Rural-Urban Migration and Socio-Economic Development in the Sudan:
Toward a Macro-Systems Model of Analysis

By

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THESIS

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# Table of Contents

## CHAPTER I. Introductory
1.1 Introduction ........................................... 1
1.2 The Scope of the Study .................................. 2
1.3 Objectives of the Study ................................ 5
1.4 The Methodology ........................................ 7

## CHAPTER II. Overview of Rural-Urban Migration Literature
2.1 General Literature Review .................................. 2
2.2 Conclusion ............................................. 21
2.3 The Sudan Data Review .................................... 22

## CHAPTER III. Concepts and Assumptions for Developing a Macro-Systems Model
3.1 Problem of Definition ...................................... 27
3.2 Rural-Urban Distinction .................................. 27
3.3 Rural-Urban Areas/Communities Definition ................. 28
3.3.1 Rural Areas/Communities ............................... 28
3.3.2 Urban Areas/Communities ............................... 31
3.4 Migration and Migrant Definition ......................... 34
3.5 Inter-vening Variables (Obstacles) ......................... 35
3.6 Socio-Economic Development Concept ...................... 38
3.7 Summary List of Key Concepts and Definitions ............ 38

## CHAPTER IV. A Macro-Systems Model of Rural-Urban Migration and Socio-Economic Development Analysis
4.1 Justification and Rationale of a System's Theory-based Conceptual Model of Rural-Urban Migration and Socio-economic Development in the Sudan .............. 42
4.2 Definition of System's/Subsystem's Concept ............... 44
4.3 The Major Characteristics of the General System's Theory ........................................... 45
4.4 Rural-Urban System's Components as They Pertain to Migration Analysis .......................... 47
4.5 The Model ............................................... 48
4.5.1 Its Functions ........................................ 48
4.5.2 Its Components ....................................... 50
4.5.2.1 Inputs ........................................ 51
4.5.2.2 Outputs ......................................... 52

## CHAPTER V. Rural-Urban Migration and Socio-Economic Development in the Sudan
5.1 Sudan's Profile .......................................... 63
5.1.1 Area and Climatic Conditions ......................... 63
5.1.1.1 The Area ....................................... 63
5.1.1.2 Climatic Conditions ............................... 65
5.1.2 Population of the Sudan .................................. 66
5.1.3 The Major Urban Centers in the Sudan ................. 69
5.1.4 Socio-Economic Development in the Sudan .......... 74
5.2 The Migration Process/Subsystem
5.2.1 Source and Destination Areas of Migration in the Sudan
5.2.2 Input-Characteristics of Migration Subsystem

CHAPTER VI. Migration Analysis: Application of the Conceptual Model
6.1 The Determinants of Rural-Urban Migration
6.1.1 Rural Related-Determinants
6.1.2 Urban Related-Determinants
6.2 Effects of Rural-Urban Migration
6.2.1 Effects of Migration upon the Major Urban Centers
6.2.2 Effects of Migration upon the Rural Source Areas
6.3 Suggested Strategy Guidelines Influencing Rural to Urban Migration
6.4 Future Research Needs

CHAPTER VII. Conclusion

Bibliography
1.1 Introduction

This is a study of rural-urban migration in the Sudan, conceived as an input-output-subsystem that affects both rural and urban communities in terms of community-costs-benefits. Its focus is on the community level rather than individual migrant cost-benefits. The rationale of this perspective lies in the fact that rural-to-urban flow depletes rural areas from their energetic human-input resources essential for achieving socio-economic development and, simultaneously, on the other hand, might create social and economic problems in the major urban communities in the Sudan. It is generally recognized that rural-urban migration is a reflection of and a response to the rural-urban differentiation: employment opportunities; income; quality of institutional services; (education, health care, and social welfare programs in general).

Recently there has been a general agreement among policy makers, planners and researchers to consider rural-urban migration as integral part of socio-economic development planning. This tendency might be due to the impact of this phenomenon on both receiving and sending communities.

Despite the significance of this tendency to view rural-urban migration in the context of socio-economic development planning, the development strategies and policies remain either "urban biased" or "rural biased," in their orientation toward socio-economic development.
In the Sudan, the development strategy has been "urban biased"; that is, the pattern and the focus of socio-economic development concentrated in a few urban centers while the rest of the country was lagging behind. Accordingly, the major urban centers such as Greater Khartoum; (Khartoum Capital, Khartoum North, Omdurman); Kassala, and Wad medani being "paramount" centers of economic growth characterized by expansion of socio-economic development programs-high productivity export oriented projects, (the Gezira scheme and recently Rahad); commerce and industries. These major urban centers act as "growth poles" attracting rural people in "ever-increasing numbers" (Hale and Hale, 1971).

In an effort to correct for this imbalance since the early 1970's, a great concern has been given to rural development in the traditionally push resource areas of Kordofan, Darfur and Northern provinces. However, the impact of this project was minimal and rural population continues to flow from these less rewarding rural areas to the more rapidly developing urban areas.

1.2 The Scope of the Study

At the present time, rural-urban migration in the Sudan seems to be a response to the socio-economic development process that is concentrated excessively in the major urban centers and their surroundings. All these major urban centers, except El Obeid and El Fasher, are located in the central and eastern regions and Greater Khartoum. Thus, the main force of migrants is moving from places beyond these major cities, particularly from western, northern and
southern regions in to these areas. Accordingly, the population of these major urban areas has grown rapidly during the intercensus period 1955/56-1973/74.

The first population census 1955/56 and the second population census 1973/74 have shown that the rural-urban migration constitutes a major component of the population growth of the major urban centers with rate of more than 2.3 percent per annum, particularly for Greater Khartoum.

The industries, commerce and institutional services established in these major urban centers in the last three decades act as "growth poles" to attract rural people to an "extraordinary degree" (Faaland, 1975). Hale and Hale (1971) note that the major urban communities now stand at the heart of the socio-economic transformations. They conclude that "it is the urban areas in which [such] changes are most concentrated and from which numerous other changes emanate." In this regard, in his classification of urban hierarchy, Elbushra (1973) finds that few urban communities (towns) in the Sudan are able to perform such functions or to provide such institutional services (schools, hospitals, banking services, etc.). He found only four towns (Khartoum, Omdurman, Khartoum North and Port Sudan) satisfied requirements of his classification, while 69 towns fell short on his index of institutional services.

This classification reflects how far the urban centers in the
Sudan are differentiated in their urban status and institutional functions. Following Elhusa, we can assume that as the urban areas continue to differentiate, the more the migration streams flow to them.

The focus of this analysis is on the major urban centers having a population of 100,000 people or more, and the presence of a major development-project in the same urban center or surrounding it. The major urban centers selected are:

1. Khartoum (nation's capital)
2. Omdurman
3. Khartoum North
4. Kassala
5. Wad Medani

These cities are geographically centered in the central and eastern regions of the Sudan where development programs and institutional services are also concentrated. They are summarized in Table 1 to indicate their major traits regarding population change.

Table 1. Annual rate of population growth in the Intercensal period 1955/56-1973/74 by major city.

<table>
<thead>
<tr>
<th>Major City</th>
<th>Population (1000) 1973/74</th>
<th>1955/56</th>
<th>Rate of Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Khartoum</td>
<td>799.8</td>
<td>252.6</td>
<td>6.6</td>
</tr>
<tr>
<td>Kassala</td>
<td>100.5</td>
<td>40.6</td>
<td>6.8</td>
</tr>
<tr>
<td>Wad Medani</td>
<td>135.1</td>
<td>47.6</td>
<td>8.9</td>
</tr>
<tr>
<td>Port Sudan</td>
<td>112.0</td>
<td>47.7</td>
<td>3.1</td>
</tr>
</tbody>
</table>


For further discussion on a "differentiation" concept, see Frank W. Young and Dean MacCannell (1967). “Structural Differentiation of Communities: an Aerial Photographic Study,” Rural Sociology, Vol. 32, No. 3 (Sept. 1967) pp. 334-344.
1.3 **Objectives of the Study**

The aim of this study is to:

1. Review the literature of rural-urban migration and economic development models in order to derive a model and inferences for analysis of rural-urban migration in the Sudan.

2. To examine the possibility of a relationship between rural-urban migration and socio-economic development process in the Sudan.

3. To suggest guidelines for a strategy to influence rural-urban migration based on community development integrated programs and to provide improved socio-economic infrastructural facilities and institutional services in a way which reduces urban congestion in large cities.

Overall, the study will attempt to provide insight into rural-to-urban migration in the context of socio-economic development that might be beneficial to planners and policy makers at the national and at the local level.

1.4 **The Methodology**

The aim of this study is to describe and analyze two sets of interrelated phenomena (rural to urban migration and socio-economic development). To this end a conceptual model, based upon the systems analysis, will be used to explain the causes and effects of rural-urban migration in its relation to the socio-economic development process. The model will make use of census data available over three distinct decades, 1955/56-1964/65-1972/74. The migration data are tabulated according to place of birth as opposed to place of current destination to show the pull-push sources of rural-urban migration. The main
shortcomings of this technique is it does not reflect when persons migrate. To overcome these problems, additional factors will be considered including those which influence the decision to migrate or stay.

Unfortunately, as often occurs in Third-World studies, the census data available are insufficient, particularly for migration. The second population census was carried out in 1973/74 and for some technical reason it has been restricted. The third population census (1983) is not yet prepared. The study will employ such additional sources of information as the official reports presented by Sudanese officials and by international agencies (International Labour Organization—IL0, U.S. Agency for International Development—AID, World Bank). For socio-economic development strategies, the study will depend upon the Sudan's socio-economic development plans during the past three decades, 1960-1980.
Chapter II. Overview of Rural-Urban Migration Literature

The purpose of this chapter is to examine the literature regarding rural-urban migration so as to generate hypotheses regarding the reasons behind rural-to-urban migration in the Sudan. The literature is also reviewed in order to identify studies of relevance to the Sudan. Consequently, a conceptual model is developed to explain in country migratory flow. Table 2 provides a synopsis of migration models and their assumptions pertaining to the factors involved in the migration decision making. Further details are provided in the following pages.

2.1 General Literature Review

The literature of migration in developing nations, including the Sudan, has grown remarkably during the last three decades. Since the early 1960's there had been increasing interest on rural-urban migration among researchers of different perspectives; geographers, demographers, anthropologists, sociologists and economists (Colvin, et al., 1982). In this context, rural-urban migration is seen as a major component of a "phenomenal growth" in many urban centers of the developing nations. In Africa, for example, rural-urban migration accounts for over half of the growth of most African cities. Migration, therefore, has contributed to the rapid urbanization in these countries with urban growth rates ranging from 7 to 10 percent annually (Herdju, 1978; Dyerlee, 1974). On the other hand, this phenomenon is also an essential factor leading to the drain of rural areas, where the majority of the population in Africa (80%) live. The loss of dynamic human resources is critical to the socio-economic development of rural areas. Thus, agricultural
<table>
<thead>
<tr>
<th>Migration Model</th>
<th>Basic Assumptions</th>
<th>Reasons</th>
<th>Example of Application of the Model</th>
<th>Main Author(s)</th>
</tr>
</thead>
</table>
| 1. Gravity Model | - Migration occurs as a distance between two places is short  
<p>| 2. Push-pull Model | - Migration is stimulated by factors associated with origin area—push factors e.g., over-population and environmental deterioration. It is stimulated by factors associated with destination area—pull factors e.g., better economic conditions, &quot;city bright light.&quot; | Economic reasons              | Better conditions, (income, health care). | Lee (1966)     |</p>
<table>
<thead>
<tr>
<th>Migration Model</th>
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<th>Reasons</th>
<th>Example of Application of the Model</th>
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<tr>
<td>5. System Approach</td>
<td><strong>Rural-urban migration is a system involves not only migrants but also a number of institutional agencies. It responds to a variety of elements related economic development and social structure; family and community. The overall rural-urban system and government policies affect migration and are affected by migration.</strong></td>
<td><strong>Economic motives</strong>&lt;br&gt; job opportunity, social reasons, family ties, and governmental policies—national environment</td>
<td>Theoretical perspective to explain rural-urban migration in Africa</td>
<td>Mabogunje (1970)</td>
</tr>
</tbody>
</table>
development may be adversely affected without offsetting the loss by a countervailing increase in productivity in the urban sector (Calvin, et al., 1981).

In the literature, many efforts have been made to explain and analyze the causes and consequences of rural-urban migration in the context of specific rural-urban configuration and economic development. A close examination of the accumulation of rural-urban migration studies reveals that the analysis of migration, to a great extent, has been dominated by four distinct theoretical models that have profoundly affected the direction and results of studies of migration. These dominant models are:

1. Revensleten's Gravity model (1885): Revensleten formulated his theoretical model in terms of "laws" that, he assumed, govern migration. The most critical laws still dominating migration analysis are what so called "migration and distance," and "migration by stages." Hypothetically, according to the model, the migration stream increases with a short distance and decreases or grows less as distance increases. So, the distance between two place (A-B) is considered a major index to migration. Accordingly, the pattern of migration is almost always "step-wise" migration (Brown and Sanders, 1981).

2. Push-Pull model developed by Lee (1966): Lee argues that migration from rural areas to the cities is stimulated by four sets of factors. Broadly, these factors are
summarized as follows:

a. "push factors" associated with the area of origin (rural areas) such as overpopulation and environmental deterioration.

b. "pull factors" associated with the area of destination (urban areas) such as "the glamour of town life," "city bright light" or the like.

c. Intervening obstacles, such as distance, communication and/or transportation.

c. Personal factors such as age/sex.

He concludes that "in every area there are countless factors which act to hold people within the area or attract people to it and there are others which tend to repel them (Lee, 1969).

Although Lee's model has been attractive in migration analysis for more than three decades it was considered "unsatisfactory" in explaining migration decision-making and government impact policy in developing countries (Todaro, 1978). In addition, its explanations focus primarily on abstract generalizations formulated in aggregate terms (Mabogunje, 1970; Brown and Sanders, 1981).

In this model, rural-urban migration is seen as a symptom of environmental conditions in the rural areas on one hand, and attraction of urban areas on the other. This model ignores the impact of migration on both rural and urban communities since its emphasis is centered on individual migrant as a focal point of decision-making analysis rather than a community-based analysis: social systems.
development programs, policies and institutional service as pertaining to migration.

3. The labour force adjustment model by Lewis (1954; 1958; 1963), and its extensions by Fel and Rains (1964; 1966). 

This model is based on the assumption of a dualistic economy: with "subsistence" and "capitalist" components. The capitalist sector is characterized by reproducible capital, and pays capitalists for the use thereof and the subsistence (agricultural) sector is non-productive sector. In this context, rural-urban migration is seen as a responsive process to the economic differences. The urban sector, therefore, serves in a labour absorption capacity for labour surplus migrants (Leeson, 1979; Dasgupta, 1981; Nugent, 1977; Brown and Sanders, 1981). As Nugent (1977) and Dasgupta (1982) indicate, the model assumes that migration from rural areas to urban centers increases productivity and capital profit and, in consequence, a demand for labour from rural (subsistence) sector will tend to increase. At the same time, rural agricultural productivity will also increase since labour-surplus individuals migrate to the urban centers. Thus, the model claims that both migrants to urban areas and rural population in the agricultural sector will increase their incomes. According to the hypothetical assumption of this model, rural-urban migration acts as an adjusting/equilibrating mechanism of
the labour force as well as a process of bridging rural-urban income gap.

