the labourers. According to the 1989 survey, however (Table 6.1) migrant labour, all of which was recruited directly by the tenants themselves, constituted 47.6% of the total labour force in cotton picking.

The shiekhs, village chieftains, and personal contacts and links with the areas

of labour supply play an important role in the recruitment of the workers needed. Early in September or October, a tenant must go to the villages with which he has contacts in the supply areas to prepare his workers for the journey to the scheme in December. The tenant may represent himself or other colleagues in the scheme. He contacts his workers directly or with the help of the village heads, and takes a verbal commitment from the contracted labourers. A fixed date is usually stated for a lorry or truck to come and take them to the scheme. Recently, it has become important to offer a *sweet cash* for each person contracted as a gesture of good will from the side of the tenant; this cash is not repayable. In the 1988/89 season this sweet was between £s25-50; the objective is to motivate the worker and to prevent his being hired by other tenants since there is no written contract. When the lorry arrives at the tenancy in the scheme, the seasonal migrant labourers usually find ready accommodation in the fallow field near the cotton tenancy in the forms of traditional grass huts.

The imported labour force is paid in kind and cash. There is no published data on the value and volume of the payment in kind, but usually it includes dura, dry fish, and in some cases pounds of sugar. Amounts of these items vary from season to season, and from one place to another. In cash, they are paid wages less than half those paid to the local and floating labourers. In the case of this category of labourers, a two way free transport is offered, unlike the case with those recruited by the SGB, where the payment is just free one way to the scheme.

6.5 Does this Rural Labour Market Work?

Therefore, it can be said that labour migration is important and crucial for both traditional peasants and modern tenants in the sense that it produces mutual

benefits for the two sides. However, there are contrasting ideas as to the evaluation of these movements as a developmental policy. Berg (1965) and Beals et al (1970) viewed seasonal migration as a mechanism for temporary adaptation to the unequal distribution of resources between regions, and regarded it as being more efficient than permanent migration in the sense that it temporarily re-allocates resources between rural areas. On the other hand, Amin (1974) stated that whether migration is seasonal or not, in the end it leads to marginalization and underdevelopment of the sending areas. However, the ILO regarded the seasonal migration to the Gezira scheme, its situation of employment and market mechanism, as beneficial. The report of the commission argued that the rural labour markets function adequately to supply agriculture with the workers needed. But the report also stated that the actual profitability of labour contracting to the tenant is difficult to measure due to the payment in kind. Also, the mission reported that there is a clear picture of a well coordinated labour market, functioning quite well in response to price and motive signals, albeit with some labour shortages in peak periods. There are not many countries in the world, the report mentioned, where so much labour is mobilized over such a short period of time without any central direction of any kind.

As a strategy for agricultural development in the Sudan, the ILO report suggests complete reliance on the provision of services and facilities to the traditional rural economy to help subsistence farmers improve their earning capacity. This strategy is not possible for the country to achieve in the short and medium terms because it requires a level of public spending which is beyond the capacity of the economy. Consequently, the mechanism of seasonal labour migration plays a key role in transferring some of the returns from the modernized agriculture in

schemes like Gezira, Rahad, and Khashm al Girba, to those peasants in the subsistence agriculture sector. The use of migrant labour from the subsistence sector in the modernized one will secure a more equitable distribution of the fruits of development, according to the report.

There is indeed a big difference and a wide gap between the income levels in the Gezira scheme as an example of modern agriculture, and those in the sending areas of seasonal migrant labourers where subsistence agriculture dominates. This gap is made wider by the increasing natural hazards in the subsistence sector which have compelled many to migrate.

Less than three decades ago, the families of the subsistence sector in the west of the country were able to earn money in several different ways. They could work as casual labourers in the local urban centres, or by collecting and selling gum-arabic, or as seasonal workers selling their labour to the tenants in the Gezira scheme. But, lacking any real developmental projects in the areas of traditional agriculture and being affected by drought and desertification, the local urban labour markets have grown much more slowly than the population, and few employment opportunities are being offered. Because of the creeping sand and long repeated dry seasons and poor rainfall, the area under cultivation has been greatly reduced and consequently the fallow periods become shorter leading to the destruction of large areas of acacias. These acacias are of great importance, not only because they conserve the soil, but also because they are the source of gum-arabic which provides the families with cash income. The overall productivity of land in Kordofan and Darfur has decreased in the past 20 years. According to data published by the Ministry of Agriculture in Khartoum, the yields of groundnuts decreased from 350 to 89 kg/fed between 1961 - 1973, those of dura from 421 to 190 kg/fed, and those for

millet from 538 to only 70 kg/fed (derived from Heinritz, 1985). Such reductions in productivity, and in the area under cultivation and pasture, affect the subsistence sector and provokes, not to say compels, the willingness of the families of the area to migrate. Heinritz accused the country's developmental strategies of deliberately neglecting the traditional sector to secure the flow of seasonal labour to pick cotton, the main wealth of the country, and to keep wage costs low. That is, by using cheap labour, the modern agricultural sector in general, and the Gezira scheme in particular, will increase its profit margin which enables it to maintain a competitive position for its cotton production in the world market. This counter argument of Heinritz can be regarded as a reality that distorts the reasoning of the ILO.

Considering all these forces and changes in the subsistence sector, it becomes very clear why the irrigation sector, in the case of Gezira scheme, is capable of recruiting migrant workers, despite their being under paid by their recruiters. Therefore, one can not speak of a net transfer of resources and equitable distribution of fruits of development from the modern to the traditional sector as the ILO report stated. In a survey conducted in the sending areas in Kordofan in 1980 (cited in Heinritz, 1985) not a single person was found to have been accumulating any significant savings from his or her work in the irrigated schemes. If they have significant savings, then one would expect these labourers to finance their journeys to the Gezira and other irrigated schemes by themselves. If this happened, then they would be able to have a stronger bargaining power for higher wages and better working conditions than those offered now by the tenants who go to their villages and provide free transportation to and from the scheme. In such a case, it would be possible to argue about a clear operating market mechanism, and a fair and

fruitful distribution of rewards of development.

Therefore, it is not the perfect mechanism of the rural labour markets that secures the flow of labourers from the subsistence to the modern agricultural sector. Rather, it is the pressing needs of those workers to gain cash and live. If the market mechanism is perfect, then the wage per guffa, for example, in Gezira should be expected to increase in line with other goods and services; but the case is not so. Inflation rates in the country have reached uncountable levels. The average daily earnings of cotton pickers in the scheme were reported by the ILO mission as varying from £s0.35 to 0.50 in 1974. At that time that amount of money was capable of buying, for example, 5 lbs of sugar. In 1989, the average daily earnings of a seasonal migrant worker were between £s7.5 and £s8.3, a sum which is capable of buying one pound of sugar at the best, and only half a pound in the black market.

Given the present conditions, the flow of the seasonal migrant labourers will continue to come to the irrigated schemes as long as the economic and social underdevelopment in the subsistence sector remains. Once there is a substantial improvement and development in the traditional agricultural sector, then the situation will change and the whole argument will be different.

From a national point of view, and as long as the production of cotton is obtained at a cheap labour price, the introduction of mechanization in the cotton picking operation seems unnecessary. Questions about the introduction of labour-saving cropping patterns and about increasing mechanization wherever it is technically possible should be shelved for the time being. If and when things improve in the sending areas, then higher and higher wages will be asked for by the

peasants to work in the irrigated schemes, a request which cannot be turned down by the demanding tenants. At that time, increased mechanization may prove to become economically justified because of the rising wage rates, and consequently rising production costs. But even at that moment, the mechanization issue should be tackled with care, and its economic as well as its social costs should be critically examined and forecast.

6.6 Movement and Distance

Table 6.9 shows the different sources and origins of the 235 seasonal migrant cotton pickers surveyed in 1989. Some 49.4% came from outside the scheme but from within the province itself. Another 38.7% came from the western provinces of Kordofan and Darfur, 11.5% from the adjacent Blue Nile province and only 0.4% (one person) from Kassala province. In terms of distance, and despite the fact that western provinces are more than 313 km from the scheme, they were the second largest source of labour in the sample. Kassala province's share in the sample was very small and only one person was recorded. This can be attributed to the fact that, before they cross the Blue Nile to enter the Gezira scheme, the migrant labour from Kassala province passes over three big agricultural schemes, namely the mechanized rain fed agriculture and New Halfa irrigated schemes in Kassala province, and the Rahad irrigated scheme just 100 km east of Gezira scheme. So, it is more likely for labour from that province to work in either of those three projects, than to work in the Gezira scheme. The adjacent Blue Nile province which provided 11.5% is some 190 km away from the scheme.

Therefore, it seems that there is no consistent influence exerted by distance. That is to say, distance does not appear to be an obstacle to the movement of

seasonal labour. This is because the seasonal migrant labour is transported to and from the scheme freely and the tenants bear that cost. It was found that only 1.3% of the sample paid their own travelling cost, but 98.7% stated that the cost of their travelling was borne by the tenants. Those workers from the Gezira province came from villages of average distances of 60 to 70 km from the scheme. All of them came from the south and south western parts of the province. In a different survey on cotton pickers in 1980 (Yousif, 1985) some 51.2% of the seasonal migrants came from a distance of 70 km or less from the scheme. Unlike the case in our survey, the survey of 1980 showed that those migrants came from villages located east of the banks of the Blue Nile and along the banks of the White Nile.

Table 6.9: Sources of Seasonal Labour by Province

Province	Numbers	Percent	Distance ¹ (km)
Gezira	116	49.4	-
Blue Nile	027	11.5	190
Kassala	001	00.4	205
Western Provinces	091	38.7	313
Total	235	100	-

1- Distance was measured by a straight line on the map between the capital city of each province and that of Gezira province (Wad Medani). The distance of the western provinces was obtained by the average distance of El Obied and El Fashir from Wad Medani

Source: Migrant Cotton Pickers Survey, 1989

Currently, and because of the establishment of the Rahad agricultural scheme on the eastern bank of the Rahad seasonal river (also east of the Blue Nile), in 1980,

the natives of that area stopped coming to the Gezira scheme as seasonal migrant labour. Most of them became tenants themselves in the Rahad scheme, and the rest may be seeking work in that scheme rather than travelling to do the same job elsewhere. Classifying those from villages in Gezira province as short-distance seasonal migrant labour and the remainder as long distance, we find approximately equal numbers in these two categories (50.6% and 49.4% respectively).

