IMPLICATIONS OF DEVELOPMENT PROGRAMS FOR POPULATION REDISTRIBUTION IN SRI LANKA WITH SPECIAL REFERENCE TO NORTH CENTRAL PROVINCE AND COLOMBO REGION

BY

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DECLARATION

Except where otherwise indicated this thesis is my own work.

January 1985 W. I. DE SILVA

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ABSTRACT

This thesis analyses the overall migration trends and patterns in Sri Lanka to identify the most popular migration destinations in the country. For this purpose data from the ten percent sample of the 1971 and 1981 censuses were used. Two dominant migration streams were observed: one in the wet zone to Colombo Region, and another in the dry zone to North Central Province (NCP).

Since NCP and Colombo Region currently contain the leading development programs of the country, the Mahaweli and the Investment Promotion Zones respectively, the migration trends and patterns of these areas were examined in more detail. The study thus has highlighted some of the desirable and undesirable effects of the leading development programs on population redistribution in the country.

The findings indicate that there is also an increasing trend of out-migration from NCP and therefore policies should be formulated to encourage peasants to stay in NCP, at least to achieve the main objectives of the Mahaweli program. The most crowded and one of the most popular destinations in the country, Colombo Region, had the highest net gain of recent migrants (those coming in the past five years), however lifetime net-migration was higher in NCP. From the demographic point of view this higher attraction of migrants to Colombo Region had an undesirable affect on the goal of achieving a more equitable distribution of population in the country. Therefore national development policies and population redistribution policies should be integrated at the early stages of planning.

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Chapter 1

INTRODUCTION

A majority of the third world countries, including Sri Lanka, have come to see their chronic population problem in terms of maldistribution, with some areas over-crowded and others under-populated. The United Nations Fifth Population Inquiry in 1978 found that the overwhelming majority of developing countries identified population distribution as a serious development problem rather than population growth per se (United Nations, 1980a, 1981a). Therefore many countries in the developing regions have recently adopted population redistribution policies to affect the rates and patterns of internal migration, though the degree to which these policies have been implemented differs substantially (United Nations, 1984). However as Jones (1982:25) noted, "--- despite the importance accorded the aim of rationalizing the location of industry and population, demographic considerations are not integrated at all effectively in regional planning in Asia".

The question can be raised as to why so many governments of developing nations are dissatisfied with their current population distribution or why population redistribution policies are important. As Fuchs (1983:3) indicated, there is no single explanation for this, however

> "More generally, problems may develop of spatial disparities in labour availability and employment opportunities, with a relative excess of labour available in old, settled agricultural regions as compared with newer frontier regions, or in the primate metropolitan areas as opposed to other urban centers".

In the Sri Lankan context there is not much argument about what should be done to reduce fertility and mortality, and there have been significant successes. Nevertheless there is no unambiguous success with respect to population distribution. As with most of other developing countries, the population of Sri Lanka is unevenly distributed, with about 70 percent of total population living in the wet zone, the south-west corner of the country which constitutes 30 percent of the total land area. Direct redistribution policies such as the colonization program started in the 1930's, with the primary aim of relieving population pressure in this densely populated part of the island (Weerasooria, 1980:3). However this shift of population has not occurred at an acceptable pace (Ministry of Plan Implementation, 1982a).

In 1970 the Mahaweli Development Program, the largest such program in the history of Sri Lanka, was inaugurated. This program aims at shifting and redistributing Sri Lanka's population from the more densely populated wet zone to the dry zone areas where land is more freely available (Jayewardene, 1982:5). Almost all land settlement schemes under this development program are located in North Central Province (Anuradhapura and Polonnaruwa Districts) and the first of these was initiated in 1976. Although this program is still in operation other initiatives of a new government (elected in 1977 and still in power) have introduced conflicting policies. The investment Promotion Zone (Free Trade Zone) in Colombo Region, initiated in 1978, could well be expected to increasingly attract people from outer areas of the country rather than curb in-migration to Colombo Region, the most crowded area of the country. Consequently there may be some undesirable influences on population distribution in

the near future. A United Nations report provides a general view point regarding the effects of development policies on population redistribution in Sri Lanka:

> "A most important shortcoming is the failure on the part of decision makers to realize the implications for population distribution of the policies they advocate and the short-term policies which lead to the creation of more difficult problems in the long run as a result of short-term and partial solutions to immediate problems" (United Nations, 1980b:114).