The main limitation of this model lies in the assumption of considering rural sector as a "surplus" "static" sector of near zero marginal productivity in agriculture to justify rural-urban migration. There is evidence to the contrary suggesting that, under given conditions of production, in the developing countries, including the Sudan, any withdrawal of labour from the agricultural sector leads to a decline in production unless some supplementary techniques, such as mechanization, are used (Dasgupta, 1981; Calvin, et al., 1981). In addition, the assumption of industrial/urban expansion to absorb migrants who choose to migrate in search for a job is problematical. A number of empirical studies have shown that, in developing countries, migration from the rural sector flows at rate far in excess of the rate at which the urban sector can absorb it, and consequently, the rate of unemployment continues to increase (Adepoju, 1978; Dasgupta, 1981; Godfrey, 1979). Rather than producing balance, migration leads to an "unorganized" segment in urban centers which comes to play the role of a reserve-army to the industrial urban labour supply for years to come. Accordingly, rural-urban migration is not a beneficial strategy of transferring rural human resources to productive urban sector. From this

This model is based on the assumption that rural-urban migration is a response to rural-urban income differentials, real or imagined (Todaro, 1976). Through migration from rural communities with low income to urban ones with high wages, as presumably perceived or expected, migrants believe they can increase their standard of living. However, the rural-urban influx can also lead to problematic effects such as unemployment. The model emphasizes the significance of "unemployment rate" as a mechanism maintaining equality between rural wage rate and expected jobs in the urban centers. Unemployment is seen as a deterrent factor because of the risk of not obtaining a job in urban centers (Byerlee, 1974; Hugent, 1977).

This model has been used as a theoretical frame in a number of migration studies in some developing countries. For example, Sabot (1972) in Tanzania, Cadwell (1966) in Ghana and Rempel (1970) in Kenya. These studies assume that rural-urban differential in terms of income, wages, job opportunities, is a dominant stimulus for rural individuals to migrate (Byerlee, 1974). Thus, the primary concern in this model is given
to the individual migrant's behaviors in response to expected wage rates in the urban setting.

The most serious shortcoming of this model is that a decision to migrate is absolutely determined by higher level of expected income; highly paid job opportunity, in urban centers. This means that according to the model, a migration decision is almost always "rationally" made; an arguable point. People migrate to the urban centers not only for employment and income, but also for better education, health, housing and social welfare opportunities for their children (Oberai, 1981).

In our theoretical framework, the emphasis will be on a multivariate momentum for rural-urban migration in the context of socio-economic development; that is the interrelated factors affect a decision to move or remain. By contrast to earlier models which emphasize one or two dimensions in migration analysis, our model approaches rural-urban migration as the result of input and output of structural components/systems of rural and urban communities and the overall national environment in which migration occurs. From the perspective of the proposed model, rural-urban migration is not only a responsive mechanism to rural-urban differentials; incomes, wages, etc., but it is also a subsystem influencing human resources, affecting both rural/agricultural and urban/industrial systems as well as being affected by them (see Chapter 3).

Recently, a new trend, in the migration literature, argues that modern rural-urban migration has a powerful impact on rural
development. It drains rural areas of their dynamic human resources and investments, and it hinders, in consequence, any attempts to develop these areas (Adepoju, 1978; Dasgupta, 1981; Nugent 1977; Peak, 1981). It also creates problems, including unemployment and pressure on social service, in the urban setting. Still, the question remains: why is a massive rural population in developing countries including the Sudan, flocking from their rural home areas to the urban centers. Is it due to the character of rural-urban integration of economy and/or social structure? Or is it due to an imbalance in rural-urban socio-economic development? Perhaps specific strategies/policies affect the path of both rural-urban migration and development. In the literature of migration, it seems that there is a general consensus among rural-urban migration writers which assumes such a relationship between migration and economic development. As economic development accelerates, institutional and infrastructural facilities become spatially concentrated in urban areas, rural people move toward these urban magnets where economic growth, industries, amenities and social services are available (Adepoju, 1978; Byerlee, 1974; Brown & Sanders, 1981; Paul, 1975).

Consequently, rural-urban migration can be both a cause and effect of social and economic development in the developing countries in general and in the Sudan in particular. What remains to be understood is the effect of rural-out-migration on the rural areas. Can rural-urban migration play a role in reducing rural-urban income differential, and in bringing about change and socio-economic development in home communities? Some studies argue that the remittances migrants send to
their home—rural areas may have impact on rural development (Dasgupta, 1981; Byerlee, 1974; Oberai & Singh, 1980). Rochin and Witt’s paper on Pakistan (1975) did not show a statistically significant relationship between rural farmer adoption of high yielding varieties of wheat (during the green revolution of the late 1960’s) and migrant remittances, despite the fact that migrant remittances were vital to the survival of many small farms and these same farms adopted new, high yielding wheat varieties at a significant rate. However, they argued that the migrant workers themselves may have been influential to farm members at home in communicating the worth of new high yielding wheat varieties. On the other hand, other studies argue that remittances can no longer constitute an alternative strategy to generate socio-economic development in the areas of decreasing population (Colvin, et al. 1981; Nugent, 1977; Williams, 1981). Calvin et al. indicate that remittances are often substantial and essential to the economic survival of the home rural communities, but those left behind are rarely able to transform them into productive activities to achieve socio-economic development.

This view, indeed, stresses the issue of loss of human resources through migration. However, in spite of a disagreement on the role of remittances in rural development, available evidence indicates the remittances constitute a potential motivating engine in stimulating rural—urban flow. That is because, as Byerlee notes, in many African countries, remittances have been employed for education of children which is found has a positive relationship with rural—urban migration (Byerlee, 1974; Sabot, 1972; Cadwell, 1969; Rempel, 1970; Oberai, 1977).

Regardless of the outcome of this debate on whether or not
remittances are significant for rural development, a critical question can be raised: To what extent is rural-urban migration socially and economically beneficial for both rural and urban communities? In contrast to the labour force adjustment model, and the human capital model that either encourages rural-urban migration (the former) or justifies it (the latter), we can and should begin to question the notion of rural-urban migration as “happy” or demanded as it was portrayed in these models. The focus of migration analysis can be shifted from migrant’s behavior and his ability to adjust to the “bright-light of a city” to a community-based analysis. In this alternative view, attention is shifted to the societal costs and benefits that rural-urban migration may generate both for rural and urban areas rather than at the individual migrant’s level.

It may be that, in many African countries, including the Sudan, the societal costs of migration may exceed the individual migrant’s benefits and rural-urban migration is currently higher than desirable on the ground of appropriate allocation of human resources and developmental offerings (Adepoju, 1978; Byenle, 1974; GalalEdin and Elmustafa, 1978). For example, in the Sudan, migration flow to the major urban centers at a rate (2.3) far in excess of economic opportunities, employment, and institutional performance; health; housing; and transportation devices.

Drawing on the general systems paradigm, Mabojunte (1970) argues that rural-urban migration affects the overall structural systems of both rural and urban communities (systems) and be affected by them. This is a critical conceptualization which frames rural-urban migration.
in the broader context of socio-economic development. This view, indeed, shifts the focus of decision to migrate from an individual "rational" level which the classic models emphasize to the entire structural systems' level of a society: family, government-institutions, policies and the general environment. Thus, the mechanisms of regulating migration for the benefit of a community are essential. He suggests two important systems to perform the controlling function of rural-urban migration: the family, in the rural areas, and government institutional procedures in the urban setting.

In addition, a feedback system; that is information exchange and communication, plays an essential role in encouraging and/or discouraging rural-urban flows. For example, the extended family, relatives and friends in urban centers can act as major informal sources to feedback information to their relatives in the rural areas.

The main idea behind Mabogunje's conceptualization, using the system's approach, is to emphasize interaction and interrelation of different structural systems (community; family; institutions), that might influence migration and, simultaneously be influenced by migration as well. This view, in fact, embodies the integration of components of the overall rural-urban system as it pertains to migration. Hence, both local and external factors are integrated in stimulating rural-urban influx. Rural areas, therefore, are no longer seen as "primitive, isolated and unchanged" communities. In the Sudan, for example, rural areas actively interact with urban areas; through rural/agricultural/ livestock economy and social contacts. With regard to Mabogunje's framework, some observations can be made here. First, since his main
concern is centered on migration controlling systems both in rural and urban areas, he does not indicate how far migration can affect rural-urban systems. Moreover, the mutual relationships which constitute the "core" of the system's approach are unclear in his conceptual formulation; for example, the relationship between the family control system in rural areas and the institutional policies/procedures in urban areas. How is each one affected by the other? In addition, the family itself, which is considered as "control subsystem," has undergone substantial changes and consequently the dynamic characteristics of adapting to rural-urban migration such as rural development programs and the input-out facilities to bring about change, are ignored. In the Sudan, as elsewhere in many developing countries, the educational system which is a government-job-oriented system imposes a real challenge as relating to migration. Thus, more educated rural people "school leavers" represent a high proportion (50%) of migrants to the urban centers of the Sudan, particularly Greater Khartoum (Oberal, 1977). Adepoju (1978); Byerlee (1974) have noted the dominance of this phenomenon in many other African countries.

2.2 Conclusion

As regards to the factors entering decision to migrate and the impact of rural-urban migration on sending and receiving communities the literature suggests several different reasons. The important ones of relevance to the Sudan appear to be the following:

1. In aggregate terms, rural-urban migration is a response to economic and social factors associated with rural and urban
areas, such as lack of employment opportunities, inadequate social services (health, water supply, and/or lack of agricultural land and credit service).

2. Socio-economic differences between rural and urban areas affect migration flow out of rural areas in search of better economic and social opportunities—job opportunities, better schooling and health services, etc.

3. Integration of economy (marketing for example) and social structures (extended family and relatives in urban areas) of rural and urban systems affects migration.

4. Policy procedures/strategies oriented toward economic development—employment, prices, taxes and housing might affect rural-to-urban migration. In the Sudan, for example, the development strategy is focused on agricultural modern sector and few major urban centers in central and eastern region of the Sudan while the rest of the country left behind. This situation accelerates out-rural migration to the focal points of socio-economic development. However, the above reasons related to the Sudan because the Sudan shares almost similar characteristics regarding migration experience, history and socio-economic development pattern with many developing countries on which these models have drawn. Here, an overview is provided about the Sudan literature.

2.3 The Sudan Data Review

Our concern about rural-urban migration is based on several considerations. First, rural-urban migration, particularly from rural
traditional agricultural communities to major urban communities, has contributed and continues to contribute a main component of urbanization process in terms of concentration of population in few urban places and growth of population as well. In addition, rural-urban migration has accelerated the socio-economic development of receiving urban communities since early 1960's while adversely affecting rural losing areas through transfer of their human-input-resources out of rural agricultural/nomadic sector to urban centers. Finally, as it is generally realized in the Sudan, rural-urban migration has dramatic effects both on urban and rural communities as well. For the former, it constitutes a pressure on the capacities of urban system (economic and social, employment, and institutional facilities), while, for the latter, it affects agricultural and livestock sectors, the backbone of the Sudan's economy, which contribute for about 45 percent to the gross national product (GNP).

Before 1955/56 the Sudan had practically no data to determine its population size, its growth rate, or any other demographic characteristics, but since then until 1973/74, the Sudan has carried out two population censuses: the first in 1965/56, and the second census 1973/74.1 Between the two census periods a sample housing survey was carried out in 1964/65 for only six provinces in the northern Sudan.2

1Recently (1983) the third population census has been taken.

2Administratively, the Sudan was divided into 9 provinces until 1974; and redivided since then into 18 provinces. As the housing sample survey was taken 1964/65 the three southern provinces were excluded because of the instability conditions in the southern region at that time.
Rural-urban migration in the Sudan is a new phenomenon associated with social and economic transformations over the past three decades. Before 1955/56, this phenomenon was not widely recognized. The reason, I believe, is not only due to the lack of information on population movements, but primarily due to the social structure and triahistic in nature. Rural-urban migration, therefore, was not encouraged by the social and cultural values of these communities. During this period of non-mobility the Sudan has witnessed a complex pattern of migration; the so-called "Felata immigration," particularly to the agricultural production areas such as the Gezira, Delta Elgash, Kassala and other areas along the banks of the Blue and White Niles. Felata; a term refers to those people who migrate from west African countries, specifically Nigeria to the Sudan since the beginning of the nineteenth century. Generally, they are known as hard workers and cheap labour force as well. This pattern is eventually a permanent labour migration that tends to settle in the Sudan, particularly since the early of this century.

As suggested above, the Sudan had undergone substantial social and economic changes. Between 1955/56 and 1973/74 the population of the large cities population has remarkably increased. For example, Greater Khartoum which consists of Khartoum, the nation's capital, Omdurman and Khartoum North, ("The Three Towns") population has jumped from 252,6 to 799,8 during the Intercensal period with growth rate of 66 per
annum. Similarly the population of other major cities such as Kassala; Wad Medani and Port Sudan, has increased over the same period. These increases are shown in Table 1.

These figures might be underestimated, particularly for the second population census, but they strongly indicate that the major urban centers still dominate during the intercensal period. All these major urban centers are located in the central and eastern regions of the Sudan where socio-economic development (industries, major agricultural projects, institutional services) is concentrated. The rest of the country, including two more centers, Atbara and ElObeid, is lagging behind in terms of the level of development and institutional services, at least until the early 1970's. The rural out-migration flows to "an extra ordinary degree" to these major centers, as the international labour office (ILO) mission has commented (Faalan, 1976). Over a million men and women move every year in search for better opportunities; employment; higher income. Oberai (1977) noted that migrants to major urban centers are accompanied by their families. This family-linked migration pattern is more common particularly to Greater Khartoum, Kassala, Port Sudan and Wad Medani than individual migrations. Housing policy is among the reasons behind family migration. According to this policy, the larger the family size, the more eligible the individual or household for subsidized housing unit (Oberai, 1977; Galiqedin, 1974). Hence, the housing policy constitutes

According to the first results derived from the Third Population Census (1983), as announced by the Vice-president of the Democratic Republic of the Sudan, Greater Khartoum's population has jumped to 1.8 million.
one of the motivational factors in the rural-urban migration; (family-linked, pattern.)

In sum, the factors influencing rural-urban migration include availability of facilities concentrated in there, employment, housing and better general standard of living.
Chapter III. Concepts and Assumptions for Developing a Macro-Systems Model

This chapter presents a set of concepts and definitions which will be used to model the phenomenon of migration in the Sudan. Both hypothetical and operational definitions to the concepts are provided. These concepts are further used in conceptualization of our model (Chapter IV). This chapter concludes by summarizing key elements and definitions related to the rural-urban migration in the Sudan.

3.1 Problem of Definition

Definition of concepts is of key significance in the theory construction. It helps identify our conceptions of "reality." In essence, concepts are a reflection of our organized speculation of a "real world," or experience of our senses. As concepts are developed and given more precise definition, and elaborated, they help in guiding our knowledge in a given area of concern (Christenson & Robinson, Jr., 1980).