6.7 The Nature of the Move and Earnings of Workers

As has been mentioned, the seasonal labourers come to the scheme in families and groups of relatives. From the results of the survey, some 90.5% of the short distance seasonal labour mentioned that they came with their families, against 92.5% of the long distance labour. Those who came with other relatives represent 1.7% and 3.4% of the two groups respectively. Only 7.8% of the short distance labourers came alone against 4.2% of the other group. Table 6.10 shows that the total number of family members who came together to the scheme was 706. The core family members (sons, daughters, and spouses of the heads of the groups) were 88% of all family members recorded. The remaining 12% were distributed among brothers (2.3%), sisters (6.2%) and parents (3.5%). In the 1980 survey the core family members were 55.6% and the rest for the other relatives. These results indicate that the pattern of movement in family groups still prevails among the seasonal migrant labour to the Gezira scheme. In addition to the objective of securing a livelihood and a consistent availability of work, this collective movement of the family during the slack period in the sending areas also has the objective of not leaving children or dependent members behind, and at the same time making use of almost all members of the family in generating income.

**Table 6.10: Family Members Following the Interviewed Labour
to the Gezira Scheme**

Relation	Numbers	%
Son	175	24.8
Daughter	307	43.5
Spouse	139	19.7
Brother	016	02.3
Sister	044	06.2
Parents	025	3.5
Total	706	100

Source: Migrant Cotton Pickers Survey, 1989

Cotton picking is dominated by females. For the three types of labour surveyed in 1989, females numbered 1523 (77.2%). For the migrant labour specifically, the number of females was 616 (65.6%) (see appendix C.2.1).

In terms of age, Table 6.11 reports that even those of less than seven years of age participate in the picking operation, and produce an average of 1.5 guffas a day. (The prevailing price for picking one guffa was £s2.5 for the migrant labour). This age group represents only 2.3% of the 939 migrant workers. Of the 214 migrant labourers between the ages of seven and fifteen, 57.9% had an average daily productivity between one and two guffas, 33.6% produced 3-4 guffas and the remaining 8.5% five guffas or more. Of those aged 16 and over (703 workers) 24.3% produced one to two guffas, 62.3% produced three to four guffas and 13.4% five guffas or more. Given the fixed wage of £s2.5 paid in that season, it is possible to

estimate the daily average earnings of the migrant labour force. 33.8% had daily earnings averaging £s3.75, some 54.3% gained £s8.75, and 11.9% gained £s12.5 or more. The overall average daily earnings were £s 7.5, compared with £s 9.6 for family labour, and £s 11.3 for local labour (see appendix C.2.2). Assuming an average of 35 days' work in the season, a migrant cotton picker earned an average of £s263 as against £s 336 for family labour and £s 396 for local labour. In the 1982 season, a migrant worker earned an average of £s 1.6 per day (Yousif, 1985) just over one-fifth of the 1989 figure.

Table 6.11: Average Daily Productivity of the Migrant Labour by Age Groups

Age Groups	Average Daily Productivity*						Total	
	1 - 2	%	3 - 4	%	5 and more	%	Number	%
Less than 7	022	100	000	000	000	000	022	02.3
7 to 15	124	057.9	072	33.6	018	08.4	214	22.8
16 and Over	171	24.3	438	62.3	094	13.4	703	74.9
Total	317	-	510	-	112	-	939	100
% Total	33.8	-	54.3	-	11.9	-	100	-

* Productivity was measured in guffa which is a local term for every 35 lbs of cotton

Source: Migrant Cotton Pickers Survey, 1989

The fact that migration to the Gezira scheme is seasonal and temporary is verified by the finding that 87.2% of the sample stated that they would return home directly by the end of the picking operation, while only 12.8% stated otherwise. Some 80% of the second group disclosed that they would stay to pull out and clean

the cotton stems, and 20% were planning to go to Khartoum city and seek work there.

In their reply to the question "*did you come before to pick cotton in the scheme?*", some 83.8% replied 'Yes', and 16.2% replied 'No'. Of the first group, 52.3% were short distance migrants. This fact of regularity of coming to the scheme to pick cotton is also strengthened by the finding that the number of seasons attended in the scheme (for the whole sample) ranged between 1 and 55 seasons with an average attendance of 13 seasons. Furthermore, it is not only the regularity that characterizes the movement to the scheme, but also the consistency of joining the same tenant every season. Some 67.2% of the sample revealed that they had worked with the same tenant in the preceding season; 55.7% of them were short distance labourers. The number of seasons worked with the same tenant ranged from one to thirty seasons, giving an average of 6 seasons.

These outcomes imply that the work relationships between the tenant and his seasonal labourers has a social content in the sense that it is not only the wage offered that motivates the migrant to work with this tenant or the other, but other things such as friendship and social commitment are taken into account. Some of these social relations are reflected in the following quotation of a migrant labour. She stated that

..he (the tenant) is a very good man with me and my family. Last year he sent me a letter of condolence and an amount of £s75 when he heard of the death of my son..As long as I come to this scheme..I will never replace him with another tenant.

The desire of the seasonal migrants to supply their labour for cotton picking

in the next season was also strong. The sampled workers were asked whether they would come back next season or not, and some 73.4% of them confirmed that they would. Another 4.7% confirmed that they will not come and 21.7% confessed that they were not sure and could not determine whether they will come or not. 60.1% of those who assured their coming next season were short distance migrants. Some 90.9% of those who were determined not to come next season were long distance, and only 9.1% were short distance labour. This reflects the stronger ties of the latter group with the operation of cotton picking.

6.8 Mode of Living

Table 6.12 indicates the main sources of income of the migrant labourers in their home area. About 94% of both short and long distance migrant labour stated agriculture as their main occupation, and the most important source of income at home. Animal husbandry, petty trade, and casual labour were chosen by only 6% of the sample. Some 91.5% of those interviewed mentioned that they had a piece of arable land at home ranging in area between 1 and 98 feddans, with an average of 28 feddans. Most of these areas are cultivated during the rainy season, and the size of the actually cultivated area depends on the success of the rainy season. Dura, millet and sesame (sesame in the western provinces only) are the main types of crop production. The first two crops represent the main staple food, while the third is the main cash crop in these areas. In the 1980 survey, the short distance workers were found to be managing mixed household economies by combining animal husbandry with rain fed cultivation. This was evident from the fact that 81.9% of them were semi-nomadic, and 70.7% of them owned or cultivated rain fed land at home. It seems that there has been a change in recent years. As we mentioned above, after 1980, the Rahad irrigated scheme was established, and

Table 6.12: Main Income Source of Migrant Labour at Home

Source	Short Distance		Long Distance		Total	
	Numbers	%	Numbers	%	Numbers	%
Agriculture	111	50.2 %	110	49.8 %	221	94.04%
Casual Labour	4	44.4 %	5	55.6 %	9	3.83%
Petty trade	00	00.0 %	4	100 %	4	1.70%
Animals	1	100 %	0	100 %	1	0.43%
Total	116	-	119	-	235	-

Source: Migrant Cotton Pickers Survey, 1989

most, if not all, of those semi-nomadic labourers from the eastern banks of the Blue Nile stopped coming to the Gezira scheme. As a result, in the survey of 1989 there were no semi-nomadic labourers and, instead, it appeared that no single person was reported as having animals with him; all of them were peasants depending on traditional rain fed agriculture.

Thus, it becomes clear from the results of our survey that rain fed cultivation in the traditional sector, and cotton picking in the modern irrigated Gezira scheme are integrated. This integration is plain in the sense that the two types of agriculture together provide a living necessary for the survival of the seasonal migrant labourers. The peak of cotton picking is usually between January and April, a slack time in agricultural activities in the traditional sector. By January, dura, millet, and sesame are all harvested. Instead of staying idle up to May (the beginning of their new season) the peasants of the traditional sector move to pick cotton in the Gezira scheme. In addition to the cash and kind wages they receive from the tenants, they also make use of the harvest of other crops in the scheme. When the migrant workers arrive at the scheme by January, the groundnuts will have

already been harvested, and their areas abandoned. The seasonal labour enters these abandoned areas and digs for the remaining groundnuts under the ground. A migrant family of four to five members may end up with an average of 5 sacks of groundnuts (one sack = 45 kg). Most of it is usually sold for the market price in the scheme, and little of it taken home. Also, by the end of March and first half of April the harvest of the wheat in the scheme begins. For the second time the migrant labour grasps the opportunity and follows the combined harvesting machines and collects the wheat ears that are dropped by the machine. By this practice they collect a good amount of wheat for sale and consumption.

6.9 Conclusion and Policy Recommendations

What conclusions are to be made and what policy recommendations might be derived from the analysis of these results? As regards the general issue of seasonal migration to the Gezira scheme, great emphasis was laid in the ILO mission report (1976) on the matter of how to secure a flow of seasonal migration to the scheme and the need to increase the pool of labour available for seasonal migration. This emphasis neglects the crucial fact that these seasonal movements from the traditional subsistence agricultural sector to the modern one have actually been going on for more than fifty years (since the establishment of the Gezira scheme in 1926) without tangible benefits either to the migrants themselves or to the sending areas; the evidence is the poor standard levels of living of the migrant labour and the poverty prevailing in their home areas. On the contrary, the great attention to the modern agricultural sector in the Sudan, and to the cotton crop in particular, have deprived the traditional sector of the necessary care and developmental projects it badly needs. Attention is paid to the latter sector only to a level that secures the continuity of the seasonal migration to pick

cotton, and returning home after the job is done.

In order to have an integrated practical solution, one suggests the following policy measures that are assumed to solve the paradox of the development; promotion and modernization of the traditional agricultural sector, and the consequent expected problems of labour shortage in the Gezira scheme.