Development programs in the country generally are oriented towards the socio-economic development of the people and therefore indirectly influence the majority of migrants. The present study will focus on the migration trends and patterns of the country and specifically on North Central Province (NCP) and Colombo Region, because these two areas currently are subject to the two largest development programs in Sri Lanka. In the next section the literature on internal migration in Sri Lanka is reviewed, and this review indicates that Colombo Region in the wet zone and NCP in the dry zone are the most important migrant destinations.

1.1 Review of Literature on Internal Migration in Sri Lanka

In Sri Lanka increasing attention is currently being paid to internal migration including its patterns and trends. Vamathevan's (1961) study, the first detailed study on internal migration in Sri Lanka, was a most extensive work, using the vital statistics method, the census forward survival ratio method, and place of birth by place of residence to analyse the census information. His study, which dealt with the period 1946-53, identified two important net

in-migration areas, the dry zone districts and Colombo District. The three different estimates he derived all showed that the dry zone has received larger volume of migration than Colombo.

Abhayaratne and Jayewardene (1965) extended the Vamathevan study using an index of attraction as "a measure of the selective popularity of an area as the destination of a migratory move" (United Nations, 1976:49). The index of attraction was defined as the sum of the percentage of migrants into an area from every other area divided by the total number of areas (Pressat, 1964). They conclude that the index of attraction during the period 1946-53 was highest for Colombo District followed by Anuradhapura District. In general most of the findings of the Abhayaratne and Jayewardene study confirm the results of Vamathevan.

Internal migration in Sri Lanka, India and Pakistan was the subject of a paper by Bose (1965) presented to the World Population Conference in 1965. Bose found some basic similarities in the patterns and characteristics of urban ward migration in the countries, and observed that the majority of migrants to cities in these countries went in search of employment opportunities rather than improved employment status.

The Marga Institute study of 1975 examined the volume, pattern, intensity and direction of internal migration in the 1953-63 period using the same methods as Vamathevan. The results obtained by the two methods (vital statistics and place of birth) were different in all districts of Sri Lanka. This can be attributed to the difference in the data sets and the procedures involved in analysing them. Nevertheless, the directions of net migration flows were consistent

for both methods. A comparison of estimates shows that the volume of migration to the dry zone increased during the intercensal period of 1953-63. Estimates of net in-migrants revealed that at least twice as many migrants went to the dry zone as went to Colombo. The index of attraction was highest for Colombo (23.3) and this indicates an increase in the number of migrants over the intercensal period moving to this district.

Richards (1971) estimated the lifetime net-migration for different regions for the period of 1953-63. In his study he classified Sri Lanka into 5 regions: the low country, the hill country, the dry zone, Jaffna and Colombo. He estimated that all migrants originated from the three out-migration regions (the low country, the hill country and Jaffna), and just over one-third moved into the Colombo Region whereas almost two-thirds settled in the dry zone region.

Abeysekera (1979), used a survey approach to analyse determinants and consequences of internal migration in Sri Lanka, specifically from the rural wet zone to the rural dry zone areas. Two major expectations and several auxiliary hypotheses guided his study. The two major expectations were that migrants to the dry zone would be disproportionately selected from among the landless or minimally landowning peasantry of the wet zone, and the second was that the socio-economic conditions of the migrants would have improved appreciably. Utilizing multiple regression analysis he revealed that land ownership, although being the prime reason for migration, did not discriminate significantly between those who migrated and those who stayed. Therefore the major expectation of the study was not

substantiated by the data. As he stated "...the more discriminating dimension in explaining the variance in the propensity to migrate seems to have been not land ownership but the level of integration into communal activity" (Abeysekera, 1979:448). In the process of rural wet zone to rural dry zone movement both the colonists and the voluntary migrants have benefitted in terms of land ownership and control since migration.