The problem of defining concepts almost always arises since concepts are differently defined; theoretically and operationally, by different authors for different purposes and uses. For example, such terms as "rural," "urban," "migration," "socioeconomic" and/or "development" are often faced with this "definitional problem" among many scholars and researchers as we see below.

3.2 Rural-Urban Distinction

A classic distinction of "rural-urban" concepts in the urbanization
studies was originally traced to Wirth many years ago. His rural-urban dichotomization is essentially based on such things as pattern of relations; primary relations, "rural against secondary "urban," traditional thought "rural" against rational "urban" and so on (Hauser, 1965). As Hauser (1965) and Nolan (1970) have noted, the Wirthian dichotomy was influenced by his own perception of Western urban differences that makes his conceptual dichotomy unappplicable in the rural-urban distinction in the developing countries. Alternatively, Redfield developed a "rural-urban continuum" concept to ensure the contact and relationship between both two poles; rural and urban. Recently, Mabogunje (1970) has called for a new "configuration" which sees rural-urban as a "system" to embody the integration of both poles. We shall return to this view later on in this study.

Each of these definitions emphasizes the characteristics of rural-urban configuration. But the differences among them result from different cultural perspectives. A definition of a concept should be derived in the context of a culture of a society. This view will greatly help in identifying a perception of a "reality." Following are an operational definitions for concepts used in this study as they apply to the Sudan.

3.3 Rural-Urban Areas/Communities Definition
3.3.1 Rural Areas/Communities

The concept of rural areas/communities (as contrasted to "urban") is generally characterized by such elements as low per capita income; lack or inadequate institutional services (health, education, housing,
and/or water supply), inadequate share of the national income distribution, considerable poverty and population growth rate of 2.0% annually (The World Bank and the International Development Agency, IDA, 1974). Rural areas in the Sudan as well as other developing countries are really suffering from these problems. The World Bank and IDA claim that almost 650 million people live in absolute "poverty" with annual per capita income less than $50, while 100 million have incomes below one third the national average. "Of this total 600 million or (80%) live in rural areas."

In addition to measures of absolute and relative poverty, there are two other standard approaches to identifying rural areas. The census definition uses a statistical criterion to identify rural areas: i.e., such as population size. The other is profession-based definition which associates rural areas with agricultural activity, while urban ones are nonagricultural.

Although the statistical definition provides information on the population size of rural areas as well as urban ones, it does not include other qualitative dimensions that may characterize rural areas such as "mode of life," and/or behavioral patterns. The second population census 1973/74 in the Sudan, for example, defines rural-urban areas on the basis of population size. The total population of the country (14.8) million divided into three groups as follows:

1. Urban: "The urban population includes all towns with a population of 5000 or more, together with some localities of certain administrative and commercial importance."

2. Rural Settled: "The rural population includes all people
leading a settled life throughout the year who don't live in urban areas defined above."

3. Rural Nomadic: "The nomadic population includes all people who lead a continuous, traditional nomadic life; that is they have no permanent home and move from the place to place...."

The definition provided by the second population census uses a statistical criterion in identifying rural-urban areas/population while it adopts a qualitative criterion to distinguish the rural nomadic from rural settled. Unfortunately, these definitions are not helpful for migration analysis. They cannot be used to determine why people migrate.

In the case of the profession-based definition, it seems logically evident since it relates rural agricultural areas. But it is ambiguous where the agricultural sector is not only predominant but the mainstay of the Sudan economy as well. In the Sudan the agricultural sector is comprised of two distinct parts. The irrigated "modern agricultural sector" where agricultural development projects and major urban centers are found; and the second is the rainfed rural areas generally known as the "traditional sector." The term "traditional" here refers to both old technical methods used in cultivation as well as social and economical underdevelopment, including lack of or inadequate social services and economic opportunities.

The circumstances suggest then any unidimensional definition is inadequate. The following definition is proposed to correct for these deficiencies:
1. Rural areas/communities include all population less than 5000; where
   2. Agriculture/nomadic activities are traditionally practiced in terms of old methods of farming and livestock; and
   3. Socio-economic development programs—institutional facilities—are lacking or inadequate therein.

The definition is exclusive of all urban areas/communities which are defined next.

3.3.2 Urban areas/communities

The literature of urbanization has generated a number of definitions of the concept of "city" or "urban" setting/communities and its deferential characteristics as contrasted to rural areas/communities. A classical view of city/urban setting, for example, had been expressed in work of many sociologists such as Park (1940); Spykman (1926); Wirth (1938). In their view, a "city/urban" place should consider such variables as:

1. size/population density; that is relatively large;
2. functional status; that is, its impact, politically, socially and economically, extends beyond its legislated limits and boundaries.
3. heterogenous; socially and economically differentiated in terms of class, ethnics and division of labour and specialization;
4. employment; basically job opportunities are non-
In addition, Wirth has suggested "mode of life" as additional criterion to distinguish the urban from the rural population. Viewing city/urban areas/communities in such purist form as two contrasting poles, does not apply to the Third World. In the Sudan, for example, as in many developing countries there is no city without rural characteristics. Similarly, a number of rural areas are characterized by some urban characteristics such as social heterogeneity and urban style of life.

Another definition which is widely used by demographers, is viewing urban places in terms of "the process of growth in the urban proportion rather than in the urban population" (United Nations, Population Division, no. 68 "Patterns of Urban and Rural Population Growth, 1980). The urban proportion can grow either through urban excess in rate of natural increase or as a result of positive net-migration from rural to urban areas. Under these conditions, the appropriate measure of the rate of urban growth is the difference between the growth rates of urban population and of the national population. Consequently, urbanization, in general, is seen as an indication of modernization and a sign of economic growth and social development. This view suggests that as urban areas grow, development progresses and rural-urban migration continually flows, constituting a major component of urban population and urban growth as well. In other words, more urbanized/modernized/developed is more vulnerable to migration streams. Conversely, the less urbanized community, less modernized, less economically and socially developed can be considered as a source
of out-migration.

As already noted, "urban" areas in the Sudan, according to the first and second national censuses 1955/56 and 1973/74, have been classified mainly according to population size and several places have been identified as "urban": eight cities were recognized as "urban large"; major cities, with population size ranging from 113,551 (Omdurman) to 36,289 (Atbara) in the first population census 1955/56. The same major urban centers dominate again the category of the urban hierarchy in the second census 1973/74.

It has been argued that the Sudan's census definition of urban areas is weak. The census ignores several characteristics that generally can identify an urban place such as level of development, socio-economic performance/institutional services, social heterogeneity/ethnic diversification (Hale and Hale, 1971). The size of population, administrative and commercial status should not be a sole criterion of urban definition. As Emblen (1973) notes that although Lagos, Nigeria, has population in excess of 700,000, it accounts for less than 20 percent of the urban population of the country as a whole while Monrovia, Liberia, whose population of 81,000, comprised 64.8 percent of the urban population. Lagos is densely inhabited, and has important administrative and commercial functions in the country as a whole.

For the purpose of the present study, major urban centers/communities in the Sudan can be defined and characterized by the following aspects:

1. Large size of population ranging between 100,000
Inhabitants and more.

2. With more employment opportunities; in industries, commerce, public service (government) and/or development projects serving the surrounding areas.

3. With relatively adequate/better institutional services such as health, housing, water supply and education.

Although the present operational definition is broadly formulated and most of the variables included are difficult to measure, it apparently suits the rural-urban migration influx in the context of socio-economic development concentrated in these major urban areas. This definition intentionally deemphasizes patterns of social interaction and assimilation mechanisms because our concern is to define what urban characteristics motivating migration rather than how migrants interact in the urban setting. Hence, throughout this study the terms "urban", "modern" and "more developed" are interchangeably used.

3.4 Migration and Migrant Definition.

Migration is defined broadly as a permanent or semi-permanent change of residence. It is, according to Lee (1969), a move from an area of origin to an area of destination. So, the area from which a migration takes place is considered an area of origin/source area or "rural area." This area might be either the place of residence at the beginning of the migration process or the last move migration residence. Alternatively, the area receiving such a move can be seen as an area of destination, or "urban." As Lee states, every origin-rural and destination-urban area is assumed to have positive factors which act
to "pull" people as well as negative factors, which "push" them from it. However, the effect of positive-negative forces behind migration is basically depending on what Lee calls "intervening factors": distance, education, age and sex.

In fact, Lee's migration theory has provided very useful ideas which are still widely used in a rigorous migration studies. These are: push-pull; origin destination areas and the "intervening" concept; that is the determinant factor influencing migration such as distance/communication and/or transportation. The main limitation of this theory is its high degree of generality of these notions.

In this study, rural-urban migration can be defined as "a move across the boundaries of area(s)/communities of origin which is (are) characterized by substantial traditional agricultural and nomadic activities to an area(s)/communities of destination which is (are) characterized by urbanized/modernized/more developed socio-economic activities: employment and social services. This definition is necessarily somewhat arbitrary. It excludes moves from other urban localities of the traditional sector and moves from small urban areas within the modern sector with population more than 5000 and less than 100,000. However, it seems consistent with our purpose to see how rural-urban migration is related to the socio-economic development process which initially concentrated in the modern sector.

3.5 Intervening Variables (Obstacles)

Lee introduces an intervening set of variables (obstacles) which enter in migration analysis. These variables such as distance,
transport costs, etc., set between all origin (rural) and destination (urban) areas. They tend to exert differing influences on different people regarding migration decision making. For example, what may be considered an "obstacle" to one potential migrant (e.g., transport costs, skill level, age) may not be an obstacle to another who is financially well off, skilled and/or younger. The impact of intervening factors, therefore, will vary with push-pull forces associated with rural-urban areas as well as other individual traits (age, skill level, sex, etc.) of different people (Todaro, 1976).

3.6 Socio-economic Development Concept

Since late 50's and early 60's there had been an extensive discussion of the term "development" and appropriate development strategies. Term "development" has been widely used, much abused and misunderstood (Oshinba, 1977; Johnson, 1975; Christenson and Robinson, 1980). It is generally realized that the term "development" has been widely used by a large number of people in many countries of the world. This situation is due partly to the "multi-dimensional" nature of the term development itself and partly to the nature of strategic ideologies pursued to bring about structural transformation; social, economic and technological. The term can also imply detrimental aspects of transformations, growth and change (Christenson and Robinson, 1980). In sum, this term is defined in the following ways:

1. Development is defined in terms of per capita growth of national product of a country or a region. If a country or a region, attains a certain level of per capita or average
income, it is considered as developed or underdeveloped according to this criterion. In accordance to this definition, most of the Third World nations are considered underdeveloped. The reason is that their per capita incomes fall far short of the international level. At this point, many observers realize that the Gross National Product (GNP) is not the best indicator of the developmental level of a nation. There are many other aspects that relate to quality of life: social well-being which are not measured by GNP (Obudho, et al., 1979).

2. Development is defined in terms of fertility levels or the crude birth rates. On the basis of this definition, some social scientists and demographers divided the world into two distinct categories: developed and less developed. (Johnson, 1975). The reason for this view is that the crude birth rate (25 percent per 1000) is considered as a retardant variable; the higher the value (birth rate) the lower the level of development. In the Sudan, for example, the crude birth rate has remained relatively constant between the two census periods of 1955/56, 1973/74 at about 45 and 50 per thousand respectively (Department of Statistics: Sudan Fertility Survey, 1977-79).

3. Socio-economic development is defined in terms of "improving the quality of life;" that is bringing about transformation and improvement in social, economic and cultural structures and achieving equitable opportunities in the fruits of
transformational process (Tweeden and Brinkman, 1978). The strategy/intervention adopted, however, might determine what type of change is needed: economic growth, social transformation or a combination of both. Those who advocate economic growth strategy claim that social change, welfare and development, in terms of improving quality of life, will concomitantly be achieved since economic output can be used in fulfilling these ends. Another view claims that bringing about social change requires participation of the population concerned to mobilize their own resources, capacities to get change done. In this sense, Gerald (1972) has indicated that "people who are affected by change participate in making it."

In this study, the concept of socio-economic development refers to: The deliberate efforts designed to bring about socio-economic transformations aimed at promoting economic opportunities/employment, income and social services.

3.7 Summary List of Key Concepts and Definitions

This chapter has focused on several concepts required for modeling rural-urban migration in the Sudan. These concepts require data in order to analyze the real situation. Since data are not currently available, the key terms discussed above are listed below and information which can be derived in the Sudan is indicated further in Chapter IV to complete a more detailed study.
less than 5000

b. urban - All cities/towns with 6000 or more inhabitants and has administrative position and functional status. (First population census in the Sudan 1955/56 and ElGhura 1975.

In the literature, urban place includes:

- large size or population
- socially and economically differentiated; classes, division of labor, etc.

Large size of population (100,000 inhabitants and above):

1. with more employment opportunities, and social services

2. economically and socially differentiated (heterogenous people and diverse economic activities.)

2. people

a. rural settled - All people leading a settled life throughout the year who don’t live in urban areas defined above.

b. rural nomads - All people who lead a nomadic life; have no permanent residence in a city or village

c. urban - All people who reside in a town or a city

All people living in rural areas in traditional sector of Northern, Kordofan and Darfur provinces.

All people who practice nomadic life, cattle and camel raising in the areas identified above.

All people who live in major urban centers, Greater Khartoum, Kassala and Wad Medani.
Table 3 (continued)

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Theoretical</th>
<th>Operational</th>
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<tbody>
<tr>
<td>3. Migration</td>
<td>- A permanent or semi-permanent change of residence. - A move within a country’s boundaries</td>
<td>A move across the boundaries of rural and nomadic communities in Northern Sudan and Darfur Provinces to the major urban centers identified above.</td>
</tr>
<tr>
<td>4. Socio-economic development</td>
<td>- Growth in per capita income; - Improving quality of life; - Providing social welfare and economic opportunities to promote general standard of living.</td>
<td>The deliberate efforts designed to bring about socio-economic transformation to promote people’s life: employment generation and social welfare programs; health; water supply; improving rural housing, etc.</td>
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</table>

**Intervening Distance as such enters as variables (e.g., distance)**

Intervening factor, in influencing migration. Migration increases as distance decreases and vice versa.

Distance is excluded as an intervening factor in migration decision making. It is not as important as economic and social opportunities associated in rural and urban areas.