6.9.1 Short-term policy

1. A new wage policy for cotton pickers is essential under which the SGB would fix a minimum and a just level of wages to eliminate the under-payment of migrant labour. The board, acting on behalf of the central government, should make a wage legislation that is practical, fair and just. It should be practical in the sense that cash allowances are to be provided to the tenants to meet the rise in the minimum wage levels during the picking period. Also, if the rise is significant enough to the extent that it is going to reduce the profit margin of the tenant, then the tenant should be subsidised and the SGB should bear part of the cost without including it in the payroll sheet. If this happened, the earnings of the seasonal migrant labour would be of significance, and would leave them with marginal savings that would reduce their economic misery.
2. The living conditions in the seasonal camps of the migrant labour should be firmly checked and standardized to the basic health requirements. The current conditions can at least be described as 'inhuman' in most of the cases.
3. To avoid the problem of the seasonal labour shortages, the SGB should continue and widen its policy of cutting out cotton from the rotation in areas where land is not suitable, or irrigation water is not secure. Instead, these areas should be

replaced by mixed agriculture and raising of animals. (This is recommended most in the Northern, and North-Western sections of the main Gezira scheme). By doing so, the overall demand for labour will decline in the scheme.

4. Collaborating with the regional Ministry of Education, a more positive and organized role of the primary, intermediate, and secondary schools in the scheme should be tailored and officially considered to fit within the calendar of the schooling year. The objective is to enable these pupils to participate in the picking operation, which would mobilize more local labour into the field. Doing so, the demand pressure on imported labour will ease.

6.9.2 Long-term policy

The relative backwardness of the traditional sector highlights the general problem of sectoral (as well as regional) inequality between the modern sector in central Sudan and along the Nile banks, and the rest of the other sectors all over the country. Here, the main objective is to propose a developmental policy for the traditional sector that makes use of the different geographical settings of that sector based on a real and practical participation of the local community. These policies include:

- i. Different environments favour different solutions. The traditional sector consists of sandy soils in part and clay in another. The former type is mainly exploited by a large population for agricultural and pastoral production, mainly in the western provinces; here, simple production techniques are used. The clay soils are hard to be fully exploited by peasants and they require heavier production tools and machines for agricultural production. Given such conditions, the central as well as regional governments in the country should supply the nec-

essary and suitable facilities to promote production techniques in the two soil types in the traditional sector. This would increase both horizontal and vertical productivity of the sector, leading to an improvement of the living conditions of the population of the area. Local markets would flourish and expand, and would consequently lead to creation of new employment horizons. The peasant population's propensity to migrate elsewhere would recede through time as long as their savings from their own production remained satisfactorily high.

- ii. To secure a proper and fruitful implementation of these policies, the mobilization of these productive efforts should be from below and not imposed by directives from above. That is, even rural councils in this sector are to be encouraged to draw and suggest their local development plan. This necessitates exertion of extra effort to collect data on a local basis.
- iii. Swift promotion and increase of the existing poor health and educational services available. By reducing, and ultimately eliminating illiteracy the population would be more aware of its duties and rights, and would help in improving their inventive capabilities.

6.10 Research Perspective

The author was unable to visit the sending areas of the seasonal migration because of logistical reasons. Missing that opportunity, then it should not be missed to propose the following research fields in connection with the theme of this topic:

- i. Research should be conducted from within the sending areas of the traditional sector. The objective of the research should include the collection of socio-

economic and demographic information about the rural households in those areas. This is to find out the determinants of and linkages between migration to rural , urban and foreign labour markets. It may be necessary to differentiate between different geographical areas, and ethnic groups; for example the poorer agricultural areas of the south, west and even inside the Gezira province.

- ii. Another area of research is on the supply and demand side for agricultural labour. It should examine these forces for the modern agricultural sector, and investigate pricing and wage policy, marketing and production relations, land rent and seasonality of production, credit and competition for resources between this sector and the traditional sector.
- iii. Feasibility of agro-industries, and their effect on labour employment and migration.

Much other researche is demanded to provide an integrated knowledge that would enable the policy makers to set proper and realistic goals badly needed by the masses of the poor masses.

Chapter VII

Conclusions

7.1 Summary and Findings

As we have already discussed, the direction and volume of the Sudanese population movements are mainly determined by the unbalanced regional development in the country. The fact that some regions are favoured and given much more attention than others, and that modern agriculture has been developed in certain regions at the expense of the traditional agricultural sub-sector in others, show the major reasons and determinants of the internal migration process in the Sudan. The history, nature, merits and demerits of development plans and strategies which led to such regional imbalances need a separate research and discussion because of their complexity and controversial nature. But, from the discussion in chapter two, one can come out with the following findings:

1. The potential resources of the country in terms of area, arable land, pasture lands, water, livestock, forests and mines, are all present in large quantities and are more than enough to provide a good living for almost all the population wherever they live in the country. The basic problem lies in the underutilization of these resources. Internal, international and natural forces have militated against the efficient utilization of these resources. The civil war in the southern Sudan, the bias of central governments and mismanagement in the planning and execution of developmental plans, have all played a part in the current shape and structure of the Sudanese economic, social and demographic

structures. On the other hand, the colonial (British) power that governed the country extracted much of the country's agricultural proceeds and fruits of development without repaying or rewarding the country by, for example, carrying out further developmental projects in various regions. In addition, the fluctuating international market prices of agricultural products (particularly cotton which is the main wealth of the country) that provide the country with the necessary foreign exchange revenues, also added to the regional economic imbalances, and increased income inequalities inside the country. Furthermore, the policy packages imposed by the international donors (e.g. IMF and World Bank) as a condition for economic support aggravated the situation and resulted in further disturbances to the economic and social stability. The overall economic and social conditions are worsened by the successive seasons (1982/86) of poor rainfall, drought and desertification.

2. In the field of employment, the agricultural sector proved to be the leading sector in employing the largest portion of people in the working age (over 15 years of age). One should mention here that the figures provided in the analysis (Table 2.5 and Table 2.12) underestimate the actual levels of employment, since large numbers of age 15 and below (Table 2.5) and even below 10 years of age (Table 2.12) exercise economic activities that generate income or, in cases of family and self employment, save spending on paid workers. Additionally, huge numbers of housewives and students were being recorded as "not in the labour force". This exclusion contradicts the mere fact that large numbers of housewives in the rural areas, particularly in the Central, Darfur, Kordofan and southern regions, work as family labourers in crop fields, and in the pastoral lands, looking after animals in different forms. Also, students in all regions

do some sort of work for money, or work in their own families business during their vacation. These large numbers of working students are not included in the statistics. Such data provide misleading conclusions regarding the actual size of the labour force in the Sudan.

3. In the field of data, statistics and information in the Sudan, the chapter shows that the information and statistical system is not yet mature. The system lacks the ability to provide sufficiently accurate and up to date information about the various population and socio-economic parameters badly needed in the process of development.
4. Almost half of the population of the country are below fifteen and over sixty years of age. Such an age structure puts a great burden on the other half (between 15 and 60) in carrying out the process of development in the country, and it is expected to slow down that process.

After the theoretical discussion in chapter three, chapter four used a methodology that is necessary in the study of inter-provincial or inter-regional migration. The findings of this chapter give an overall perspective and suggest topics and areas for more detailed investigation. Studies of this nature also emphasize the processes of population movement and their effects in terms of population change. Accordingly, its findings are likely to be of considerable interest to development planners and administrators concerned with the allocation of national, regional and provincial resources in the Sudan.

In the chapter, the 1983 census data on lifetime migration in the Sudan are used. The pattern of inter-provincial migration that emerged from the analysis is a very complex one. It gives rise to some important issues regarding the direction

of future research in the field. The main interesting feature of inter-provincial migration in the Sudan is the reciprocal exchanges of population between *every* pair of provinces, and the existence of high levels of out-migration in some areas of net in-migration (Gezira) as well as areas of net-out migration. Also, the analysis draws attention to the need for further consideration of the problems that are associated with the analysis of complex data sets and gives some indication of the methods that might be used in future research. The discussion and procedures used in this study are simple and known, but they give results which can be tested by more rigorous methods.

Other findings embedded in the analysis are:

- a. In the spatial structure of the population movement in the Sudan, inter-provincial migration involved about 9% of the total population. These movements are in 306 flows averaging 5,168 persons. There is a wide range of values on either side of this average from a minimum of 2 to a maximum of 100,469.
- b. Some 71.1% of the movements are formed by 39 flows averaging 46,288. The remaining 267 flows share about only 29% of all the moves and range in size between 2 and 9,943 and averaging 1,944. As much as 32.7% of all inter-provincial movement is embedded in the 7 top main flows, ranging in size from 54,949 to 100,469. Such figures show how the inter-provincial movement in the Sudan is dominated by a few large migration flows.
- c. Khartoum province (the province of the national capital) emerged as the top one in terms of the number of in-migrants, the size of the net-migration balance and the net-migration rate. At the other extreme, Northern province is singled out as the leading province in terms of the number of out-migrants, the net-

migration loss and the rate of net loss.

- d. The direction of the movements, and the volume of people involved reflect a general weak interaction between the northern provinces of the country and those in the south.
- e. The movements between the provinces of the country proved to be sex and age selective. Males have a higher propensity to migrate than females in all three stated broad age groups (0-14, 15-44 and 45+). Also, the middle age group of male migrants is the most mobile group, against the higher age group for females. For both sexes, those in the middle age group are the most likely to migrate.

Chapter five tackled the most important element of the Sudanese population movement, which is the rural-urban migration. The discussion showed that the pattern of urbanization in the Sudan has been greatly affected by the basic changes in the productive structure of the Sudan economy. The three main factors responsible for the rapid rate of growth of the urban centres are found to be net migration, natural increase and redrawing of town borders to encompass surrounding villages. The first factor is by far the most important, accounting for the greater part (3.2%) of the 6% annual urban growth rate.

Such rapid growth of urban centres affected these centres in terms of unemployment, inadequate housing supplies and social services, crime and delinquency, and the spread of squatter settlements. In the capital city, the migrant population is characterized by being dominated by males (62%) with a sex ratio of 163 against 142 for the whole resident population of the city. Migrants in the age group 15-44 have a sex ratio of 187 against only 108 for the resident population in the same

age group (Table 5.4).

The findings of the migrant household survey carried by the author in Khartoum conurbation showed that literacy rates are high among migrants of both sexes when compared with those prevailing in their home provinces. For males 7 years and over, the literacy rate was found to be as high as over 90%, against over 70% for females in the same age group. This was argued as reflecting the educational differences in opportunities and attainment between the two sexes. The educational system is blamed for not coping with the national developmental needs and, thus, not serving the developmental objectives expected from spread of education and reduction of illiteracy.