Abeysekera (1981) using more or less the same regional classification as Richards (1971) indicated that one-fifth of lifetime out-migrants from Colombo during 1953-63 migrated to Anuradhapura; conversely, just over one-eighth of all out-migrants from Anuradhapura went to Colombo. Analysing lifetime migration data from the 1971 census he found that Colombo was the most popular destination with 33 percent of the migrants settling there. The dry zone was the next most attractive area, taking 29 per cent of the migrants. Dealing with patterns of migration, a separate index of 'retentive attractiveness' was computed. The index indicated that the dry zone has retained most migrants; much more so than Colombo, the only other region to show positive retentive capacities.

A study by the Department of Census and Statistics (1978) discussed the pattern of internal migration during the 1963-71 intercensal period, using the vital statistics and census survival ratio methods. This study demonstrated the continuation of the overall pattern observed during the preceding intercensal periods - a movement of persons from the densely populated wet zone to the sparsely populated dry zone districts. A United Nations (1976) study found that the exception to this pattern was Colombo in the wet zone,

which in all three intercensal periods (1946-53, 1953-63, 1963-71) recorded a net in-migration. Internal migration during the years 1966-71 was analysed by Wilson (n.d) on the basis of 1971 census data on usual residence cross classified with previous residence. The pattern of movement during the period is similar to the pattern of migration discussed in the United Nations (1976) report. In the 1966-71 period the highest proportion of in-migrants, 25 percent, moved to Colombo, conversly among out-migrants the highest proportion, 15 percent, originated from Colombo. Population transfer between Colombo and other districts of the country ended up in favour of Colombo District, which had a net gain almost four times that of the second ranked district, Anuradhapura.

Siddhisena (1979) focussed his study on the patterns of permanent and temporary migration into five major urban areas of Colombo District at the 1971 census. He identified two streams: migrants from within Colombo, and migrants from outside Colombo District. There were more migrants in the first stream, thus providing evidence in support of the hypothesis that most people tend to move over shorter rather than longer distances (Siddhisena, 1979; Dias, 1977).

A country monograph (United Nations, 1980b) prepared by national experts contains the most extensive work on internal migration in Sri Lanka. The movement from the wet zone to the dry zone was apparent also in this study, especially to Anuradhapura District, although it was not of the same magnitude as migration to Colombo. The findings suggested that the movement into the dry zone was a phenomenon of the post independence period which reached its peak in the late 1950s. Analysing the duration of residence data, experts identified the

increasing share of the lifetime out-migration from some of the dry zone districts, including Anuradhapura and Polonnaruwa.

Dias (1980) examined the patterns of internal migration in the period 1963-71 and concluded that almost three quarters of life-time migration in Sri Lanka was towards rural settlements. As he stated, the greater part of the internal migration in the country is rural to rural.

Utilizing the information from the population censuses of 1963,1971 and 1981 with vital statistics, the Department of Census and Statistics (1983a) has produced net-migration volumes and rates for each district for the periods 1963-71 and 1971-81. The study shows Colombo as a net in-migration district which received the highest number of net-migrants in the period 1963-71. However in the next intercensal period (1971-81) Colombo was found to be a net out-migration region (Appendix A.1), which raised the issue of whether in the last decade Colombo had lost its attraction. In fact other residual methods (forward survival and place of birth methods) used for the period 1971-81 did not identify Colombo as a net out-migration district (Ukwatta, 1982). Overall this study identified the most important migration destination area as the Mahaweli Region and indicated the pressure of land in the wet zone as one of the main determinants of migration to the Mahaweli area.