In this study, rural-urban migration is assumed to be responsive to the following:

1. Inequalities between rural-urban systems in economic opportunities (jobs and income) and institutional services

*Operational concepts refer to actual measurable variables. In some cases proxy variables are suggested because of the difficulty in obtaining actual number by which to measure the idea. For example, wealth, the proxy might be number of camel or cattle.*
(health, water supply, education and recreational facilities),
so socio-economic development level which affects migration.
2. weakness of commitment to agricultural land among young people
   might encourage out-rural migration.
3. policy procedures such as taxes and education policy might have
   access to out-rural migration.
4. presence of extended families and relatives in urban centers
   might affect in-urban migration.
5. out-rural migration affects both rural and urban areas
   economically and socially.
Chapter IV. A Macrosystems Model of Rural-Urban Migration and Socio-Economic Development Analysis

4.1 Justification and Rationale of a System's Theory-based Conceptual Model of rural-Urban Migration and Socio-Economic Development in the Sudan

As noted earlier, there are four outstanding migration models which have dominated the analysis of migration in both developing and developed nations. These models are:

1. The Gravity model by Revenstien (1885)
2. The Push-Pull model by Lee (1966)
3. The Labour Force Adjustment Model by Lewis (1954-58)

These models suggest that the emphasis in migration decision making is concentrated on one dimensional variables, as the dominant factors in stimulating the migration process. In addition, these models use the individual migrant as the focal point of analysis; characteristics such as age, education and capacities of adjustment in urban settings are emphasized. Accordingly, all of these models assume that migration is a "rational" response to economic motives. Some inductive hints of the influence of other factors such as environment seen evident, as in the Push-Pull model, but the analysis is fragmented. Further, and more importantly, almost all of these models ignore the interactive and interdependent nature of rural and urban areas in developing countries. For example, in Sudan where over 80% of the economy is
agricultural in nature, towns have developed strong links with rural areas, while rural areas depend on towns as places where they can buy and sell their goods and services. Agricultural products are grown not only for consumption in rural areas, but also for marketing and exporting to urban areas (Elbushra, 1975).

This mutual relationship between rural and urban areas creates an economic integration that responds to the socio-economic facilities of both areas. In this sense, rural areas are affected by urban areas in terms of the markets, prices, and wages they provide, and what the urban areas produce in the way of goods and services. Urban areas are affected by rural areas in a similar manner.

Finally, these models ignore the existence of adaptive alternatives besides the migration from rural to urban areas. To put it simply, the possibilities of people holding, remaining and adjusting in their area of origin through developmental programs designed to meet their economic and social needs are not addressed. Thus, the issue of adaptability in push areas is completely neglected in these models. In this respect, the models emphasize the pull factors associated with urban areas rather than the push factors associated with rural areas. Even when this is done, some important pull factors in the urban centers are neglected. For example, such pull factors in the informal sector (that is the "unorganized activities" which performed by people who are not qualified to get jobs in the urban areas). The role of the extended family in the urban setting, are de-emphasized.

With the above considerations in mind, the central concern of our model is to provide some insights as to the relationship between rural-
urban migration and socio-economic development. In this view migration is seen as a reflection of, and a response to multivariate factors or subsystems such as employment, social services, social structure, values, attitudes, etc. These factors or subsystems are closely related to the socio-economic development process, rural-urban structural systems, environmental conditions, national policies, taxes, prices, and types of development strategies. Therefore, the emphasis is centered on how these factors/subsystems interact to produce rural-urban migration and in turn how migration affects them.

Since we will be drawing on the systems theory concept, it is necessary to define the concept of a system/subsystem and to clarify its major characteristics so as to establish a theoretical understanding for developing the model. Also, an attempt will be made to identify rural-urban systems' components and subsystems as they pertain to migration.

The rural-urban system is considered here as the focal system constituted of a set of components functionally interrelated to each other.

4.2 Definition of System's/Subsystem's Concept

In the context of the General Systems Theory the concept of a system refers to an entity with interdependent parts or subsystems. These parts or subsystems are linked together in such a fashion that they influence and may be influenced by each other. Consequently, a change in one part or subsystem affects change in the other parts or subsystems. For example, a change in the land ownership system might affect, positively or negatively, the production system by increasing or
decreasing the man/productivity ratio. In essence, the system's concept emphasizes the close relationship between a given system and its components within the environment in which it operates (Katze and Khan 1986-78; Gross, 1972-76; Tausku, 1972-76). Therefore, conceptualizing rural-urban migration subsystem is to identify the basic interacting components, their characteristics and their relationships (Mabogunje, 1970).

4.3 The Major Characteristics of the General Systems Theory

In view of a systems theory, any given system has the following critical attributes:

1. Interdependence of its Components: that is changes that occur in one component or subsystem have effects for other components or subsystem. This characteristic emphasizes the interdependence and interaction of the different subsystems and components of a system. For example, in the rural-urban systems, changes made in one subsystem, such as agricultural policy toward export-oriented production may affect the price subsystem and/or the quality and quantity of production.

2. Capacity of Feedback: that is, information about the output, for example, can be used to control the rural system and predict uncertainties in the outside environment. In this case, if the output of the system, such as a socio-economic development program fails to satisfy target population needs, the rural/urban system has to adapt itself not only to actual needs but also to the potential needs of the people through assessing
the needs or demands to be met. If it fails to adopt, the system or subsystem will be subject to decline. Thus, negative feedback is an important characteristic of a system if it is to become self-correcting (Nahier and Tushman, 1980).

3. Equilibrium: that is, a state of relative balance or, to use systems theory terms, a steady state mechanism which is not "a motionless or true equilibrium." Functionally, equilibrium maintains a system/subsystem internally as it interacts with a continuous inflow of input-output energies. The input-output energies (human resources, technical materials, institutional services, developmental programs, etc.) may not function properly if they are not maintained by other subsystems such as supportive policies, marketing and transportation.

With regard to rural-urban migration, this function can best be seen in the case of taxes. For instance, if taxes imposed on agricultural products are high relative to the net profit of production, producers will either sell their product at higher prices than officially permitted, seek illegal means to avoid these higher taxes or abandon agricultural production altogether. In all these cases, a system must react to bring itself into balance through regulatory mechanisms. This characteristic of adaptation is treated as a fourth critical attribute of a given system.

4. Adaptation: For a system to grow and survive, it has to respond to the changing demands of the target population. Through maintaining an input-output components, a system can
adapt itself to environmental changes. Adaptability, therefore, functions to deal with the growing demands and interests of the population. If socio-economic development programs are to be seen as input-output transformation product, they must represent an adaptive or responsive mechanism in order to satisfy people's demands and expectations. We will return to this point later on in the chapter.

4.4 Rural-Urban System's Components as They Pertain to Migration

Rural-urban systems can be seen as two primary, interrelated systems in which migration takes place. Rural and urban systems are composed of different components or subsystems. Each system's components may influence or be influenced by the other system's components in producing rural-urban migration in the context of socio-economic development. (Likewise, rural-urban systems/subsystems components, rural-urban migration affects and be affect by each subsystem's components.) In addition, all rural-urban subsystems mutually interact within the entire environment. In this sense, rural-urban subsystems are presumably functioning in a holistic manner, which is to say that no single subsystem is seen as dominant in the migration decision-making process.

Within the rural-urban systems in the Sudan, we can recognize three important subsystems that affect rural-urban migration. These subsystems are:

1. The supportive subsystems: Functionally, these ensure economic and social resources such as, labour, land, markets and prices.
2. The regulatory subsystems: These ensure institutional control of functions such as family, community structure, culture, and procedures in both rural and urban systems.

3. The adaptive subsystems: These include institutional strategy, policy and procedural functions such as planning, evaluation and coordination of activities pertaining to socio-economic development programs and migration.

Table 4 shows the major subsystems in the rural-urban systems which interact to induce migration. These three subsystems are entirely related to socio-economic development since they ensure resources which are essential for development. Basically, the three subsystems deal with the input-output, transformational process which includes both socio-economic development, performance and population movement. In this context, our model views rural-urban migration as an input-output transformational subsystem in relation to the socio-economic development process.

4.5 The Model:

4.5.1 Its function

Rural-urban inflows in the Sudan, are assumed, in our present model, to be a responsive, influencing of the input-output subsystem in the socio-economic development subsystems. These subsystems are: supportive (input-output resources); regulatory (human input-output and behavioral conformity); and, adaptive (input-output adaptability to environmental change) Table 4. As these subsystems affects the process of rural-urban migration decision making, this process affects them in turn.
<table>
<thead>
<tr>
<th>Rural-Urban Subsystems</th>
<th>Components</th>
<th>Super System:</th>
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<tbody>
<tr>
<td>Rural-Subsystem variables</td>
<td></td>
<td>National</td>
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<tr>
<td>Urban Subsystem Variables</td>
<td></td>
<td>Environment</td>
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</tbody>
</table>

1. Supportive Subsystem: Includes various functions of requiring input-resources (human resources and physical infrastructural facilities); capital; money developmental programs, etc.

2. Regulatory: Includes functions of regulating, socializing and controlling human behavior; family, customs, norms, social values, etc.

3. Adaptive: Includes functions of coping with changing conditions; institutional strategies, policies; planning, coordination, etc.

Supportive Subsystem: Includes economic and social resources; ensures input-output functions (labour force, physical and technical facilities for development, capital, money, etc.

Regulatory: ensure the state of balance of a system through institutional control of functions, laws, regulations, procedures.

Adaptive: Includes strategies, policies relating to migration and development, planning alternatives, evaluation, etc.

National environment super system includes:

1. Economic conditions such as wages, prices, distribution of income/wealth,
3. Social welfare development (health, housing, etc.)

These subsystems are developed from Katz and Khan (1966, 76).
In order to adequately understand the complex texture of rural-urban migration subsystems as they relate to socio-economic development subsystems, a system's theory-based model is essential. It must, however, have the capacity to visualize how these subsystems operate to induce critical impact on rural-urban migration. Although this model is conceptualized in broad, aggregate terms so as to include a number of interrelated subsystems pertaining to migration, it is not intended to constitute a comprehensive theory of migration. This is due to the fact that the scope of the present study is confined to the Sudan experience. Also, the assumptions which underlie this model are related to rural-urban influx, socio-economic development and social structures in the Sudan. Consequently, the possibilities of inferring such generalizations are considerably limited and might not be valid. The model, therefore, primarily represents a guideline of thought for the interpretation of multi-dimensional subsystems pertaining to rural-urban migration in the Sudan.

4.5.2 Its Components: Input-Output Elements

As we have already indicated, the main purpose of this model is to show how rural-urban migration interacts with input-output subsystems pertaining to socio-economic development and the social structure. To this end, it is important to deal with such concepts as the inputs the rural-urban subsystems acquire and/or utilize to achieve their socio-economic development goals and the concept of outputs produced by rural-urban subsystems as they are functionally operating to support, maintain and adapt to the input-output transformational process and socio-economic development.
4.5.2.1 Inputs

The central focus of modern systems analysis is the input-output concept. The term input can be defined as the factors, elements or variables that act as energy resources for a system or subsystem to function. In essence, they are human and/or non-human resources necessary for a system/subsystem to perform (Katz and Khan, 1966-78; Gross 1973-76; Walder and Tushman, 1980).

Walder and Tushman (1980) have identified three types of inputs:

1. Resource assets: These are materialistic, naturalistic or humanistic inputs. Materialistic inputs include techniques, equipment and capital used in production transformation. Naturalistic inputs include land, irrigation, water, rivers, oil, minerals, etc. Humanistic inputs include population, labour, knowledge, skills and family ties.

2. Historical development: That is, the previous and current experience that might have an impact on the entire environment of a society. For example, the strategic decision of concentrating the socio-economic development process in one area rather than in another. To what direction is the development strategy focused? Is it a rural oriented development strategy? Or, is it urban-oriented? Maybe a rural-urban balance oriented strategy? All these questions have great impact on the growth or decline of a system at different points in its historical development. In addition, political behavior, disasters, draught, desertification and the evolution of tribalistic value systems might affect the
migration decision making process over time.

3. Strategy decision: This type of input is critical in its relation to the other types of inputs since it may positively or negatively affect all other kinds of inputs. Strategy decisions here refer to the means adopted to achieve the goal desired. They include: government policies such as agricultural reform policy; the allocation of financial resources; and support of policies for increasing productivity. Providing credit facilities and/or production incentives to farmers in order to encourage them to increase their level of production is an example of the latter type of strategic decisions.

4.5.2.2 Outputs

The output concept refers to the resultant product of a system (rural or urban) designed to meet the demands and expectations of the people concerned. Output, therefore, represents goal-achievement, socio-economic development returns. For example, more employment opportunities, increased income and improved delivery of social services. This concept, in fact, emphasizes the adaptability of a system/subsystem. If a system/subsystem, for instance, fails to produce goods and services that respond to the growing demands of the population, it may fall apart.
Figure 1. Simple model to rural–urban migration in the Sudan

Rural Communities <-> A <-> Major urban Communities

Line A represents the general flow of migrants. It is a direct line because migration in the Sudan tends almost to flow directly to large cities. Line B represents the reverse flow. It is broken to indicate that the flow is insignificant.
Figure 2. Macro-Systems Model to Rural-Urban Migration Analysis in the Sudan
The macro-systems model is a more detailed explanation for the pattern of migration shown in A and B. However, this model incorporates some of the main reasons stimulating the flow of migrants. In Figure 2, we begin by looking at the general socio-economic opportunities and social services. These are affected by supportive, regulatory and adaptive input-resources—money, capital, policies and by the migrants as well. The socio-economic context of development, therefore, affects the number of people using the social service, and economic opportunities and be affected by them. The model aims at explaining the flow of migration process as well as the factors influencing migration from rural to urban areas.

In sum, it is clear that there is a mutual influence between input and output components as they pertain to rural-urban migration and the socio-economic development of subsystems. For instance, human resources (people, skills, knowledge) as essential input factors in the socio-economic development process might have an impact on the output flow... production process. Similarly, the output flow in the form of the socio-economic development outcome might have effects on the target population which forms the human input side. So, this input-output transformational cycle affects both rural-urban migration and the socio-economic development process. In either case, it seems that the two multi-systemic phenomena, rural-urban migration and socio-economic development, are positively or negatively related.

In our model, input-output elements as they relate to migration and socio-economic development can be viewed in two categories:
1. **Input-output related variables of the socio-economic development process.** This category works at two interrelated levels:

   a. The Input level includes such variables such as humanistic, materialistic and physical resources. Humanistic resources are labor, population, skills, and social values. Materialistic resources are capital, money, technology, transportation, marketing, etc. Physical resources are land, irrigation, rainfall, desertification, minerals, etc.

   b. The Output level includes such variables as goal achievement outcome in terms of increased income, generation of employment, and improved delivery of social services. Hence, socio-economic development can be seen as an input-output transformational process.

2. **Input-output variables as they relate to migration.** To apply input-output variables to migration, it is important to visualize the migration process at two different levels:

   a. The Predecision level is the state which precedes a decision to migrate or to stay. In this state, people may perceive that their needs, demands and expectations are not being met. They might tend, therefore, to seek alternative means of satisfying these needs. If migration is perceived as an alternative in this regard, they will enter the next level of decision making which is Strategic Choice.

   b. Strategic choice is the search for a new place to move to. Usually, this new place is economically and socially
more developed. This usually means more job opportunities and greater availability of social services. At the level of decision, the energies, skills, money, and investments of people constitute the real input. These are factors that might affect the output transformation or the socio-economic development process. With regard to the level of strategic choice, people constitute a potential input, which, if utilized, might affect the output flow.