The findings of the survey also showed that the bulk of the migrant heads of households (51%) were found working in the informal sector, 19% in the private sector, and 30% in the public sector. The expansion of the informal sector was attributed to its characteristics of ease of entry and job change, labour intensive methods of production and distribution, traditional or easily acquired skills, and use of local materials and simple tools and machinery. At that point, and as this sector is advocated by some scholars and criticized by others, broad policy recommendations are proposed by the author to help in solving the controversy surrounding this sector.

The migrants in the survey were found to have links (e.g. sending money) with their home areas. These links and ties may vary in strength according to the length of stay in the capital city, according to the level of reward of migration, and according to other social and economic factors surrounding migrants both at home and in the town. The strength of the influence of relatives and friends in

attracting others to the town was evident from the fact that every 10 of the 350 heads of households interviewed had brought 15 others in their wake, giving rise to some form of chain migration. The provision of help and advice by early migrants to the new comers was judged to be an important factor in reducing migration risks and cost. In general, almost half of the migrants (49%) stated that they benefited from their migration to the town in both material and social terms.

The forces behind rural-urban migration and the tendency for growth of towns is argued to be largely due to the rural push, and to a lesser extent, urban pull. The latter is evident from the concentration of all types of services, leading to the rise of expectation of better employment opportunities and wages. The rural push factors relate to the economic disparities between town and village. This has resulted in lower job opportunities, lower wages, and non existence of suitable jobs for various qualifications in rural areas. All in all, the economic motive is mainly behind both push and pull factors.

Generally, the scale of rural-urban migration and its proportion of all types of moves in the country are forecast in the discussion as not being expected to fall in the foreseeable future. This forecast is backed by the fact that all the forces affecting the decision to migrate persist and are on the increase, such as educational disparities between rural and urban centres, wage differentials, job opportunities, etc.. Additionally, agriculture in some rural areas (e.g. areas of the Gezira scheme) is becoming less and less labour intensive, and may lead in the long run to redundant labour. The discussion also urges planners to understand that any radical solution to the problem of unplanned and rapid urban growth, and the direct and indirect implications of rural-urban migration should be made within the context of answering the question of underdevelopment in the whole country.

Given that understanding, some policy recommendations are proposed at the end.

Another form of Sudanese population movement is discussed in chapter six. This is the seasonal labour migration to the Gezira scheme for cotton picking. The discussion investigated the nature of this movement and its pattern which is related to the operation of cotton picking. These patterns are discussed in relation to the labour market mechanism. As in the previous chapters, the listing of some of the findings here does not mean that these are the only important ones. Other important findings are embedded in the chapter, but here are selected findings:

- i. The agricultural sector as a whole is the first in the field of employment, wherein over 80% of the employed labour force work.
- ii. The total labour force involved in the seasonal operation of cotton picking in the Gezira scheme was almost half a million in 1984/85, of which seasonal migrant workers were more than 45%. In the same season family labour was 30.5%, and local labour 20.3%. Throughout seven seasons (1965/66-71/72) the share of the migrant labour in the total labour engaged in cotton picking was an average of 52%, against 34% family labour and 14% local labour.
- iii. Seasonal migrant workers are paid in cash and kind, but their wages are usually lower than those paid to local and family labourers. Central planners are accused by some scholars of deliberate neglect of the traditional agricultural sector in order to secure and preserve the seasonal flow of cheap labour to the modern irrigated schemes. The discussion attempted to reflect a counter argument to that of the ILO mission (1976) whose report stated that the supply of seasonal migrant labour is governed by a perfect labour market mechanism. It could be argued to the contrary that pressing needs and bad economic con-

ditions in the traditional sector compel labourers to migrate despite the lower wages offered.

- iv. Wages offered to seasonal migrant workers are found to be very low and growing at a lower rate than inflation rates in the country. The discussion attributes this underpayment of wages to the weak bargaining position of migrant labour. When their bargaining power improves (by adoption of policies that improve the socio-economic conditions in the traditional sector) higher and fair wages will automatically be set.
- v. The findings of the author's survey in the Gezira scheme revealed that the seasonal migrant labour comes to the scheme in families and groups of relatives (over 90% of them). Of the three types of workers, more than three quarters were females; in the migrant workers group, females were about 66%. Young children (below the age of seven) in the migrant group were found participating in the picking operation. The daily average earnings of a migrant worker were calculated to be about £s7.5 compared with £s9.6 for family labour, and £s11.3 for local.
- vi. The movement to the scheme was found to be repetitive and consistent. That is, over 80% of the migrant labour stated that they had previously come to pick cotton. The number of seasons attended ranged between one and 55, with an average attendance of 13 seasons. The consistency of the movement is shown in the fact that more than 65% of the 235 migrant workers had worked with the same tenant in the seasons preceding the survey. These ranged between one and thirty, giving an average of six seasons being worked with the same tenant.

vii. The mode of living of the migrant worker was found to be different from that prevailing in 1980 and earlier. Before 1980, about 71% of the seasonal migrant labourers were managing mixed household economies by combining animal husbandry with traditional agriculture to maintain living in their home areas. In the 1989 survey, about 94% of them were mainly dependent on traditional agriculture. This change is attributed to the establishment of the Rahad scheme in 1980, an event which led the semi-nomads to stay and work there rather than migrate to the scheme. So, the mixture of seasonal migrants to the Gezira scheme is becoming more and more confined to those from the western and central provinces.

7.2 Concluding Remarks and Future Work

Throughout the discussion, three types of the dynamic processes of population movements in the Sudan are discussed. These three types are the inter-provincial, rural-urban and seasonal migration. Some of the main features of the demographic structures and socio-economic conditions of the migrants involved in the process are also mentioned. The picture that emerged is not a simple one. All these processes are taking place in a less developed economy, with low population density, an unbalanced type of development, a very low level of industrialization and heavy reliance on the export of one primary crop which is cotton.

Many policies are suggested by the author to deal with the various problems arising from or associated with the process of internal migration in the Sudan, and the uneven distribution of development between its regions. In this conclusion, no additional proposals or policy recommendations will be mentioned. Only some elements of future research will be proposed which include:

1. A widely range investigation is needed (using published data and findings of various studies in the area) of the economic and non-economic factors that directly and indirectly led to the formation of the current direction and volume of the population movements towards certain regions or towards certain urban centres. This should take into account internal and external factors that might be associated with the process of population movements in the Sudan.
2. A comprehensive survey in the Gezira scheme to investigate the effect of the introduction of the "individual account system" on the mobilization of the family, and local labour into the various agricultural operations, particularly cotton picking, and the resulting effects (if any) on the seasonal migrant cotton pickers.
3. It is proposed that research should also be conducted in the neighbouring Rahad scheme. This should investigate the current sources of labour needed in cotton picking and other agricultural operations. By comparing the findings of this research with those derived from research on the Gezira scheme, the picture would be clearer as to whether there will be any abnormal future shortages in the labour supply in the Gezira scheme as a result of the competition of the recent rival scheme (Rahad) in the labour market.

Appendices

Appendix A

In- and Out-migration Balance and Rate by Sex, Age and Province

A.1 Tables

A.1.1 Males Aged 0-14

Table A

I	II	III	IV	V	VI	VII	VIII
Province of Place of Birth	People Born & Live in	In- Migrants	Total Popul- ation	Out- Migrants	(III)/ (IV) × 1000	(V)/[(II) + (V)] × 1000	(III)- (V) Net
Northern	86919	2862	89781	15034	32	147	-12172
Nile	127680	4761	132441	18761	36	128	-14000
Red Sea	51557	13660	65217	2632	209	49	11028
Kassala	286228	23635	309863	8986	76	30	14649
Khartoum	278165	55533	333698	14426	166	49	41107
Gezira	430862	17753	448615	14845	40	33	2908
Blue Nile	222186	11452	233638	8169	49	35	3283
White Nile	183406	6819	190225	13753	36	70	-6934
S. Kordofan	231904	12157	244061	15622	50	63	-3465
N. Kordofan	307018	5547	312565	16936	18	52	-11389
N. Darfur	259647	4127	263774	19287	16	69	-15160
S. Darfur	324294	18385	342679	9094	54	27	9291
Bahr al Ghazal	393770	3256	397026	4174	8	10	-918
Lakes	185117	6393	191510	1868	33	10	4525
Upper Nile	184594	8599	193193	3572	45	19	5027
Jongley	195869	872	196741	3052	4	15	-2180
E. Equatoria	246850	5950	252800	5648	2	22	302

Source: Derived from the 1983 Housing Population Census National Report, 1989

A.1.2 Males Aged 15 - 44

Table B

I	II	III	IV	V	VI	VII	VIII
Province of Place of Birth	People Born & Live in	In- Migrants	Total Popul- ation	Out- Migrants	(III)/ (IV) × 1000	(V)/[(II) +(V)] × 1000	(III)- (V) Net
Northern	52512	4403	56915	70304	77	572	-65901
Nile	89714	10096	99810	43448	101	326	-33352
Red Sea	51593	30445	82038	6369	371	110	24076
Kassala	179149	84290	263439	16844	320	86	67446
Khartoum	192164	253040	445204	11380	568	56	241660
Gezira	314238	65767	380005	51128	173	140	14639
Blue Nile	151506	28320	179826	21163	157	123	7157
White Nile	121504	20239	141743	40964	1437	252	-20725
S. Kordofan	109643	11916	121559	62772	98	364	-50856
N. Kordofan	188759	10625	199384	58043	53	235	-47418
N. Darfur	156838	4863	161701	65332	30	294	-60469
S. Darfur	220015	32041	252056	48883	127	182	-16842
Bahr al Ghazal	269317	7274	276591	13454	26	48	-6180
Lakes	141060	10689	151749	7202	70	49	3487
Upper Nile	137081	20761	157842	10635	132	72	10126
Jongley	165070	659	165729	10063	4	57	-9404
E. Equatoria	188333	12928	201261	10567	64	53	2361
W. Equatoria	64728	4638	69366	6969	67	97	-2331