All these studies indicated more or less the same patterns of internal migration in the country: movement to Colombo Region in the wet zone, and movement from the wet zone to the dry zone. However in the 1971-81 period the vital statistics method indicated Colombo was a net out-migration region, while NCP as the most attractive

destination. The present study further analyses the migration trends and patterns of the country, and these two areas specifically, to assess the real impact of migration on the population redistribution of Sri Lanka.

1.2 Importance of the Present Study

During the last three decades, government plans in Sri Lanka have been directed towards a substantial transfer of resources to the rural sector. The decentralized development strategies "... have been designed to improve agricultural productivity and socio-economic status and alleviate population pressure elsewhere, as in the dry zone projects in Sri Lanka" (United Nations, 1984:332). As Findly (1977) and Hameed et al.(1977) observed, Sri Lanka is one of the few countries in Asia to implement land settlement programs consistently as the principal means of preserving the peasantry, relieving the pressure of population on land in the wet zone and increasing agricultural production.

In fact the expansion of facilities such as agricultural extension services, banking, marketing, education and improved health systems in the rural sector has helped to minimize rural-urban disparities and prevent rural-urban polarization (Jones and Selvaratnam, 1970; United Nations, 1984:330). Between 1946 and 1971 the proportion of the population living in urban areas increased from 15.4 percent to only 22.4 percent (Appendix A.2), and in the last intercensal period (1971-81) this proportion actually declined to 21.5 percent (the number of urban localities remained almost constant in

1971-81; Appendix A.2). Observed population growth in the urban sector in Sri Lanka for the periods of 1953-63 and 1963-71 was much higher compared with the growth of the total population. However in the period 1971-81 the reverse occurred. The observed annual urban growth rate was only 1.2 percent, considerably lower than the growth rate of the total population (1.7 percent). Therefore, as observed by the Ministry of Plan Implementation (1982a:8), "The rate of urbanization has been neither as spectacular as the rate of population increase nor comparable to the rate of growth of urban population in many developing countries in the region during the same period".

Colombo Region, which includes Colombo and Gampaha Districts, is the chief administrative and business centre and subsequently has more amenities compared with other parts of the country. Over half of the total urban population is in Colombo Region (Table 1.1). In contrast to the common pattern in the Asian region, fast growth of the largest cities and stagnation of the small towns have not occurred in Sri Lanka, where the highest growth rates have been in small towns during most of the century, creating a pattern of decentralized urbanization (Pryor, 1975; Abeysekera, 1980). In fact even within Colombo Region nearly one half of the population lives in rural localities (Table 1.1).

Table 1.1

PERCENTAGE OF URBAN POPULATION OF NORTH CENTRAL PROVINCE (NCP) AND COLOMBO REGION IN 1971,1981

Area	Percentage of Urban Population		Percentage of Urban Population to the Total Urban population	
	1971	1981	1971	1981
NCP	10.0	7.3	1.9	1.9
C.Region	55.2	53.4	51.8	51.6
Sri Lanka	22.4	21.5		