Thus, rural-urban migration can be seen as a potential input for a place from which a move is made (rural system) and a real input, if utilized, for a new residential setting where the move ends, or a place which migrants decide to return to. Simply stated, migration can be seen as an input-output transformational subsystem in the context of socio-economic development subsystems. As input, human and material resources, people, skills, knowledge, money, and investment might affect the transformation process of output by generating new job prospects, productivity, and social services. In general, rural-urban migration does affect the level of socio-economic development. Practically, it might have and impact on the strategies and policies concerning the production process, employment and institutional services. As output, it can be viewed in terms of the skills, backgrounds, information, education, and values that migrants have when they move to a new urban setting. It also includes the transfer of new residential outputs such as technical equipment, money, goods and services to the migrants' home area. Table 5 shows key variables for analysis of the rural-urban subsystems pertaining to migration.
<table>
<thead>
<tr>
<th>Rural-Urban Subsystems</th>
<th>Rural-Urban Subsystems Variables</th>
<th>Urban Subsystems Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Supportive</td>
<td>To what extent input resources are acquired and/or utilized in the production process?</td>
<td>To what degree input resources (economic and social development) are functioning in generating more input-output; (employment and social services)?</td>
</tr>
<tr>
<td></td>
<td>Do the input resources unavailable? And/or insufficient compared to output desired?</td>
<td>How far do these supportive inputs (financial resources/human resources, infrastructural facilities) have impact on migration?</td>
</tr>
<tr>
<td></td>
<td>To what degree these input resources have access to generate services and economic facilities?</td>
<td></td>
</tr>
<tr>
<td>2. Regulatory</td>
<td>How far does the human behavior response to socio-economic development performance? e.g., resistance?</td>
<td>To what degree migration behavior put constraints on development process?</td>
</tr>
<tr>
<td></td>
<td>What procedures adopted to make people cope with change?</td>
<td>What procedures adopted to curb migration in the urban centers?</td>
</tr>
<tr>
<td>3. Adaptive</td>
<td>To what degree rural development goals are achieved?</td>
<td>To what degree urban development has capacity to absorb more migration?</td>
</tr>
<tr>
<td></td>
<td>Are input-resources employed to get transformational process sufficient? or scarce?</td>
<td>What type of input characteristics are needed? Such as (more skilled people, educated, etc.?)</td>
</tr>
<tr>
<td></td>
<td>What type of policy alternatives (agricultural policy, marketing, prices, taxes, incentives) are adopted to achieve the overall goal?</td>
<td>What is the current impact of such strategies on migration?</td>
</tr>
</tbody>
</table>
The following questions may also arise:

1. To what degree is this inflow of input-output energies socially and economically beneficial for both rural and urban systems?

2. What is the impact of migration as an input-resource on urban development? Does it necessarily result in accelerating socio-economic development? Or, is it merely a burden on both social services and economic performance in the destination area?

3. What consequences may it generate in rural development? To what degree is output in the form of money, technological equipment, etc. sent back home essential in developing these areas?

4. How does the recently adopted decentralization policy, aimed at the redistribution of population and power among the six Sudanese administrative regions, affect the migration influx in urban areas? How does this policy help in the mobilization of individual region input-output resources designed to achieve socio-economic development?

However, the questions raised above regarding the degree of migration beneficiality, its impact, consequences and policies, represent key issues in the thesis. Accordingly, addressing these issues requires information on Sudan's population distribution, per capita income in both rural and urban areas, capacities of social services and job prospects. Due to the lack of current data, it becomes difficult to assess exactly, in terms of costs and benefits, the actual degree of migration beneficiality, both economically and socially. But,
based on the data available one can argue that rural-urban migration in
the Sudan is no longer beneficial, particularly for the major centers.
This judgment may be due to the following reasons:

1. Agricultural output, in the form of food and cash crops, has
   been affected over the last two decades basically due to out-
   rural migration. Traditionally, a family in a rural area
   constitutes a unit of production in which all family members
   work together in cultivating and harvesting agricultural
   crops. As migration increases among school leavers and young
   people, input production (labour) as well as output the
   production outcome of socio-economic development programs may
   well be affected negatively.

2. It seems that the income migrants may generate from an urban
   job might be insufficient to meet the migrant's own demands
   (renting a house, transportation, etc.). This makes it
difficult for the migrant to accumulate enough rather than
   saving money so that some may be sent back to his home area, or
   family. This supports the fact that neither the migrant nor
   his home area benefit substantially from migration. The data
   base available suggests that a great number of rural migrants
to major urban centers have engaged in low-income service
   occupations since they lack sufficient experiences and skills
to compete for higher income-jobs as urban natives are able to
do.

3. Generally speaking, the intensity, (volume) selectivity,
   (younger and more educated people migrate out of rural areas)
and the locus of migration prompt one to assume that both rural and urban communities might be negatively affected by excessive migration. It affects rural communities by drawing energy resources, in the form of human labour, out of agricultural activity without replacing them with other income resources. Consequently, rural development programs would be functionally vulnerable to this lack of essential input-resources (human labour, money). On the other hand, major urban settings are being saturated by migration influx resulting in excessive pressure on the existing services and economic opportunities.

These issues are addressed further in Chapters 5 and 6.

These issues, in fact, are emphasizing the degree to which rural-urban migration interrelates with the multifaceted subsystems of socio-economic development and social structure. Hence, dealing with this phenomenon requires the consideration of all related factors or subsystems which act to ensure supporting, regulating and adapting components as they pertain to migration, such as the input-output transformation process or socio-economic development.

Consequently, migration is not an isolated phenomenon in and of itself, but instead, a part or subsystem of the whole complex of rural-urban subsystem's components, supportive, regulatory and adaptive. It interacts with these different components at different levels and, therefore, affects them and may be affected by them. So, migration is seen in this model as an input-output transformational subsystem in its relation to socio-economic development subsystems and the overall national environment. As the socio-economic transformation process
proceeds, the rate of migration outflow increases. Alternatively, the less adequate the socioeconomic transformation performance is (lack of economic opportunities such as employment and income and the lack of adequate social services such as health, education, water supply, etc.) the greater will be the propensity of people to move out of their present area in search of a place to relocate.
Chapter V. Rural-Urban Migration and Socio-Economic Development in the Sudan

5.1 Sudan's Profile

5.1.1 Area and Climatic Conditions

5.1.1.1 The Area

The Sudan is Africa's largest country and the tenth largest country in the world. The area of Sudan is approximately 1,000,000 square miles; or 2-1/2 million square kilometers which is about the size of the United States east of the Mississippi River (Enriile, 1974; Oberai, 1977; Kolkatti, 1980). The Sudan has joint boundaries with eight African countries. It is bounded in the north by Egypt; in the east by Ethiopia; in the South by Kenya, Uganda and Zaire; in the west by the Central African Republic and Chad; and in the northwest by Libya. (see Figure 3.

This strategic location along with its high degree of economic and political stability make the Sudan one of the most distinguished African countries receiving immigrants and refugees, especially in the last three decades. Meanwhile, its large size has affected, to a great extent, the success of governmental efforts toward achieving the goals of the socio-economic development programs.

The Sudan is traversed from south to north by the White Nile and Blue Nile which connect at Khartoum, the nation's capital. The White and the Blue Nile rivers are the mainstays of the Sudan's economic development. The major, modern agricultural, export and agro-industry oriented sector, is located in the irrigated areas along the banks of
Figure 3. Sudan's Provincial* Divisions and Major Cities

*Provincial divisions before 1973/74
the Nile and their tributaries. For example, the Gezira, Rahad and Jonglei projects. In addition, a number of major urban centers have rapidly grown along the banks of the White and Blue Nile. These cities are Khartoum, Kadmedani, Omdurman, and Khartoum North. These major urban centers have acted as migration pull poles since the beginning of this century. Although the degree of urbanization and the level of socio-economic development vary considerably from one urban center to another they all experience rural to urban migration as is shown in Tables 10.1, 10.2, 10.3 and 11.

4.1.1.2 Climatic Conditions

Climatically, the Sudan is wholly tropical and varies from a completely arid desert in the north to semi-arid regions in the central area, to a continental, equatorial type of humid climate in the south. Rainfall varies accordingly from none in the extreme north to as much as 80" annually in the extreme south (Barbour, 1961; Kaikati, 1980). Sudan is nearly a land locked country because it is nearly a desert in the extreme north and the Red Sea area in the east where no fertile soils with sufficient rainfall are available (DeVries, 1988). Similarly, in the west of the Sudan, the arid climate, limited annual rainfall and soil structure prohibit cultivation. Agriculture is predominantly shifting process. Even land in the North and West areas is threatened by desertification resulting from draughts and poor land utilization (Abd Elbagi, 1983).

Generally, with the exception of the modern agricultural sector in the central part of the Sudan which is mainly irrigated, the rest of the
agricultural sector is completely at the mercy of the uncertain rainfalls. These climatic conditions contribute not only to the distribution of urban centers in the Sudan but to the concentration of socio-economic development as well, and subsequently they constitute a major factor in motivating people to migrate from predominately backward, rural areas to the developing urban centers. Unless the socio-economic development strategy is seriously directed to improve the life of people in these rural areas, the influx of rural people to the major urban centers of Sudan will continue. This continued influx might affect, if has not already affected, not only the urban systems capacity to accommodate rural migrants, but also may adversely affect the rural system by depleting it of its human resources.

5.1.2 Population of the Sudan

Like the diversity of climatic zones, the Sudan's population is of considerable diversity with distinct differences in social, cultural, economic and ethnic backgrounds. But within this contextual heterogeneity there is a remarkable degree of homogeneity within the subpopulation categories of the same social and cultural structures such as Arab, Muba, Bajaa, Nuniyin and Southerners. Table 6.

In 1955-56 the first national census classified the population into major subgroups according to their common tribal characteristics. With relatively few exceptions, the census shows a high degree of homogeneity within these ethnic subgroups (Demeny, 1968). Also, the census showed that the total population was 10.2 million, with 7.4 million in the Northern provinces which numbered six in 1973 and have been divided into
twelve provinces more recently. The other three southern provinces, which have since been divided into six provinces, accounted for 2.8 million people originally Nilotic in origin. In 1973-74 the second population census showed that the total population was 14.8 million with 11.8 million people in the Northern provinces and 2.9 million in the Southern provinces.

According to the Third Population Census, conducted in 1983, the Sudan's total population is 21.6 million. This figure indicates that the population of the Sudan has doubled between the census of 1965-66 and the 1983 census. Also, the statistical report on the First Results of the 1983 Census shows a considerable change in population balance between major urban centers on the one hand, and middle-sized towns and rural areas on the other. The total urban population has reached 4.15 million with a growth rate of 5 percent per annum as opposed to a total number of 16.4 million in the rural and nomadic population which represents an annual growth rate of 2.1 percent. While the urban population percentage was 8.3 percent of the total population in the 1965/66 Census, it has jumped remarkably to 20.2 percent of the total population in the 1983 Census. (This means that the Sudan urban population is growing rapidly.) In this sense it shares with many developing countries the characteristic of a rapidly growing urban population. Table 7 shows the Annual growth rate by province during the

The Third Population Census was taken in February 1983, and the final report is not yet prepared. So, the 1983 census figures used in this study are obtained from the vice-president of the republics' announcement on the first results of the census—Kayan newspaper 8-26-1983 (quoted in Adwa Bulletin), Vol. 8 No 7 (Sept. 1983).
<table>
<thead>
<tr>
<th>People</th>
<th>Population</th>
<th>Males</th>
<th>Birth</th>
<th>Death</th>
<th>Rate of</th>
<th>Infant</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arab</td>
<td>3390</td>
<td>104.5</td>
<td>44.7</td>
<td>14.7</td>
<td>30.1</td>
<td>72.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Nuba</td>
<td>573</td>
<td>98.2</td>
<td>60.0</td>
<td>17.2</td>
<td>42.8</td>
<td>79.5</td>
<td>4.3</td>
</tr>
<tr>
<td>Beja</td>
<td>646</td>
<td>110.6</td>
<td>39.1</td>
<td>14.9</td>
<td>24.2</td>
<td>62.8</td>
<td>4.6</td>
</tr>
<tr>
<td>Nubiyin</td>
<td>330</td>
<td>94.9</td>
<td>4.6</td>
<td>11.3</td>
<td>9.3</td>
<td>67.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Eastern Southerners</td>
<td>594</td>
<td>97.6</td>
<td>69.3</td>
<td>26.3</td>
<td>44.0</td>
<td>135.6</td>
<td>5.5</td>
</tr>
<tr>
<td>Central Southerners</td>
<td>1983</td>
<td>104.6</td>
<td>74.6</td>
<td>28.4</td>
<td>46.2</td>
<td>123.7</td>
<td>5.4</td>
</tr>
<tr>
<td>Western Southerners</td>
<td>482</td>
<td>93.9</td>
<td>36.6</td>
<td>28.5</td>
<td>8.1</td>
<td>113.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Westerners</td>
<td>1359</td>
<td>94.3</td>
<td>43.8</td>
<td>13.9</td>
<td>29.9</td>
<td>74.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Sudan</td>
<td>10263</td>
<td>102.2</td>
<td>51.7</td>
<td>18.5</td>
<td>33.2</td>
<td>93.6</td>
<td>4.7</td>
</tr>
</tbody>
</table>

1 Including 259 thousand foreigners and 84 thousand Sudanese not classified by people.

intercensus period 1955/56-1973/74. Rural to urban migration is indeed considered a major component of urban population growth.

5.1.3 The Major Urban Centers in the Sudan

Although, in general, the Sudan is not a highly urbanized relative to other African countries, there is great variation pertaining to the urbanization situation. As we have already indicated, in the first population census only 8.3 percent of the Sudan population was classified as "urban." In the 1973/74 Census, only 18.19 percent of the population was living in the urban centers, particularly Greater Khartoum, Wad Medani and Kassala. These three major urban centers are more urbanized and located in the most urbanized and developed provinces of Khartoum, Blue Nile (which has recently become the Gezira, Blue Nile and White Nile provinces) and Kassala (which has recently become Kassala and Red Sea provinces).

The three major urban centers, with which we are concerned, constitute the most urbanized system in the Sudan. Together, they represent a triangle within which most, if not all, of the major socio-economic development activities are concentrated. This position has stimulated and continues to stimulate a tremendous number of rural migrants to move into this triangle of development. As shown in Table 7 and Table 8 these major urban centers have witnessed clearly observable population increases, mainly through migration.

1Due to the lack of data on the 1983 Census, our comparison of annual growth rates by provinces will be confined to the 1955/56-1973/74 Censuses on which data are available.
<table>
<thead>
<tr>
<th>Province*</th>
<th>Population (1000)</th>
<th>Rate of Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1973/74</td>
<td>1955/56</td>
</tr>
<tr>
<td>1. Khartoum</td>
<td>1150</td>
<td>505</td>
</tr>
<tr>
<td>2. Blue Nile</td>
<td>3804</td>
<td>2070</td>
</tr>
<tr>
<td>3. Kassala</td>
<td>1372</td>
<td>941</td>
</tr>
<tr>
<td>4. Darfur</td>
<td>2118</td>
<td>1329</td>
</tr>
<tr>
<td>5. Bahar-el-Gazal</td>
<td>1388</td>
<td>991</td>
</tr>
<tr>
<td>6. Kordofan</td>
<td>2203</td>
<td>1762</td>
</tr>
<tr>
<td>7. Equatoria</td>
<td>758</td>
<td>903</td>
</tr>
<tr>
<td>8. Northern</td>
<td>964</td>
<td>873</td>
</tr>
<tr>
<td>9. Upper Nile</td>
<td>799</td>
<td>889</td>
</tr>
<tr>
<td>Sudan</td>
<td>14819</td>
<td>10263</td>
</tr>
</tbody>
</table>

*Recently the Sudan is divided into 18 provinces (9 up to 1973)


1 Used Medani has recently become the capital city of the Gezira province and the headquarters of the Central Region Government.