Source: Derived from the 1983 Housing Population Census National Report, 1989

A.1.3 Males Aged 45+

Table C

I	II	III	IV	V	VI	VII	VIII
Province of Place of Birth	People Born & Live in	In- Migrants	Total Popul- ation	Out- Migrants	(III)/ (IV) × 1000	(V)/[(II) +(V)] × 1000	(III)- (V) Net
Northern Nile	32990	1020	34010	38863	30	541	-37843
Red Sea	43341	4804	48145	32585	98	429	-27781
Kassala	16060	7490	23550	2125	318	117	5365
Khartoum	60208	38358	98566	4247	389	66	34111
Gezira	53408	54485	107893	5564	505	94	48921
Blue Nile	113476	44447	157923	12480	281	99	31967
White Nile	51389	15547	66936	6375	232	110	9172
S. Kordofan	43289	11278	13763	13994	819	244	-2716
N. Kordofan	75330	6890	82220	12960	84	147	-6070
N. Darfur	82012	6693	88705	14450	75	150	-7757
S. Darfur	74101	2300	76401	25065	30	253	-22765
Bahr al Ghazal	88598	12568	101166	21033	124	192	-8465
Lakes	84354	1390	85744	1527	16	18	-137
Upper Nile	37352	2765	40117	868	69	23	1897
Jongley	40090	11164	51254	1469	218	35	9695
E. Equatoria	39180	58	39238	1028	1	26	-970
W. Equatoria	47777	1484	49261	1226	30	25	258
	28702	945	29647	1131	32	38	-186

Source: Derived from the 1983 Housing Population Census National Report, 1989

A.1.4 Females Aged 0-14

Table D

I	II	III	IV	V	VI	VII	VIII
Province of Place of Birth	People Born & Live in	In- Migrants	Total Popul- ation	Out- Migrants	(III)/ (IV) × 1000	(V)/[(II) + (V)] × 1000	(III)- (V) Net
Northern Nile	91419	2801	94220	14406	30	136	-11605
Red Sea	128546	4498	133044	13023	34	92	-8525
Kassala	46169	8089	54258	2322	149	48	5767
Khartoum	269162	21212	290374	7798	73	28	13414
Gezira	268617	52401	321018	13458	163	48	38943
Blue Nile	433993	17008	451001	14184	38	32	2824
White Nile	215716	11164	226880	7547	49	34	3617
S. Kordofan	180201	6884	187085	12614	37	65	-5730
N. Kordofan	224561	10566	235127	14025	45	59	-3459
N. Darfur	312621	5457	318078	16504	17	50	-11047
S. Darfur	263007	4052	267059	17916	15	64	-13864
S. Darfur	317517	16551	334068	8546	50	26	8005
Bahr al Ghazal Lakes	330389	3064	333453	3372	9	10	-308
Upper Nile	161251	7069	168320	1714	42	11	5355
Jongley	145966	8175	154141	2986	53	20	5189
E. Equatoria	160624	890	161514	3889	6	24	-2999
W. Equatoria	227078	5742	232820	5992	25	26	-250
	58887	2015	60902	1630	33	27	385

Source: Derived from the 1983 Housing Population Census National Report, 1989

A.1.5 Females Aged 15 - 44

Table E

I	II	III	IV	V	VI	VII	VIII
Province of Place of Birth	People Born & Live in	In- Migrants	Total Popul- ation	Out- Migrants	(III)/ (IV) × 1000	(V)/[(II) +(V)] × 1000	(III)- (V) Net
Northern	85776	2819	88595	63844	32	427	-61025
Nile	123559	10124	133683	32764	76	210	-22640
Red Sea	46916	18360	65276	5850	281	111	12510
Kassala	183966	75506	259472	13506	291	68	62000
Khartoum	201653	149932	351585	11922	426	56	138010
Gezira	368872	50348	419220	27569	120	70	22779
Blue Nile	170959	26746	197705	13941	135	75	12805
White Nile	149686	15625	165311	33206	95	182	-17581
S. Kordofan	193286	11061	204347	41820	54	178	-30759
N. Kordofan	257293	9970	267263	36272	37	124	-26302
N. Darfur	255048	5008	260056	45044	19	150	-40036
S. Darfur	284287	31310	315597	27700	99	89	3610
Bahr al Ghazal	299423	5189	304612	6196	17	20	-1007
Lakes	173279	4424	177703	4416	25	25	8
Upper Nile	144236	20278	164514	5335	123	36	14943
Jongley	155420	1300	156720	5054	8	31	-3754
E. Equatoria	229613	9982	239595	6031	42	26	3951
W. Equatoria	85630	3319	88949	5865	37	64	-2546

Source: Derived from the 1983 Housing Population Census National Report, 1989

A.1.6 Females Aged 45+

Table F

I	II	III	IV	V	VI	VII	VIII
Province of Place of Birth	People Born & Live in	In- Migrants	Total Popul- ation	Out- Migrants	(III)/ (IV) × 1000	(V)/[(II) +(V)] × 1000	(III)- (V) Net
Northern	41520	810	42330	28038	19	403	-27228
Nile	45338	3558	48896	10133	73	183	-6575
Red Sea	13461	4417	17878	1453	247	97	2964
Kassala	43822	25783	69605	2712	370	58	23071
Khartoum	47850	35018	82868	3181	423	62	31837
Gezira	103165	17982	121147	6578	148	60	11404
Blue Nile	45697	8214	53911	4685	152	93	3529
White Nile	37633	17430	55063	10137	317	212	7293
S. Kordofan	84597	4424	89021	5556	50	62	-1132
N. Kordofan	81263	4326	85589	11106	51	120	-6780
N. Darfur	93538	2565	96103	16665	27	151	-14100
S. Darfur	88504	10764	99268	18446	108	172	-7682
Bahr al Ghazal	59509	867	60376	886	14	15	-19
Lakes	31963	1389	33352	568	417	17	821
Upper Nile	28059	5979	34038	549	176	19	5430
Jongley	30293	84	30377	1756	3	55	-1672
E. Equatoria	39224	992	40216	520	25	13	472
W. Equatoria	28933	290	29223	861	10	29	-571

Source: Derived from the 1983 Housing Population Census National Report, 1989

A.1.7 Ranking of the Gross Migration Flows among the 18 Provinces

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
1	Khartoum	Northern	100469
2	Khartoum	S. Kordofan	84340
3	S. Darfur	N. Darfur	78565
4	Khartoum	Gezira	68013
5	Khartoum	N. Kordofan	66095
6	Khartoum	Nile	62589
7	Kassala	Northern	54949
8	Khartoum	White Nile	38216
9	Gezira	White Nile	36503
10	Khartoum	S. Darfur	32761
11	Khartoum	N. Darfur	32642
12	Kassala	Nile	31420
13	Gezira	N. Darfur	30557
14	Upper Nile	White Nile	29152
15	Red Sea	Northern	25313
16	Khartoum	Blue Nile	23402
17	Blue Nile	S. Darfur	21408
18	Blue Nile	Gezira	19523
19	Kassala	N. Darfur	18851
20	Khartoum	Kassala	18726
21	Gezira	Northern	18417
22	Gezira	S. Darfur	17854
23	Nile	Northern	15845
24	Kassala	S. Darfur	15693
25	Gezira	N. Kordofan	15394
26	Gezira	Blue Nile	15152
27	N. Kordofan	S. Kordofan	14872
28	S. Kordofan	N. Kordofan	14207
29	Gezira	Khartoum	13960
30	S. Darfur	N. Kordofan	11818

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
31	Gezira	S. Kordofan	11695
32	Red Sea	Nile	11527
33	Khartoum	B. Ghazal	11475
34	Khartoum	Upper Nile	10431
35	Kassala	S. Kordofan	10341
36	Kassala	Gezira	10331
37	White Nile	N. Kordofan	10275
38	Blue Nile	Kassala	10175
39	Gezira	Nile	10122
40	Lakes	Jongley	9943
41	E. Equatoria	W. Equatoria	9274
42	S. Kordofan	S. Darfur	8677
43	Blue Nile	N. Darfur	8614
44	Blue Nile	S. Kordofan	8172
45	Khartoum	E. Equatoria	8016
46	N. Darfur	S. Darfur	7844
47	White Nile	S. Kordofan	7841
48	White Nile	Gezira	7735
49	White Nile	S. Darfur	7715
50	B. Ghazal	Lakes	7469
51	Red Sea	S. Kordofan	7400
52	Kassala	Blue Nile	7400
53	Red Sea	Kassala	7296
54	Lakes	E. Equatoria	7287
55	Kassala	Red Sea	7112
56	Kassala	N. Kordofan	6867
57	Upper Nile	Jongley	6791
58	Gezira	Kassala	6619
59	Blue Nile	N. Kordofan	6534
60	Khartoum	Red Sea	6353
61	Upper Nile	N. Kordofan	6294

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
62	White Nile	Northern	6026
63	W. Equatoria	E. Equatoria	5817
64	Upper Nile	S. Kordofan	5679
65	Red Sea	Khartoum	5657
66	N. Kordofan	N. Darfur	5452
67	S. Kordofan	Khartoum	5322
68	Kassala	Khartoum	5163
69	Lakes	White Nile	5128
70	Upper Nile	S. Darfur	5066
71	Blue Nile	White Nile	4992
72	Nile	Khartoum	4829
73	White Nile	N. Darfur	4824
74	S. Kordofan	Gezira	4584
75	White Nile	Blue Nile	4552
76	Upper Nile	N. Darfur	4443
77	White Nile	Khartoum	4419
78	Northern	N. Kordofan	4409
79	Upper Nile	Blue Nile	4386
80	Blue Nile	Khartoum	4140
81	E. Equatoria	Jongley	3826
82	Blue Nile	Northern	3734
83	Upper Nile	Gezira	3687
84	Khartoum	Lakes	3628
85	N. Kordofan	Khartoum	3448
86	Nile	S. Kordofan	3322
87	S. Darfur	Khartoum	3302
88	Nile	Red Sea	3261
89	E. Equatoria	B. Ghazal	3236
90	N. Kordofan	S. Darfur	3162
91	Blue Nile	Nile	3085
92	White Nile	Nile	2936

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
93	Red Sea	N. Kordofan	2816
94	S. Kordofan	Kassala	2796
95	N. Kordofan	Gezira	2782
96	N. Kordofan	B. Ghazal	2761
97	S. Darfur	B. Ghazal	2751
98	White Nile	Upper Nile	2702
99	S. Darfur	S. Kordofan	2584
100	Red Sea	Gezira	2553
101	Lakes	B. Ghazal	2479
102	N. Kordofan	Northern	2409
103	Northern	Khartoum	2397
104	S. Kordofan	N. Darfur	2388
105	B. Ghazal	W. Equatoria	2350
106	Nile	Kassala	2344
107	S. Darfur	Gezira	2326
108	Khartoum	W. Equatoria	2208
109	Nile	Gezira	2081
110	N. Kordofan	White Nile	2067
111	Khartoum	Jongley	2044
112	Northern	Nile	2003
113	E. Equatoria	Upper Nile	1969
114	S. Kordofan	Nile	1963
115	N. Darfur	N. Kordofan	1959
116	S. Darfur	Kassala	1908
117	N. Kordofan	Nile	1903
118	Lakes	W. Equatoria	1879
119	S. Kordofan	B. Ghazal	1873
120	S. Kordofan	White Nile	1857
121	N. Darfur	Khartoum	1818
122	B. Ghazal	S. Darfur	1801
123	Lakes	N. Kordofan	1737