2 Kassala has recently become the capital city of Kassala Province and the headquarters of the Eastern Region Government.
<table>
<thead>
<tr>
<th>Urban Center</th>
<th>No. of Migrants</th>
<th>% of Migrant Population</th>
<th>Total Population</th>
<th>Migrant as % of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khartoum</td>
<td>82,040</td>
<td>33.5</td>
<td>173,500</td>
<td>47.3</td>
</tr>
<tr>
<td>Omdurman</td>
<td>42,970</td>
<td>17.6</td>
<td>185,380</td>
<td>23.2</td>
</tr>
<tr>
<td>Khartoum North</td>
<td>28,460</td>
<td>11.6</td>
<td>80,010</td>
<td>35.6</td>
</tr>
<tr>
<td>Greater Khartoum</td>
<td>153,477</td>
<td>62.7</td>
<td>438,860</td>
<td>35.3</td>
</tr>
<tr>
<td>(consists of the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>three above)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wad Medani</td>
<td>13,960</td>
<td>5.7</td>
<td>63,660</td>
<td>21.9</td>
</tr>
<tr>
<td>Port Sudan</td>
<td>35,080</td>
<td>14.3</td>
<td>78,940</td>
<td>44.4</td>
</tr>
<tr>
<td>Kassala</td>
<td>11,160</td>
<td>4.5</td>
<td>68,130</td>
<td>13.9</td>
</tr>
<tr>
<td>Atbara</td>
<td>18,140</td>
<td>7.4</td>
<td>48,290</td>
<td>37.5</td>
</tr>
<tr>
<td>Ellobeld</td>
<td>12,870</td>
<td>5.3</td>
<td>62,560</td>
<td>20.6</td>
</tr>
</tbody>
</table>

Although each of these major centers have received incoming migration, it seems that Greater Khartoum is the focus of the migration flow. Table 3. On the other hand, Tables 10-1, 10-2, and 10-3 show that all three urbanized and developed provinces (Khartoum, Blue Nile, and Kassala) have received a great number of migrants during the last three decades. But as one can see, Khartoum province shows net gains from all provincial divisions including its counterparts in the urbanized and developed triangle, e.g., Kassala and Blue Nile. The uniqueness of Great Khartoum as the nation's capital characterized by expanding economic growth, commerce, industrial development, and social services may explain this phenomenon. Moreover, houses the bulk of civil services, politicians and, more importantly, the national decision making body of the central government. Thus, it has received the lion's share of investments, infrastructural facilities (transportation, education, and health care) and recreational services.

5.1.4 Socioeconomic Development in the Sudan

Historically, socio-economic development in the Sudan is characterized by two distinct developmental stages: The colonial stage from 1898 to 1955 and the independence stage from 1955 to the present. Before 1898, neither socio-economic development, in the wide sense we use here, nor migration processes were recognized (Hamin, 1963). Thus, our emphasis will be focused on these two distinct eras.

1. The colonial era: Anglo-Egyptian condominium (1898-1955).

In this era, the Sudan witnessed substantial changes at both social and economic levels. Among these changes were:
a. The development of new urban centers such as the capital city of Khartoum which replaced the former Mahdist capital of Omdurman. As a planned city with a strategic location, shouldered by the Blue and White Niles, Khartoum has become a vital center of economic and development consequently has grown rapidly. Khartoum then, has extended its impact beyond its own legal boundaries into the rest of the country. This explains why it has become the "core" of the rural to urban migration process as it receives ever greater numbers of migrants.

b. The establishment of administrative provincial capitals. For example, Kassala, Wad Medani, El Obeid, etc., became the capitals of their provinces, Kassala, Blue Nile and Kordofan respectively.

c. One of the dominant features of the Colonial era was the modernization and expansion of the agricultural sector. In particular, the irrigated sector in the Gezira area was modernized for the production of cotton as an export oriented cash crop (El Arifi, 1971). During this era, the Sudan developed a dualistic agricultural sector with modern agricultural in the irrigated areas such as Gezira and traditional agricultural characterized by primitive agricultural practices and the nomadic sector of the population. In the context of this dualistic agricultural economy, the socio-economic development process has generally been articulated toward the modern sector rather than the
traditional sector. (In other words, socio-economic development programs have been associated with the urbanized sector while the traditional sector, composed of an almost-rural majority, has lagged far behind.) It may be argued that the historical roots of migration are to be found in the dual nature of the agricultural economy, composed of the export-oriented sector in the irrigated area and the food consumption sector in the traditional areas since people continue to move from less developed to more developed areas.

2. The Independence Era: 1956 to the present.

The Sudan's economy continues to be predominantly agricultural in nature. Consequently, all of the post-governmental development strategies have been directed toward the agricultural sector. In fact, the agricultural sector alone contributes over 40 percent of the National Domestic Product (N.D.P.) and over 90 percent of the country's foreign exchange earnings. It also employs 86 percent of the population and provides input for a large proportion of industrial activity which consists mainly of agro-industrial production and import-substitutions (Curry, 1982; Nashashibi, 1980; Kailati, 1980).

Unlike the agricultural sector, the industrial sector accounts for only 10 percent of the N.D.P., which is composed mainly of agricultural processing activity (Nashashibi, 1980). Sudan, moreover, has a unique agricultural potential since it has a cultivable area estimated at over 200 million
acres, while only 8 percent of this, or 15 million acres, are currently being cultivated (Fallan, 1976; Kafkati, 1980).

Another potential of the Sudan's economy which has recently been recognized is the availability of natural resources such as minerals, natural gas and oil which is currently being explored. Considering these economic advantages in the Sudan, few governmental efforts have been taken in the context of the socio-economic development process until recently. In the early 60's an attempt to utilize these resources was carried out through the Ten-Year Plan from 1962-1971. But the emphasis of this economic plan was focused on achieving economic growth only without generating development that might have had an economic and social impact on the Sudan population on a large scale. This plan was abandoned only five years after its inception when October Revolution\(^1\) came to power in 1964. The five year period of the October governmental system which based on multiple political parties did not exhibit any serious efforts toward achieving socio-economic development programs in any form.

In 1969, the May Revolution took power. A year later, in 1970, the Five-Year Plan (1970-75) was adopted. The focus of this plan was on the accomplishment of economic growth and social development as well. Hence, great developmental efforts

\(^1\)October Revolution 1964, was a massive movement overthrown the military regime which came to power on November 17, 1958 headed by Lt. General Ibrahim Abud.
were oriented toward developing the rural agricultural sector where 80% of the population resides. From 1977 to 1983, a six year plan of economic and social development was released with a targeted goal of a 7.5 percent increase in the country's (N.D.R.). This new plan modified some components of the Five-Year Plan in regard to productivity increases, the increase of economic growth on an average of 7.5%, and the diversification of export oriented cash crops. In general, the basic objectives remained almost the same. Among these basic objectives are:

1. The increasing of productivity of all sectors of the national economy: agricultural; industrial; and mixed.

2. The Development and mechanization of the traditional agricultural sector.

3. The upgrading of social services and rural development projects.

During the last decade, serious developmental efforts have been undertaken. Yet, it seems that the development strategy is still focused on increasing economic output, particularly in the export-oriented cash crops such as cotton, ground nuts, sugar and oil seeds, despite the need to generate job opportunities, increase rural income levels and create adequate social services.

Moreover, although one of the major development strategies in the Sudan is to increase productivity and
upgrade social services, the average growth rate in the agricultural sector fell from 2.5 percent during the 1960's to 2.0 percent in the 1970's. Also, the per capita income in 1974 was US$104 which is much less than the international standard. In addition, the concentration of development patterns in the urban provinces (Khartoum, Kassala and Blue Nile) has led to an uneven distribution of socio-economic development returns not only between rural and urban areas but also within urban areas in the Sudan. Consequently, the lack of development programs in the remote areas of the western and southern regions can be considered one of the major factors in accelerating rural to urban migration, particularly into the major urban centers of Khartoum, Kassala and Blue Nile. The population of Greater Khartoum has increased from 790,000 in 1973 to 1.8 million in 1983. Most of this may be attributed to migration. Hence, development aimed at providing social and physical infrastructures in the rural areas such as improved water supplies; mechanization of the agricultural sector, land reform and creation of transportation facilities has had little or no impact, on the rate of rural-urban migration.

5.2 The Migration Process/Subsystem

5.2.1 Source and Destination Areas of Migration in the Sudan

Viewing rural-urban migration in the broader context of the socio-
economic development process shows a strong association between migratory movements and the characteristics of the receiving and sending communities such as the level of development, type of institutional services and economic prospects. A close examination of the data on the Sudan may shed some light on: the rural-urban migration process; the source and destination areas of in- and out-migration; and the socio-economic development characteristics of the migrants as well as those of the destination areas. To what degree do both characteristics contribute to the migration situation in the Sudan?

Tables 10-1, 10-2 and 10-3 show that Sudan's Northern provinces had experienced migration flow during the intercensal period, 1955/56-1973/74. But over this period, Khartoum and Kassala provinces gained a great number of migrants from other provinces, particularly Northern, Darfur and Kordofan provinces. For comparative purposes, each table will be discussed separately.

Table 10-1 shows that rural-urban migration exchange varies from province to province. For example, while Khartoum province sent only 7 percent of the total out-migrants, Northern, Blue Nile, Kordofan and Darfur provinces sent 54.4%, 14.3%, 13.3% and 7.8% respectively of the total out-migrants. Most of these migrants moved to Khartoum and Kassala provinces, the latter of which accounts for only 3.3% of out migrants.

In 1964-65, as table 10-2 indicates, Khartoum and Kassala provinces continued to dominate in attracting rural people to their urban centers of Greater Khartoum and Kassala. The next, in terms of the receiving migrants, is the Blue Nile province. As can be seen, Khartoum province
Table 10-2. Distribution of Migrants by Province of Birth and of Residence, 1964/65

<table>
<thead>
<tr>
<th>Province of Residence</th>
<th>Khartoum (1)</th>
<th>Kassala (2)</th>
<th>Northern (3)</th>
<th>Blue Nile (4)</th>
<th>Kordofan (5)</th>
<th>Darfur (6)</th>
<th>Total In-migrants (7)</th>
<th>Percentage of In-migrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khartoum</td>
<td>299,440</td>
<td>4,050</td>
<td>60,690</td>
<td>20,900</td>
<td>21,310</td>
<td>10,820</td>
<td>117,570</td>
<td>60.89</td>
</tr>
<tr>
<td>Kassala</td>
<td>4,080</td>
<td>144,190</td>
<td>28,390</td>
<td>3,610</td>
<td>4,290</td>
<td>2,450</td>
<td>42,820</td>
<td>22.18</td>
</tr>
<tr>
<td>Northern</td>
<td>1,010</td>
<td>470</td>
<td>44,000</td>
<td>420</td>
<td>960</td>
<td>170</td>
<td>3,030</td>
<td>1.57</td>
</tr>
<tr>
<td>Blue Nile</td>
<td>3,560</td>
<td>450</td>
<td>10,740</td>
<td>7,6250</td>
<td>3,790</td>
<td>1,860</td>
<td>20,400</td>
<td>10.57</td>
</tr>
<tr>
<td>Kordofan</td>
<td>1,470</td>
<td>80</td>
<td>2,600</td>
<td>1,420</td>
<td>53,950</td>
<td>1,790</td>
<td>7,360</td>
<td>3.81</td>
</tr>
<tr>
<td>Darfur</td>
<td>440</td>
<td>60</td>
<td>460</td>
<td>160</td>
<td>38,180,760</td>
<td>1,900</td>
<td>0.98</td>
<td>193,000</td>
</tr>
<tr>
<td>Total Out-Migrant</td>
<td>10,540</td>
<td>5,130</td>
<td>102,080</td>
<td>26,510</td>
<td>30,930</td>
<td>17,090</td>
<td>193,000</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>5.47</td>
<td>2.66</td>
<td>0.85</td>
<td>33.33</td>
<td>16.01</td>
<td>8.85</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

received about 61 percent of the migration inflow, Kassala 22.2 percent and Blue Nile 10.5 percent. On the other hand, the rest of the Sudan's Northern provinces (Kordofan, Northern and Darfur) received no more than 6.12 percent of the total migration inflow while all together sent 78.1 percent of the total out-migration to the major urban centers of the three more developed provinces; Khartoum, Kass and Blue Nile.

The figures provided by the second population census in the Sudan 1973-74 indicate that the migration streams continue to flow from the less developed provinces of Northern, Darfur and Kordofan to the more socially and economically developed provinces of Khartoum, Blue Nile and Kassala. Table 10-3 shows the distribution of migrants by province of birth and of destination in 1973-74. Migration directionality, as seen in these figures, supports the claim that migration in the Sudan follows the classical model of Lee's "pull-push" hypothesis (1966), or the polarized development model of Friedman (1969). But, it may be argued that people migrate not only for reasons of environmental deterioration or economic considerations as these models suggest but due to motives such as better education, health care, and drinking water. For example, in the Sudan, lack of agricultural land can be seen as one of dominant factors in stimulating migration from Northern province, the shortage of water resources path for irrigation and domestic use is one of dominant motives behind migration from Western Sudan. In addition to these

1 In his "General Theory of Polarized Development", Friedman argues that a developed region or core region has a dominant position over backward region or peripheral region, since the former has the capacity to generate and diffuse innovations while the latter is dependent upon these innovations.
Table 10-3. Recent Distribution of Migrants by Province of Birth and of Destination, 1973/74

<table>
<thead>
<tr>
<th>Province of Residence</th>
<th>Province of Birth</th>
<th>Total In-migrants (7)</th>
<th>Percentage of In-migrants*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Khartoum (1)</td>
<td>Kassala (2)</td>
<td>Northern (3)</td>
</tr>
<tr>
<td></td>
<td>1,150,000</td>
<td>2,305</td>
<td>130,065</td>
</tr>
<tr>
<td></td>
<td>22,480</td>
<td>1,572,000</td>
<td>55,334</td>
</tr>
<tr>
<td></td>
<td>8,483</td>
<td>6,459</td>
<td>946,000</td>
</tr>
<tr>
<td></td>
<td>34,236</td>
<td>21,302</td>
<td>65,428</td>
</tr>
<tr>
<td></td>
<td>12,777</td>
<td>3,054</td>
<td>12,116</td>
</tr>
<tr>
<td></td>
<td>4,860</td>
<td>2,118</td>
<td>3,601</td>
</tr>
<tr>
<td>Total Out-Migrants*</td>
<td>82,636</td>
<td>45,568</td>
<td>266,559</td>
</tr>
<tr>
<td>%</td>
<td>7.50</td>
<td>4.14</td>
<td>24.20</td>
</tr>
</tbody>
</table>

*In-migrants and out-migrants of the three Southern provinces are not included.

Source: Babiker, Abdelgafi A.G. (1983), and Sudan Fertility Survey: 1977-79, Department of Statistics, Khartoum. (These figures are underestimated, particularly in the case of Khartoum).
factors there are a whole set of interrelated factors which act in motivating migration outflows.

Thus, rural-urban migration emanates from a variety of factors: level of development; type of economic activity (agricultural or industrial); relative degree of social structural flexibility; and the availability or scarcity of input-resources (land, irrigation, transportation and human capital). Therefore, within rural-urban systems of the Sudan, migration may occur as a result of the social and economic integration of the rural and urban areas, and also as a result of the differentiation or variation of the environmental offerings of the respective areas, such as availability of diverse social services or economic opportunities. The Sudan represents a very unique case in this respect. Although rural-urban sectors/systems are substantially integrated socially and economically in terms of their interdependence, there are variations not only between the two sectors but within each sector/system itself. Such variations among rural-urban areas can be seen in the case of the three less developed provinces of Northern, Darfur and Kordofan as compared to the three more developed provinces of Khartoum, Kassala and Blue Nile.

The three less developed provinces have contributed considerably towards pushing an observable proportion of their population into the other three developed provinces. The Northern province was the most outstanding in this respect during the intercensal period 1955/56-1973/74. (See Table 11.) This migratory situation may in part, be attributed to the depressed socio-economic conditions resulting from population pressure on the narrow strip of agricultural land along the
<table>
<thead>
<tr>
<th>Province</th>
<th>% of Total In-Migrants 1965/66</th>
<th>% of Total Out-Migrants 1965/66</th>
<th>% of Total In-Migrants 1973/74</th>
<th>% of Total Out-Migrants 1973/74</th>
<th>Net Migration (1) 1965/66</th>
<th>Net Migration (1) 1973/74</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern</td>
<td>2.8</td>
<td>1.5</td>
<td>3.8414</td>
<td>3.9843</td>
<td>-53.3</td>
<td>-51.6</td>
</tr>
<tr>
<td>Blue Nile</td>
<td>7.7</td>
<td>10.5</td>
<td>9.9813</td>
<td>13.85</td>
<td>-3.7</td>
<td>-6.6</td>
</tr>
<tr>
<td>Kordofan</td>
<td>7.8</td>
<td>2.8</td>
<td>4.8333</td>
<td>6.5</td>
<td>-16.0</td>
<td>-6.5</td>
</tr>
<tr>
<td>Darfur</td>
<td>0.7</td>
<td>6.9</td>
<td>2.4858</td>
<td>7.0</td>
<td>-9.4</td>
<td>-8.1</td>
</tr>
<tr>
<td>Assala</td>
<td>+21.8</td>
<td>22.2</td>
<td>16.8333</td>
<td>16.2</td>
<td>+2.6</td>
<td>+18.5</td>
</tr>
<tr>
<td>Harthum</td>
<td>+59.9</td>
<td>60.9</td>
<td>56.8669</td>
<td>56.5</td>
<td>+5.4</td>
<td>+3.0</td>
</tr>
</tbody>
</table>

Source: Derived from Tables IC-1, 10-2 and 10-3.
include land reform measures, transportation and, in general, socio-economic programs designed to improve rural and nomadic people's lives. The same is true in the case of Kordofan province.

5.2.2 Input-Characteristics of Migration Subsystem

In the Sudan, as in many developing nations, contemporary rural-urban migration is a selective subsystem in the sense that it is composed of certain educational, age, social and economic attributes. These attributes suggest that it is the more educated, younger and able-bodied people with better social and economic backgrounds who migrate. Our knowledge of these characteristics of migrants in the Sudan is insufficient due to the lack of this type of data. There are two studies which treat this issue (Galaledin & El Mostafa, 1978; Oberai, 1977) on which the present study can draw, particularly in dealing with Greater Khartoum and the Gezira area.

These studies indicate that the dominant characteristics of migrants are that they are younger, more educated and economically active. Galaledin and El Mostafa observe that over 60 percent of the population of Greater Khartoum are migrants between the ages of 15 and
45. Over 70 percent of these migrants were accompanied by their families. These figures indicate that not only do individuals migrate, but their families migrate as well. (See Table 12.) This pattern involves a shift from personal to household migration which plays a crucial role in population growth-pressure in the Great Khartoum while severely affecting the outflow areas in the rural sectors of the less developed provinces through population depletion.

Likewise Khartoum province, the Blue Nile province annually attract about half a million migrants to work in the Gezira Scheme as cotton pickers. This pattern of migration to the Gezira area is predominantly a circular one which occurs seasonally. The significance of this migration pattern lies in the fact that it is gradually becoming a rural-urban migration subsystem composed of a large pool of potential rural-urban migrants, to Greater Khartoum, Wad Medani and Kassala in particular. 64.3% of the migrants to the Gezira scheme fall in the age-group of 15-44. Table 12 indicates that a great proportion of people leave their home areas early in life. The figures also show that an observable proportion of the child labour force (22 percent) lay in the age group of 5-15 years.

Although, the reasons behind child labour may be stated as economic in nature, they also can be attributed to the lack or inadequacy of educational services in the source areas of migrants.

So it seems that there is a concomitant relationship between the social and economic conditions of migrant families and child labour. This situation might explain the growing school dropout rate among migrants to Greater Khartoum and the Gezira area.
<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-34</td>
<td>63,426</td>
<td>10.6</td>
</tr>
<tr>
<td>35-39</td>
<td>49,596</td>
<td>8.3</td>
</tr>
<tr>
<td>40-44</td>
<td>43,116</td>
<td>7.2</td>
</tr>
<tr>
<td>45-49</td>
<td>25,928</td>
<td>4.3</td>
</tr>
<tr>
<td>50-54</td>
<td>24,186</td>
<td>4.0</td>
</tr>
<tr>
<td>55-59</td>
<td>11,752</td>
<td>1.8</td>
</tr>
<tr>
<td>60-64</td>
<td>11,215</td>
<td>1.8</td>
</tr>
<tr>
<td>65-79</td>
<td>5,303</td>
<td>0.9</td>
</tr>
<tr>
<td>80 and more</td>
<td>6,750</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Table 13. Distribution of Migrants by Level of Education and Sex (%) in Greater Khartoum, 1974.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Males (N=573)</th>
<th>Females (N=374)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No formal education</td>
<td>40</td>
<td>67.0</td>
</tr>
<tr>
<td>Primary not completed</td>
<td>10</td>
<td>4.0</td>
</tr>
<tr>
<td>Primary completed</td>
<td>26</td>
<td>21.0</td>
</tr>
<tr>
<td>Secondary not completed</td>
<td>13</td>
<td>4.0</td>
</tr>
<tr>
<td>Secondary completed</td>
<td>9</td>
<td>3.5</td>
</tr>
<tr>
<td>University, higher technical</td>
<td>2</td>
<td>0.5</td>
</tr>
</tbody>
</table>


*This study based on a sample survey of 15339 persons.*
Table 14. Distribution of Migrants Among Industrial and Occupational Activities in Greater Khartoum, 1974 (%)

<table>
<thead>
<tr>
<th>Category</th>
<th>Recent Migrants (under 5 years) N = 443</th>
<th>Longstanding Migrants (5 years or over) N = 2207</th>
<th>Natives N = 1,359</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>2.5</td>
<td>2.8</td>
<td>4.2</td>
</tr>
<tr>
<td>Mining</td>
<td>--</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>22.8</td>
<td>20.0</td>
<td>22.4</td>
</tr>
<tr>
<td>Electricity</td>
<td>0.5</td>
<td>2.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Construction</td>
<td>4.1</td>
<td>5.9</td>
<td>5.7</td>
</tr>
<tr>
<td>Transportation</td>
<td>7.0</td>
<td>15.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Trade</td>
<td>13.8</td>
<td>14.3</td>
<td>14.8</td>
</tr>
<tr>
<td>Finance</td>
<td>1.4</td>
<td>1.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Services</td>
<td>39.7</td>
<td>33.5</td>
<td>31.8</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>8.2</td>
<td>4.0</td>
<td>2.7</td>
</tr>
</tbody>
</table>

100.0       100.0       100.0
<table>
<thead>
<tr>
<th>Category</th>
<th>Recent Migrants (under 5 years, N = 443)</th>
<th>Longstanding Migrants (5 years or over, N = 2207)</th>
<th>Natives N=1,359</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional, tech. and</td>
<td>5.2</td>
<td>7.8</td>
<td>13.1</td>
</tr>
<tr>
<td>administration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerical workers</td>
<td>5.6</td>
<td>11.3</td>
<td>13.1</td>
</tr>
<tr>
<td>Tradesmen</td>
<td>10.6</td>
<td>12.4</td>
<td>11.2</td>
</tr>
<tr>
<td>Service workers</td>
<td>26.4</td>
<td>17.4</td>
<td>8.2</td>
</tr>
<tr>
<td>Agricultural workers</td>
<td>2.3</td>
<td>2.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Production workers</td>
<td>31.2</td>
<td>29.3</td>
<td>26.9</td>
</tr>
<tr>
<td>Unskilled labourers</td>
<td>7.7</td>
<td>4.7</td>
<td>7.3</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>11.0</td>
<td>5.0</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Also, the migrants' average income increases with age the 40-44 year old age group and then it declines steadily. The same is true of the duration of residency when comparing recent migrants to the long-standing migrants and/or natives. For instance, natives earned twice as much in manufacturing on the average as recent migrants.

In summary, there has been an important increase in the number of migrants leaving the economically depressed areas in hopes of finding a better life in the major urban centers of Khartoum, Kad Medani and Kassala. These major urban centers have historically provided greater opportunities both economically and socially. In the contrast, the rural areas are losing important human resources essential for development. Hence, it seems that migration is affected by direct and indirect factors associated with socio-economic development. The direct factors are related to economic opportunities and institutional services (input-output factors). If, therefore, socio-economic development is seen in aggregate terms of input-output transformation packed up by supportive, regulatory and adaptive procedures, it might be affected in itself by availability or scarcity of these essential inputs (labour, money, policies, transportation, potential resources, planning, etc.). Also, the amount of output desired (outcome) might considerably be affected, positively or negatively, by these input factors. Among the indirect factors associated with development are the governmental policies oriented toward development and urban/rural areas. In

1Long-standing migrant refers to the migrants who arrived in Greater Khartoum five or more years before the survey was carried out by I.L.O./UNDP Mission 1974.
<table>
<thead>
<tr>
<th>Category</th>
<th>Recent Migrants</th>
<th>Longstanding Migrants</th>
<th>Natives</th>
<th>All Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>377</td>
<td>389</td>
<td>408</td>
<td>396</td>
</tr>
<tr>
<td>Mining</td>
<td>---</td>
<td>738</td>
<td>618</td>
<td>650</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>245</td>
<td>418</td>
<td>509</td>
<td>429</td>
</tr>
<tr>
<td>Electricity</td>
<td>264</td>
<td>514</td>
<td>595</td>
<td>543</td>
</tr>
<tr>
<td>Construction</td>
<td>275</td>
<td>340</td>
<td>436</td>
<td>369</td>
</tr>
<tr>
<td>Trade</td>
<td>374</td>
<td>555</td>
<td>660</td>
<td>578</td>
</tr>
<tr>
<td>Services</td>
<td>307</td>
<td>433</td>
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<td>Overall Average</td>
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Source: Oberal, Ibid.

*LS = US $2.50 in 1974 prices.
addition, when migration starts, it becomes a new input to urban settings and, at the same time, output out of the rural areas. In either cases, it might have such impact on the receiving and sending communities; socially and economically.

In the literature of migration, a number of studies have shown a direct relationship between rural-urban migration and socio-economic development programs (Rodà, 1979; Saint and Goldsmith, 1980; Findlay, 1980). (Quoted in Brown and Sanders, 1981). These studies suggested that migration out of rural areas is due to the diffusion of technology and economic development in rural areas. Conversely, in this study, data based on migration and development show that poor level of socio-economic development in rural areas affect people to migrate to urban areas where socio-economic development programs are relatively advanced. This reveals that a relationship between migration and socio-economic development process is evident.
Chapter VI. Migration Analysis: Application of the

Conceptual Model

The Sudan is becoming increasingly concerned with the causes and implications of rural-urban migration for urban areas as well as rural ones. In the intercensal period 1955/56-1973/74, the population of the major cities in the Sudan (Greater Khartoum, Kassala and Wad Medani) rapidly increased (as shown in Tables 10-1, 10-2 and 10-3) with growth rate of 5 percent per annum. Since the natural population increase for the country as a whole was only 2.3 percent per annum over this period, most of the growth must have been due to migration [Oberai, 1977].

There are two major migratory patterns in the Sudan: (1) from the countryside and small urban areas to Greater Khartoum, and (2) from the countryside to the former Blue Nile and Kassala provinces in the central and eastern parts of the country where large development projects are located; (the Gezira, Khshima'giriba and Rahf). One of our main concerns is to explain determinants and effects of rural-urban migration both on rural and urban areas.

6.1 The Determinants of Rural-Urban Migration

The key determinants of rural-urban migration in the Sudan, are essentially related to the multivariate momentum of socio-economic development in the rural-urban system. To elaborate this idea, we return to our model emphasizing the systems analysis which defines socio-economic development as a form of input-output transformation process. Migration is defined as an input-output subsystem which
influences and is influenced by the overall socio-economic development and associated conditions including national policies. By addressing the factors related to socio-economic development and social structure in which migration occurs, we hope to analyze how migration is guided by these subsystem determinants while it influences them as well.

Within rural-urban systems, we have already indicated that there are input-output factors affecting migration. In rural systems, these inputs-outputs represent either supportive, regulative or adaptive factors in migration. For example, infrastructural facilities; land, irrigation, transportation negatively or positively affects a tendency toward population movement. Also, development outputs including generation of better economic opportunities (income, job prospects, marketing) and adequate social services (education, health, housing, welfare programs and safe water supply) are subsystem adaptation to population demands and environmental changes. The former, implies input-resources essential in generating socio-economic development, while the latter refers to the product of the input as pertaining to satisfaction or dissatisfaction of targeted population needs.

In urban systems, these inputs can be viewed broadly in terms of level of investment, capital, labour market; availability of jobs, transportation, communication and supportive network relations in urban setting. Output can be seen in terms of the urban system capacity in generating better economic opportunity and services, i.e., as the level of socio-economic development. Both in rural and urban systems there should be a need for a regulative subsystem to control migration. In rural systems, this function can be undertaken by family or community
values and attitudes toward migration while in the urban system other institutional procedures and policies can be adopted.

With all these considerations in mind, both in rural and urban areas, rural-urban migration in the Sudan responds to input-output characteristics of pushing and attracting communities which briefly can be absorbed in the general socio-economic development and institutional services of the surrounding region. In addition, there are facilitating factors such as informational feedback from urban to rural and vice versa which partially affects the decision to migrate, to stay, or to return. Also, the presence of extended family, friends and/or relatives in urban centers might help in accelerating migration as well as assimilating new migrants in the new residential urban setting.