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
124	Upper Nile	Khartoum	1711
125	E. Equatoria	Lakes	1687
126	Gezira	Upper Nile	1652
127	E. Equatoria	Khartoum	1601
128	Kassala	White Nile	1594
129	Lakes	Upper Nile	1531
130	Upper Nile	E. Equatoria	1439
131	B. Ghazal	E. Equatoria	1367
132	B. Ghazal	S. Kordofan	1323
133	Jongley	Upper Nile	1297
134	S. Kordofan	Upper Nile	1268
135	B. Ghazal	N. Kordofan	1235
136	N. Darfur	Gezira	1221
137	N. Kordofan	Blue Nile	1220
138	Lakes	Khartoum	1216
139	W. Equatoria	B. Ghazal	1211
140	S. Darfur	White Nile	1206
141	Red Sea	Blue Nile	1191
142	S. Darfur	Blue Nile	1182
143	Jongley	E. Equatoria	1172
144	S. Darfur	Nile	1159
145	White Nile	Kassala	1131
146	Blue Nile	Upper Nile	1114
147	S. Darfur	Northern	1106
148	Upper Nile	B. Ghazal	1098
149	Nile	N. Kordofan	1074
150	Upper Nile	Kassala	1066
151	N. Darfur	S. Kordofan	1054
152	S. Kordofan	Blue Nile	1031
153	Red Sea	S. Darfur	1012
154	Northern	S. Kordofan	1007

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
155	W. Equatoria	Upper Nile	994
156	B. Ghazal	Gezira	993
157	B. Ghazal	N. Darfur	983
158	W. Equatoria	Lakes	941
159	Upper Nile	W. Equatoria	900
160	Gezira	Red Sea	853
161	S. Kordofan	Red Sea	833
162	Gezira	B. Ghazal	816
163	W. Equatoria	White Nile	773
164	Nile	S. Darfur	766
165	N. Kordofan	Kassala	752
166	Gezira	E. Equatoria	738
167	White Nile	E. Equatoria	732
168	Northern	Kassala	731
169	Red Sea	White Nile	724
170	Upper Nile	Northern	724
171	B. Ghazal	White Nile	716
172	Red Sea	N. Darfur	705
173	Nile	White Nile	696
174	B. Ghazal	Khartoum	695
175	N. Darfur	B. Ghazal	665
176	Northern	Red Sea	663
177	White Nile	B. Ghazal	658
178	Jongley	Lakes	632
179	Northern	Gezira	624
180	Blue Nile	B. Ghazal	610
181	Kassala	E. Equatoria	586
182	Nile	Blue Nile	553
183	W. Equatoria	Nile	528
184	S. Kordofan	Northern	527
185	N. Darfur	Kassala	525

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
186	Blue Nile	Jongley	498
187	Kassala	B. Ghazal	492
188	Red Sea	B. Ghazal	480
189	Nile	N. Darfur	476
190	White Nile	Jongley	475
191	Blue Nile	Red Sea	473
192	Blue Nile	E. Equatoria	472
193	N. Darfur	Northern	467
194	Lakes	S. Kordofan	453
195	E. Equatoria	White Nile	446
196	S. Kordofan	E. Equatoria	445
197	W. Equatoria	Gezira	442
198	E. Equatoria	S. Kordofan	438
199	E. Equatoria	S. Darfur	434
200	Kassala	Upper Nile	428
201	S. Darfur	E. Equatoria	428
202	Red Sea	E. Equatoria	424
203	E. Equatoria	N. Kordofan	420
204	Northern	W. Equatoria	415
205	Upper Nile	Lakes	415
206	N. Kordofan	Upper Nile	372
207	Nile	Upper Nile	369
208	E. Equatoria	Gezira	369
209	Gezira	Jongley	366
210	B. Ghazal	Upper Nile	361
211	W. Equatoria	Blue Nile	359
212	N. Kordofan	E. Equatoria	356
213	S. Darfur	Upper Nile	343
214	B. Ghazal	Blue Nile	335
215	S. Darfur	Lakes	333
216	N. Darfur	Blue Nile	332

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
217	Lakes	Blue Nile	330
218	Nile	E. Equatoria	324
219	N. Darfur	White Nile	318
220	W. Equatoria	Red Sea	301
221	White Nile	Red Sea	300
222	Northern	N. Darfur	299
223	E. Equatoria	Nile	288
224	Red Sea	Upper Nile	285
225	White Nile	W. Equatoria	284
226	Upper Nile	Nile	281
227	Nile	B. Ghazal	270
228	E. Equatoria	Northern	264
229	B. Ghazal	Northern	238
230	E. Equatoria	N. Darfur	224
231	N. Kordofan	Lakes	223
232	White Nile	Lakes	222
233	B. Ghazal	Nile	209
234	Kassala	Lakes	204
235	Northern	White Nile	200
236	Kassala	W. Equatoria	199
237	N. Kordofan	W. Equatoria	191
238	Red Sea	Lakes	190
239	Kassala	Jongley	189
240	S. Kordofan	W. Equatoria	186
241	E. Equatoria	Blue Nile	183
242	Nile	W. Equatoria	181
243	S. Darfur	Red Sea	181
244	B. Ghazal	Red Sea	179
245	Blue Nile	Lakes	176
246	N. Kordofan	Red Sea	175
247	N. Darfur	Nile	175

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
248	N. Darfur	E. Equatoria	171
249	Gezira	Lakes	169
250	Jongley	Khartoum	166
251	B. Ghazal	Jongley	164
252	N. Darfur	Lakes	156
253	Northern	Blue Nile	152
254	W. Equatoria	Khartoum	146
255	W. Equatoria	Jongley	138
256	Jongley	W. Equatoria	135
257	Northern	E. Equatoria	133
258	S. Kordofan	Lakes	130
259	S. Darfur	Jongley	127
260	E. Equatoria	Kassala	121
261	W. Equatoria	S. Kordofan	120
262	B. Ghazal	Kassala	113
263	Lakes	Gezira	105
264	Blue Nile	W. Equatoria	102
265	Upper Nile	Red Sea	99
266	Northern	S. Darfur	97
267	Nile	Jongley	94
268	W. Equatoria	N. Kordofan	93
269	Northern	B. Ghazal	91
270	Jongley	B. Ghazal	89
271	Red Sea	W. Equatoria	84
272	N. Darfur	Upper Nile	84
273	Gezira	W. Equatoria	80
274	Lakes	N. Darfur	79
275	Red Sea	Jongley	77
276	Northern	Upper Nile	76
277	Jongley	N. Darfur	67
278	S. Darfur	W. Equatoria	58

(continue...)

Table G

Ranks of Flows	Province of Destination	Province of Origin	Numbers in the Flow
279	E. Equatoria	Red Sea	54
280	N. Kordofan	Jongley	54
281	Nile	Lakes	49
282	S. Kordofan	Jongley	44
283	Jongley	S. Kordofan	43
284	N. Darfur	Red Sea	41
285	Jongley	White Nile	38
286	Lakes	S. Darfur	37
287	W. Equatoria	S. Darfur	31
288	Jongley	Northern	24
289	Lakes	Northern	24
290	W. Equatoria	N. Darfur	23
291	Lakes	Kassala	23
292	W. Equatoria	Northern	21
293	Jongley	Gezira	20
294	N. Darfur	W. Equatoria	18
295	Lakes	Nile	15
296	Northern	Lakes	14
297	W. Equatoria	Kassala	14
298	N. Darfur	Jongley	14
299	Jongley	Blue Nile	14
300	Jongley	N. Kordofan	12
301	Jongley	Nile	8
302	Jongley	Kassala	8
303	Northern	Jongley	6
304	Jongley	S. Darfur	2
305	Jongley	Red Sea	2
306	Lakes	Red Sea	2

A.1.8 Net-Migration Flows Among the 18 Provinces

Table H

		Province of Usual Residence																		
Province of Birth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
	North-ern	Nile	Red Sea	Kassala	Khartoum	Gezira	Blue Nile	White Nile	South Krdofan	North Kordofan	North Darfur	South Darfur	Bahr al Ghazal	Lakes	Upper Nile	Jongley	East Equatoria	West Equatoria	Losses	
1 Northern		13842	24650	54218	98072	17793	3582	5826	-480	-2000	168	1009	147	10	648	18	131	-394	217240	
2 Nile	-13842		8266	29076	57760	8041	2532	2240	-1359	829	-301	393	-61	-34	-88	-86	-36	347	9377	
3 Red Sea	-24650	-8266		-184	696	-1700	-718	-424	-6567	-2641	-664	-831	-301	-188	-186	-75	-370	217	-46852	
4 Kassala	-54218	-29076	184		13563	-3712	2775	-463	-7545	-6115	-18326	-13785	-379	-181	638	-181	-465	-185	-117471	
5 Khartoum	-98072	-57760	-696	-13563		-54053	-19262	-33797	-79018	-62647	-30824	-29459	-10780	-2412	-8720	-1878	-6415	-2062	-511418	
6 Gezira	-17793	-8041	1700	3712	54053		4371	-28768	-7111	-12612	-29336	-15528	177	-64	2035	-346	-369	362	-53558	
7 Blue Nile	-3582	-2532	718	-2775	19262	-4371		-440	-7141	-5314	-8282	-20226	-275	154	3272	-484	-289	257	-32048	
8 White Nile	-5826	-2240	424	463	33797	28768	440		-5985	-8208	-4506	-6509	58	4906	26450	-437	-286	489	61799	
9 South Kordofan	480	1359	6567	7545	79018	7111	7141	5984		1665	-1334	-6093	-550	323	4411	-1	-7	-66	112553	
10 North Kordofan	2000	-829	2641	6115	62647	12612	5314	8208	-665		-3493	8656	-1526	1514	5922	-42	64	-98	109040	
11 North Darfur	-168	301	664	18326	30824	29336	8282	4506	1334	3493		70721	318	-77	4359	53	53	5	172330	
12 South Darfur	-1009	-693	831	13785	29459	15528	20226	6509	6093	-8656	-70721		-950	-296	4723	-125	6	-27	14983	
13 Bahr al Ghazal	-147	61	301	379	10780	-177	275	-58	550	1526	-618	950		-4990	737	-75	1869	-1139	10524	
14 Lakes	-10	34	188	181	2412	64	-154	-4906	-323	-1514	77	296	4990		-1116	-9311	-5600	-938	-15630	
15 Upper Nile	-648	88	186	-638	8720	-2035	-3272	-26450	-4411	-592	-4359	-4723	-737	1116		-5494	530	94	-47955	
16 Jongley	-18	86	75	181	1878	346	484	437	1	42	-53	125	75	9311	5494		2654	3	21121	
17 East Equatoria	-131	36	370	465	6415	369	289	286	7	-64	-53	-6	-1869	5600	-530	-2654		-3457	5073	
18 West Equatoria	394	-347	-217	185	2062	-362	-257	-489	66	98	-5	27	1139	938	-94	-3	3457		6592	
Gains	-217240	-93677	46852	117471	511418	53558	32048	-61799	-112553	-109040	-172330	-14983	-10524	15630	47955	-21121	-5073	6592		