6.1.1 Rural Related-Determinants

In rural Sudan, particularly in the study area of Northern, Darfur and Kordofan provinces, the influence of input-output characteristics on rural-urban migration is clear. The input-resource limits of agricultural production such as land shortage, land fragmentation system and the predominance of old techniques of vegetable growing in the Northern province have led to population pressure on the agricultural land resulting in a tremendous out-migration. Also, the underutilization of irrigation water from the Nile River due to the lack of technical equipments affects the productivity level and subsequently affects the income level as well.

Accordingly, the province has suffered from out-migration to the point of stagnating population of the province. If migration continues
to flow at that rate (Tables 10-1, 10-2, 10-3), the province would not only suffer from declining socio-economic programs but, more importantly, from lack of food production. Although, out-migrants continually support their families and relatives left behind in terms of money and consumer goods, there is no evidence that these remittances can help in improving the standard of living or in providing capital input for further development. Furthermore, there is evidence that radical out-migrants have permanently relocated in some major or medium-sized towns and maintain no strong ties with their home communities, except a few occasional visits.

Darfur and Kordofan provinces, or what is called the Western region, are inhabited with populations of similar social, economic, cultural and ethnic backgrounds. In this region the economic performance is dominated by a nomadic style of life and family practice in agricultural activities and tribal structure. Historically, this region had been neglected in terms of developing its agricultural potentiality and nomadic activities as well as of providing of institutional services such as schools, health, drinking water supply and other essential infrastructural inputs including investment programs. There were, however, many political and social reasons for this chronic backwardness since independence (1956) until recently. The main economic elements of this region are camel and cattle raising beside traditional agriculture (millet, sesame, sorghum, sun arabic, cotton, short stable, oil seeds and groundnuts).

For a great number of nomadic people in this region, animal husbandry is still considered as a symbol of status and social prestige
rather than a source of economic and social improvement. Consequently this wealth is not invested in an economically efficient way. This region, generally, is rich in natural and animal resources but these are underutilized. The main shortages in this region, affecting out-migration, lack of water supply, land reform and lack of developmental programs. Hence, people migrate to major urban centers in search for better economic and social opportunities.

In a study of 4,430 migrants carried by the Department of Social Affairs (1972) in Greater Khartoum, 95 percent of the total migrants reported that they migrated for job opportunities and social services. The survey indicated that if these socio-economic opportunities were provided in their areas of origin, the migrants would return to their home communities. A part of migration analysis in the Sudan reflects that rural-urban migration is not only influenced by rural-related and/or urban-related factors but it is also influenced by national development strategy and policy procedures. For example, the strategic orientation of development which is characterized by capital-intensive projects in the favored triangle of the former Blue Nile, Kassala and Khartoum has led to socio-economic development inequalities in income, jobs, wages, and social services. This growth-oriented strategy, as Faaland (1976) indicates, which is based solely on the potential of the modern sector, is significantly biased against the depressed areas of Northern, Southern and Western traditional agricultural regions.

6.1.2 Urban Related-Determinants

In the major urban centers migration is viewed in the context of
socio-economic development. Greater Khartoum, which is a dominant center of migration streams as we have already indicated, has the lion's share of economic activities, investment programs (industries) and social and recreational activities. It accounts for 90 percent of transportation devices, 50 percent of all public utilities and almost all of the educated Sudanese (Elsakhia, 1974). It includes a large number of manufacturing plants. Wad Medani is the second largest urban center in the country as a whole where the Gezira scheme is located. Rural masses, lacking basic services and economic opportunities move to these prosperous centers seeking better alternatives and to improve their economic and social well being.

Because too many of the migrants are unskilled and uneducated they find cheap wages as domestic servants, or join the informal sector. Usually, upon their arrival in a city, migrants look for their relatives—close or distant—friends and/or extended families to stay with while they seek work. This familialistic support plays a crucial role not only in adjusting migrants to the new urban situation but also in encouraging more newcomers to migrate.

6.2 Effects of Rural-Urban migration

6.2.1 Effects Upon the Major Urban Centers

The Sudan experience pertaining to migration provides some evidence on how both rural and urban communities are affected by migration. Initially, planners believed that rural-urban migration was an essential input resource in accelerating both urbanization growth and economic development in the major urban centers, Greater Khartoum, Wad Medani and
Kassala, and their surrounding areas. But as migration continues to flow at a high rate (5 percent) to these urban centers, particularly Greater Khartoum, it leads to new problems: increasing unemployment, pressure on existing social services and amenities, creating unhealthy shanty towns within and circling major cities, constraints on consumer goods and transportation.

Due to lack of data on employment (job opportunities) and institutional service capacities, it becomes difficult to assess the net effects of migration on the receiving urban centers. But, in general, as Tables 14 and 16 show, the majority of migrants work in the non-productive sector; services, such as domestic servants, shoe polishers and retail trade. It is generally realized that at planning and policy levels, neither market labour nor the social services sector are able to accommodate all of the migrants. At this point, there is a growing tendency among local urban authorities to devise procedures to curb the rural-urban migration flow to the large metropolitan centers, especially Greater Khartoum. Among these policy responses are "police campaigns" against migrants and beggars who have no jobs in the city, and fighting the illegal "outskirt buildings" that migrants construct. But these punitive procedures have had only very little impact, if any.

A major policy which the Sudan has recently adopted (1980) might positively affect migration influx: decentralization policy aims at redistribution of power, administration and budgetary allocation at regional and local levels away from Greater Khartoum. According to this policy each region (6 regions plus Khartoum nation's capital) will be independent financially, administratively and governmentally to run its
own economic and social affairs. In the long-run, I believe, this policy will lead not only to reduce regional economic differences but also, hopefully, to provide better opportunities for socio-economic development.

The success of this policy, depends upon the region and communities to adopt their own development momentum consistent with their resources (e.g., natural and animal resources in Kordofan and Darfur, forestry and fishing in the south, vegetable growing in Northern province, etc.). Through this mobilization of local resources a region can deal with its own priority issues both economically and socially. In doing so, rural-urban migration patterns might be affected, perhaps even reversed.

6.2.2 Effects of Migration Upon the Rural Source Areas

As we have already seen in the preceding chapter (5), the less developed provinces (Northern, Darfur and Kordofan) have lost population to the cities during the intercensal period 1965/66-1973/74. One result of this is human suffering. The population drain has produced a lack of human resources, particularly young people, who are necessary to carry out local developmental projects. The Northern province is a clear example of an area that has been deserted by the individual's born there. Similarly, Darfur and Kordofan provinces have also suffered considerably from out-migration during the same period. Migration trend among drop-outs and early school leavers from these provinces affects not only the labour market in the urban centers, but also the vocational development programs established in the deprived areas to help solve the
migration problem. Training programs (e.g., Youth Employment Promotion Project) aimed at solving the school-drop-out problem need to be integrated in the overall rural development (Shawky, 1972).

The major problem concerning rural out-migration in the Sudan is that migration costs both in rural and urban areas exceeds the benefits of migration if it is seen from a community perspective. One of the basic problems that rural-urban migration poses for development is that it affects productivity of both food and cash crops in rural areas. For too long we have viewed migration as a natural means of correcting for imbalances between rural and urban areas. This study suggests that migration can produce imbalances. In the Sudan, migration out of rural areas, particularly the traditional agricultural and nomadic areas, has led to stagnation of these areas. Planners and policymakers have tended to look for temporary solutions through migration rather than long term solutions that might have impact on both rural and urban areas. As regards to the effects of out-migration on rural areas one can assume the following:

1. Out-migration might deplete the source areas (the three less developed provinces) of agricultural labourers and non-agricultural skilled workers as well.
2. It affects food production as well as the commercial crops.
3. It can act as a contributory effect to rural stagnation. Since the skilled, able-bodied, educated persons have to decide to migrate, investment programs and development inputs might be affected due to the lack of these human input resources.
4. Local government revenue resources employed for local services
reflection of and a response to socio-economic development transformation in terms of job opportunities and social services. Developmental imbalances between traditional rural areas in Northern, Darfur and Kordofan and more developed ones in the triangle of Kassala, Blue Nile and Khartoum has led to:

1. maldistribution of population due basically to rural-urban migration; and

2. maldistribution of socio-economic development efforts (income, services) due to the concentration of development; major economic projects (the Gezira, Khashm el-Girba and Elshabad) and agro-industries in the surrounding areas.

Any attempt suggesting strategy guidelines to deal with migration so as to affect its course, magnitude and/or directionality, should consider this situation in mind.

Also, evidence suggests that uni-dimensional strategies (urban versus rural) functioning in isolation from each other affects not only the allocation of national resources but creates developmental and structural imbalances between rural and urban areas. Although in recent years the Sudan socio-economic development strategy has shifted its emphasis to rural development, basically toward capital-intensive agricultural projects, the strategy commitment to the favoured potential
agricultural areas remains almost the same. The current regionalization policy, however, aims at decentralizing public amenities, fiscal resources and redistribution of "elites" at regional and local levels might be promising in solving the chronic rural development problems: lack of water supply, inadequate social services and lack of employment opportunities.

As regards to out-rural migration, the following guidelines influencing migration are suggested:

1. Suggested Guidelines for Rural Areas:
   a. At the regional and local levels, attention should be given to the mobilization of rural/nomadic resources to constitute essential "inputs" for development. Many parts of rural Sudan, particularly in the study area, have rich potential inputs—mining, fertile land, rivers and animal resources—which are not yet utilized.
   b. The development orientation should give equal consideration to both economic and social aspects of development. This means that to combine both economic investment with social development (improving rural housing, health and welfare services) to improve both economic and social structures of rural population.
   c. Assessing and prioritizing community/regional needs as a base for long term and short term planning process.
   d. Encouraging small scale enterprises such as crafts and trade to help in generating additional benefits to rural families.
e. Rural and regional agencies' efforts should be channeled into integrated multipurpose/community development programs aiming at promoting family welfare, youth issues and health care.

2. Suggested Guidelines for Urban areas:

   a. Concern should be paid to develop medium-sized towns in the remote areas by providing these areas with infrastructural investment (development schemes) and encouraging local industries through tax benefits and incentives.

   b. Avoid conflicting policies as pertaining to migration. For example, the distribution of housing in Greater Khartoum encourages, in part, in-urban family migration. This is because the eligibility requirements for obtaining housing units is based essentially on family size. Also, the minimum wage policy (LS28 per month) implies similar encouragement for school leavers to seek jobs in urban areas rather than working in the rural agricultural sector. These policies, however, are inconsistent, if not conflicting, with the general trend among government authorities toward controlling or slowing in-urban flows particularly to Greater Khartoum.

3. The Urban development strategy should consider the influence of the informal sector on rural-urban migration. This sector has been growing haphazardly in the last decade to absorb migrants who are almost unskilled, uneducated and even unemployed practicing almost
everything; legal or illegal. In part, this sector contributes, to great extent, in creating the formidable black market in consumption goods, services, supplies and alike.

Following the above guidelines would help influencing rural-urban migration in the broader context of socio-economic development. Together, they aim at providing a guideline to thought on both development strategy and rural-urban migration.

6.4 Future Research Needs

The overall concern of this study is to provide the policy makers and planners of the Sudan with a body of knowledge about rural-urban migration and the socio-economic development process in the Sudan. Since this study is based on secondary data, there is a need to upgrade information in many areas of research. Accordingly, future research should address the following issues:

1. The distribution of income between and within rural and urban areas in order to assess the extent of income variance.
2. The effect of the urban-rural remittance system on rural development.
3. The impact of agricultural mechanization on agricultural labour.

In addition to these issues, top priority should be given to the following:

1. The investigation of causal relationships between rural-urban migration and education curricula which is urban-job
oriented. This can be seen by examining school leaver's migration patterns.

2. The investigation of the impact of decentralization policy, in the Sudan, on various patterns of migration: rural-rural; urban-urban; urban-rural; and rural-urban migration.

3. Attention also should be given to the investigation of the emigration of highly skilled people to the Arabian oil states which presently constitutes a brain drain phenomenon.

4. The investigation of the socio-economic spectra and production inputs in the six different regions of the Sudan and their implications for migration.
Chapter VII. Conclusion

In recent years there has emerged a general trend among policy makers, planners and researchers to consider rural-urban migration as an integral part of socio-economic development planning. This concern might be due to an increasing awareness of the impact and consequences of the migratory flow on both rural and urban communities. It is also generally realized that a balanced development strategy is needed to bridge the gap between rural and urban areas and consequently, to affect the movement of population out of the rural agricultural sector. In the Sudan, development strategy has been "urban biased" since the early 1960's resulting in concentrated socio-economic development in the few urban centers: Khartoum, Omdurman, Khartoum North, and Wad Medani. These urban centers have become "growth poles" as they attract migrants from rural areas.

This study has attempted to show that rural-urban migration is associated with socio-economic development in the Sudan. Apparently, the two subsystems are collaborative in the sense that each one is contributing and influencing the other. In this respect, the emphasis of this study is placed on the ways socio-economic development (employment opportunities and social services) might have impact on stimulating rural out-migration. Also, migration as an input resource (labor force, skills and experience) might have impact as well both on urban receiving centers and rural agricultural areas.

In order to deal with this complex texture of rural-urban migration in the context of socio-economic development, a systems approach-based
model is developed to guide the present migration analysis. It is our contention that the systems approach has significant properties in emphasizing multi-variate dimensions that are assumed to be involved in migration decision-making. Hence, visualizing rural-urban migration as input-output as pertaining to development suggests a study of the influence of social, economic and national environmental conditions (policies, taxes) on migration and vice versa. In this regard, three basic input-output subsystems (supportive, regulatory and adaptive) are found both in rural and urban systems closely related to migration in the Sudan. In addition, migration as input-resources is deemed detrimental, at least from a historical viewpoint, to socio-economic development in the favored areas of Greater Khartoum, the former Blue Nile and Kassala provinces. Evidence suggests that, migration was no longer beneficial both to the source areas of Darfur, Kordofan, Northern and the receiving areas as well.

Rural out-migration from the sending areas mentioned above has affected the agricultural output. Cash and food crops are considerably affected in the Northern, Darfur and Kordofan provinces due to out-migration. For the major urban centers, urban in-migration has led to continuous pressure, if not crises, on social services (health, housing, transportation and food consumption), social problems (crimes, begging and vagrancy) and employment generation (increase the unemployment rate) particularly in Greater Khartoum.

Although there has been much discussion at different official levels, and many conferences have been held in the Sudan over the past decade aimed at solving the migration problem, rural out-migration
remains a challenging problem. This situation might be due, among other factors, to the fact that when migration has to be addressed, the focus is almost always centered only on its impact on the urban situation, especially in the case of the Khartoum capital.

In this study, an attempt is made to highlight the causal dimensions involved in rural-urban migration as well as its consequences. In addition, several strategy/policy guidelines pertaining to migration in the context of development are suggested both at rural and urban levels. If these suggestions are to be considered within the new frame provided by decentralization policy in the Sudan, some changes in the course of migration might take place.
Bibliography