Source: Derived from Table 4.1

A.1.9 Ranking of the Net-Migration Flows Between the 18 Provinces (1983)

Table I

Gainer	Net Flows	Loser	Gainer	Net Flows	Loser
Khartoum	98072	Northern	Upper Nile	5922	N. Kordofan
Khartoum	79018	S. Kordofan	White Nile	5826	Northern
S. Darfur	70721	N.Darfur	Lakes	5600	E. Equatoria
Khartoum	62647	N. Kordofan	Upper Nile	5494	Jongley
Khartoum	57760	Nile	Blue Nile	5314	N. Kordofan
Kassala	54218	Northern	Bahr al Ghazal	4990	Lakes
Khartoum	54053	Gezira	Lakes	4906	White Nile
Khartoum	33797	White Nile	Upper Nile	4723	S. Darfur
Khartoum	30824	N.Darfur	White Nile	4506	N.Darfur
Khartoum	29459	S. Darfur	Upper Nile	4411	S. Kordofan
Gezira	29336	N.Darfur	Blue Nile	4371	Gezira
Kassala	29076	Nile	Upper Nile	4359	N.Darfur
Gezira	28768	White Nile	Kassala	3712	Gezira
Upper Nile	26450	White Nile	Blue Nile	3582	Northern
Red Sea	24650	Northern	N. Kordofan	3493	N. Darfur
Blue Nile	20226	S. Darfur	E. Equatoria	3457	W. Equatoria
Khartoum	19262	Blue Nile	Upper Nile	3272	Blue Nile
Kassala	18326	N.Darfur	Blue Nile	2775	Kassala
Gezira	17793	Northern	E. Equatoria	2654	Jongley

Source: Derived from Table H (continue...)

Table I

Gainer	Net Flows	Loser	Gainer	Net Flows	Loser
Gezira	15528	S. Darfur	Red Sea	2641	N. Kordofan
Nile	13842	Northern	Blue Nile	2532	Nile
Kassala	13785	S. Darfur	Khartoum	2412	Lakes
Khartoum	13563	Kassala	White Nile	2240	Nile
Gezira	12612	N. Kordofan	Khartoum	2062	W. Equatoria
Red Sea	10864	Nile	Upper Nile	2035	Gezira
Khartoum	10780	Bahr al Ghaza	Northern	2000	N. Kordofan
Lakes	9311	Jongley	Khartoum	1878	Jongley
Khartoum	8720	Upper Nile	E. Equatoria	1869	Bahr al Ghazal
S. Darfur	8656	N. Kordofan	Red Sea	1700	Gezira
Blue Nile	8282	N.Darfur	N. Kordofan	1526	Bahr al Ghazal
White Nile	8208	N. Kordofan	Lakes	1514	N. Kordofan
Gezira	8041	Nile	Nile	1359	S. Kordofan
Kassala	7545	S. Kordofan	S. Kordofan	1334	N.Darfur
Blue Nile	7141	S. Kordofan	Bahr al Ghazal	1139	W. Equatoria
Gezira	7111	S. Kordofan	Lakes	1116	Upper Nile
			S. Darfur	1009	Northern
Red Sea	6567	S. Kordofan	S. Darfur	950	Bahr al Ghazal
White Nile	6509	S. Darfur	Lakes	938	W. Equatoria

Source: Derived from Table H (continue...)

Table I

Gainer	Net Flows	Loser	Gainer	Net Flows	Loser
Khartoum	6415	E. Equatoria	Red Sea	831	S. Darfur
Kassala	6115	N. Kordofan	N. Kordofan	829	Nile
S. Kordofan	6093	S. Darfu	Upper Nile	737	Bahr al Ghazal
White Nile	5984	S. Kordofan	Red Sea	718	Blue Nile
			Khartoum	696	Red Sea
Upper Nile	5922	N. Kordofan	N. Kordofan	665	S. Kordofan
White Nile	5826	Northern	Red Sea	664	N.Darfur
Lakes	5600	E. Equatoria	Upper Nile	648	Northern
Upper Nile	5494	Jongley	Upper Nile	638	Kassala
Blue Nile	5314	N. Kordofan	S. Kordofan	550	Bahr al Ghazal
Bahr al Ghazal	4990	Lakes	E. Equatoria	530	Upper Nile
Lakes	4906	White Nile	W. Equatoria	489	White Nile
Upper Nile	4723	S. Darfur	Blue Nile	484	Jongley
White Nile	4506	N.Darfur	Northern	480	S. Kordofan
Upper Nile	4411	S. Kordofan	Kassala	465	E. Equatoria
Blue Nile	4371	Gezira	Kassala	463	White Nile
Upper Nile	4359	N.Darfur	Blue Nile	440	White Nile
Kassala	3712	Gezira	White Nile	437	Jongley
Blue Nile	3582	Northern	Red Sea	424	White Nile
N. Kordofan	3493	N.Darfur	Northern	394	W. Equatoria
E. Equatoria	3457	W. Equatoria	S. Darfur	393	Nile
Upper Nile	3272	Blue Nile	Kassala	379	Bahr al Ghazal
Blue Nile	2775	Kassala	Red Sea	370	E. Equatoria
E. Equatoria	2654	Jongley	Gezira	369	E. Equatoria
Red Sea	2641	N. Kordofan	W. Equatoria	362	Gezira

Source: Derived from Table H (continue...)

Table I

Gainer	Net Flows	Loser	Gainer	Net Flows	Loser
Blue Nile	2532	Nile	W. Equatoria	347	Nile
Khartoum	2412	Lakes	Gezira	346	Jongley
White Nile	2240	Nile	Lakes	323	S. Kordofan
Khartoum	2062	W. Equatoria	Bahr al Ghazal	318	N. Darfur
Upper Nile	2035	Gezira	Nile	301	N.Darfur
Northern	2000	N. Kordofan	Red Sea	301	Bahr al Ghazal
Khartoum	1878	Jongley	S. Darfur	296	Lakes
E. Equatoria	1869	Bahr al Ghaz	Blue Nile	289	E. Equatoria
Red Sea	1700	Gezira	White Nile	286	E. Equatoria
N. Kordofan	1526	Bahr al Ghaza	Blue Nile	275	Bahr al Ghazal
Lakes	1514	N. Kordofan	W. Equatoria	257	Blue Nile
Nile	1359	S. Kordofan	W. Equatoria	217	Red Sea
S. Kordofan	1334	N.Darfur	Red Sea	188	Lakes
Bahr al Ghazal	1139	W. Equatoria	Red Sea	186	Upper Nile
Lakes	1116	Upper Nile	Kassala	185	W. Equatoria
S. Darfur	1009	Northern	Red Sea	184	Kassala
S. Darfur	950	Bahr al Ghazal	Kassala	181	Lakes
Lakes	938	W. Equatoria	Kassala	181	Jongley
Red Sea	831	S. Darfur	Bahr al Ghazal	177	Gezira
N. Kordofan	829	Nile	N. Darfur	168	Northern
Upper Nile	737	Bahr al Ghazal	Lakes	154	Blue Nile
Red Sea	718	Blue Nile	Bahr al Ghazal	147	Northern
Khartoum	696	Red Sea	E. Equatoria	131	Northern

Source: Derived from Table H (continue...)

Table I

Gainer	Net Flows	Loser
S. Darfur	125	Jongley
N. Kordofan	98	W. Equatoria
W. Equatoria	94	Upper Nile
Nile	88	Upper Nile
Nile	86	Jongley
N. Darfur	77	Lakes
Bahr al Ghazal	75	Jongley
Red Sea	75	Jongley
S. Kordofan	66	W. Equatoria
E. Equatoria	64	N. Kordofan
Gezira	64	Lakes
Nile	61	Bahr al Ghazal
Bahr al Ghazal	58	White Nile
Jongley	53	N.Darfur
E. Equatoria	53	N.Darfur
N. Kordofan	42	Jongley
Nile	36	E. Equatoria
Nile	34	Lakes
S. Darfur	27	W. Equatoria
Jongley	18	Northern
Lakes	10	Northern
S. Kordofan	7	E. Equatoria
E. Equatoria	6	S. Darfur
W. Equatoria	5	N.Darfur
W. Equatoria	3	Jongley
S. Kordofan	1	Jongley
Total	1,121,968	

Source: Derived from Table H

A.1.10 Distances between the Capital Cities of the 18 provinces (in kms)

Table J

No.	Province of Birth	Province of Usual Residence					
		1	2	3	4	5	6
1	Northern	0					
2	Nile	400	0				
3	Red Sea	712	372	0			
4	Kassala	780	472	468	0		
5	Khartoum	460	312	660	352	0	
6	Gezira	580	408	660	232	128	0
7	B. Nile	924	696	912	272	468	352
8	W. Nile	608	484	804	332	176	148
9	S. Kordofan	904	904	1240	704	588	580
10	N. Kordofan	752	844	1200	768	548	588
11	N. Darfur	1048	1320	1688	1384	1100	11180
12	S. Darfur	1708	2496	1544	1148	904	964
13	B. Ghazal	1288	1380	1736	1212	1076	1084
14	Lakes	1368	1324	1628	1008	1016	968
15	Upper Nile	1200	1048	1284	648	768	680
16	Jongley	1440	1340	1600	964	1040	972
17	E. Equatoria	1660	1508	1756	1104	1228	1152
18	W. Equatoria	1632	1608	1908	1292	1296	1252

*Source: Measured by the Author on the Atlas Map
continue...*

Table J

No.	Province of Birth	Province of Usual Residence							
		7	8	9	10	11	12	13	14
1	Northern								
2	Nile								
3	Red Sea								
4	Kassala								
5	Khartoum								
6	Gezira								
7	B. Nile	0							
8	W. Nile	332	0						
9	S. Kordofan	520	436	0					
10	N. Kordofan	656	444	228	0				
11	N. Darfur	1300	1060	820	640	0			
12	S. Darfur	1024	260	524	380	312	0		
13	B. Ghazal	1008	940	512	522	644	408	0	
14	Lakes	748	844	468	548	1080	780	468	0
15	Upper Nile	378	600	456	676	1260	960	722	416
16	Jongley	689	504	576	800	1480	980	688	220
17	E. Equatoria	890	1060	804	1024	1492	1188	872	408
18	W. Equatoria	1028	1124	896	896	1180	908	512	286

Source: Measured by the Author on the Atlas Map

continue...

Table J

No.	Province of Birth	Province of Usual Residence			
		15	16	17	18
1	Northern				
2	Nile				
3	Red Sea				
4	Kassala				
5	Khartoum				
6	Gezira				
7	B. Nile				
8	W. Nile				
9	S. Kordofan				
10	N. Kordofan				
11	N. Darfur				
12	S. Darfur				
13	B. Ghazal				
14	Lakes				
15	Upper Nile	0			
16	Jongley	308	0		
17	E. Equatoria	468	224	0	
18	W. Equatoria	680	400	464	0

Source: Measured by the Author on the Atlas Map

Appendix B

Migrant Household Survey in Khartoum, 1989: Questionnaire:

B.0.1 Part A: Demographic Characteristics of All Members of the Hhs

Age			
Sex	(1) Male	(2) Female	
Place of birth	(1) Urban	(2) Rural	(3) Abroad
Literacy	(1) Read & write	(2) Illiterate	(3) Not applicable
Education Level	(1) Primary	(2) Intermediate	(3) Secondary
	(4) Post secondary		

B.0.2 Part B: Other Questions to be Answered by the Head of Household

4. Date of arrival in the city.....
5. Number of family members arrived with the head
6. Number of family members joined later
7. What are the most important four reasons behind contemporary migration to towns: Pull factors ?

(1) High opportunity jobs	(2) Higher wage rates	(3) Suitable jobs
(4) Better Services	(5) Better life	(6) Continue education
(7) Join relatives	(8) Others	

8. What are the most important four reasons behind contemporary migration to towns: Push factors ?

(1) Low opportunity jobs	(2) Lower wage rates	(3) No suitable jobs
(4) Poor services	(5) Social reasons	(6) Drought
(7) War	(8) Others	

9. Were you working before migrating to the city ? (1) Yes (2) No
10. If yeas, what was your job?
11. Do you work now? (1) Yes (2) No

12. If Yes, what is your job?
13. In which sector? (1) Public (2) Private (3) Own work
14. Is it different from that job at home? (1) Yes (2) No (3) Not applicable
15. In terms of income, compare between your current job and that at home? (1) Current income is higher (2) Current income is lower (3) Both are equal
16. How long did it take you to find a job after your arrival?.....months
17. Did you turn from one job to another in the city? (1) Yes (2) No
18. What was your first source of information about the city? (1) Relatives and friends (2) Mas media (3) Others (specify)....
19. Who helped you upon arrival? (1) Nobody (2) Relatives and friends (3) Others (specify)....
20. If helped, what type of help? (1) Free housing (2) Free meals (3) Finding job (4) Financial help (5) Others (specify)....
21. What was the cost of your travel to the city?.....
22. From where did you get that money? (1) Personal savings (2) Family support (3) Borrowings (4) Others (specify)...
23. If you have income sources at home, what are they? (1) Agricultural land (2) Animals (3) Others (specify)...
24. Have you any plan to invest your savings back at home? (1) Yes (2) No
25. If you have, then in what field? (1) Agriculture (2) Animals (3) Trade (4) Transport (5) Others (specify).....
26. Do you send money and/or goods to your family at home? (1) Yes (2) No
27. If Yes, do you send money in particular? (1) Yes (2) No
28. If Yes, how much per year?
29. Do you intend to stay here permanently or return home? (1) Stay (2) Return
30. Do you think that you have benefited from your migration to the city? (1) Yes (2) No

B.1 Definitions

B.1.1 Age

Age was obtained in number of years completed until the day of the interview, fractions of years are added up or down to a real number.

B.1.2 Length of stay in the Town

The interval of time upto the day of interview in complete years during which a person lived in the town.

B.1.3 Literacy

If a person seven years old or over could not read and write a simple Arabic sentence, was considered as illiterate.

Appendix C

The Gezira Scheme

C.1 Administrative divisions

The Gezira scheme lies between the Blue and the White Niles, and it stretches from Sennar on the western bank of the Blue Nile in the south, up to the out skirts of the province of Khartoum in the north, (see the map). The Gezira scheme is divided into two main schemes but both of them are under one administration, the Sudan Gezira Board (SGB) located in Barakat near Wad Medani. The two schemes are:

C.1.1 Gezira Main

This scheme is divided into big sections, and each section is divided further into a number of blocks ranging between six and ten each. These sections and their corresponding number of blocks are listed in table 5.13 below

C.1.2 El Managil Extension

This scheme was opened and annexed to the Gezira main in 1964. The rotation of the agricultural crops is different from that in the Gezira main because the intensity of agriculture here is 100% with no fallow areas, while in the Gezira main the intensity is 75% with a fallow area left for cotton each season. The administration, irrigation, crop mixture and production relations are identical with those prevailing in the Gezira main.

C.1.3 Administrative Divisions of the Gezira Scheme

Section	Number of Blocks
Gezira Main	
South	8
Centre	10
Masselemia	9
Wad Habbouba	9
Wadi Shair	6
North	7
North West	8
Total Gezira Main	54
El Managil Extension	
El Mikashfi	7
El Huda	7
Wad El Mansi	7
El Tahameed	7
Ma'atug	8
El Matouri	8
El Gamousi	9
Total El Managil	53
Total Gezira Scheme	107

C.2 Responses to Some Questions in the Questionnaire

C.2.1 Numbers of Family and Local Labour Forces by Sex

Type of Labour	Sex				Total
	Males	%	Females	%	
Family	57	19.4%	237	80.6%	294
Local	71	09.6%	670	90.4%	741
Migrant	323	34.4%	616	65.6%	939
Total	451	22.8%	1523	77.2%	1532

Source: Cotton Pickers Survey in Gezira Scheme, 1989

C.2.2 Productivity of Family and Local Labour Force by Broad Age Groups

Age ¹ Group	Average Productivity						Total	
	1 - 2	%	3 - 4	%	5 and more	%	Number	%
Family Labour								
10 - 15	032	84.2	004	10.5	02	5.3	038	12.9
16 and Over	117	45.7	120	46.9	19	7.4	256	87.1
Total	149	-	124	-	21	-	294	100
% Total	50.7%	-	42.2%	-	7.1%	-		-
Local								
Less Than 7	003	75	001	25	00	00	004	0.5
07 - 15	71	83.5	14	16.5	00	00	085	11.5
16 and Over	340	52.1	267	41	45	6.9	652	88
Total	414	-	282	-	45	-	741	-
% Total	55.9%	-	38.1%	-	6.1%	-	100%	

1 - The minimum age recorded for the family labour was 10 years.

Given the average productivity, the average daily earnings of family and local labour is £s9.6, and £s 11.3 respectively (the price per guffa was £s5 for both types)

Source: Cotton Pickers Survey in Gezira Scheme, 1989

C.3 Cotton Pickers Survey, 1989: Questionnaire

C.3.1 Migrant Labour

Name	
Sex	(1) Male (2) Female
Age	
Education	(1) Illiterate (2) Primary (3) Intermediate (4) Secondary (5) Others..
Productivity	

C.3.2 Local Labour

Name	
Sex	(1) Male (2) Female
Age	
Education	(1) Illiterate (2) Primary (3) Intermediate (4) Secondary (5) Others..
Productivity	

C.3.3 Family Labour

Name	
Sex	(1) Male (2) Female
Age	
Education	(1) Illiterate (2) Primary (3) Intermediate (4) Secondary (5) Others..
Productivity	
Relation to Farmer	(1) Brother (2) Sister (3) Son (4) Daughter (5) Spouses (6) Parents

C.4 Questions Collected from the Migrant Labourers

1. Name.....
2. Sex (1) Male (2) Female

3. Age
4. Education: (1) Literate (2) Illiterate
5. Did you come directly from your home? (1) Yes (2) No
6. Did you come (1) alone (2) with your family (3) with relatives ?
7. If with family, specify the following for each member

Name	
Sex	(1) Male (2) Female
Age	
Relation to the interviewed	(1) Brother (2) Sister (3) Son (4) Daughter (5) Spouses (6) Parents

8. Your main Job at home?

(1) Agriculture (2) Animals (3) Trade (4) Transport (5) Idle (6) Others..
--

9. Would you return home directly after the end of the picking? (1) Yes (2) No
10. If No, where do you intend to go?.....
11. Did you come before to pick cotton in the scheme? (1) Yes (2) No
12. If No, where were you working last year?.....
13. How many seasons you have attended in this scheme?.....
14. Have you ever worked before in another agricultural scheme? (1) Yes (2) No
15. If Yes, name the scheme.....
16. Did you work before with the same current tenant? (1) Yes (2) No
17. If Yes, how many seasons?.....
18. Do you plan to come to the scheme next season? (1) Yes (2) No (3) Don't know
19. Have you any arable land at home? (1) Yes (2) No
20. If Yes, specify the area in feddan.....
21. What is your main income source at home? (1) Agriculture (2) Animals (3) Trade (4) Others....

22. Who bear the transportation cost to and from the scheme? (1) The tenant (2) myself (3)

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