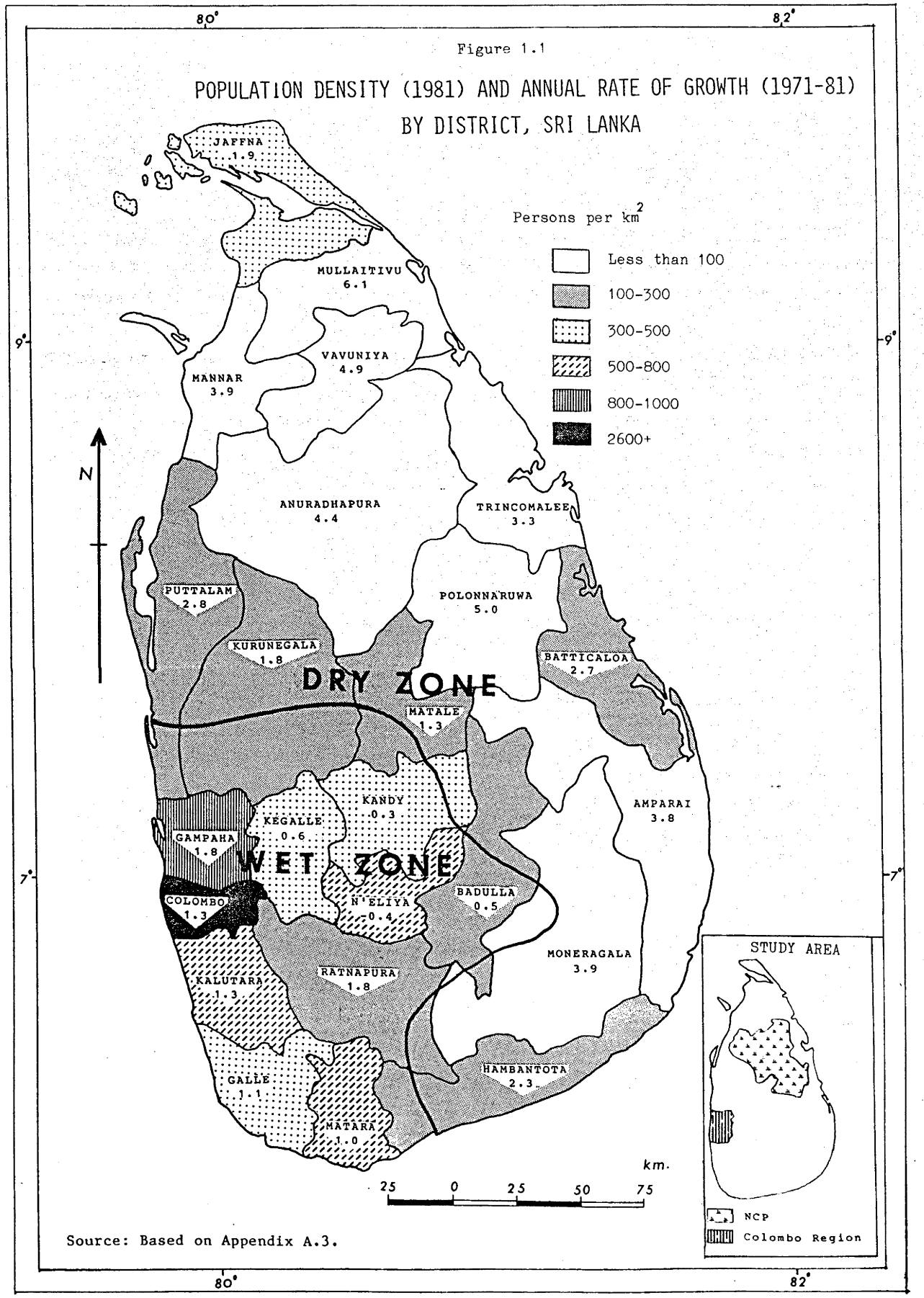
Source: Derived from census publications of 1971,1981.

On the other hand, North Central Province (NCP) which is composed of Anuradhapura and Polonnaruwa Districts and covers the majority of the Mahaweli settlements, displayed quite different patterns of urbanization. The urban component of the population in NCP is small and has declined over time (Table 1.1).

The variations in population size and density in Sri Lanka have raised two kinds of problem. First, the problem of over-concentration occurs in the districts in the wet zone and especially in Colombo Region. Second, the problem of under-population occurs in the rest of the country, basically the dry zone. Almost all districts in the dry zone have lower population densities compared with those in the wet zone, though they recorded higher rates of population growth, in the most recent intercensal period (Figure 1.1). The NCP has the highest annual rate of growth, 4.6 percent for the same period (Appendix A.3).

Figure 1.1

POPULATION DENSITY (1981) AND ANNUAL RATE OF GROWTH (1971-81) BY DISTRICT, SRI LANKA



Source: Based on Appendix A.3.

In 1981 the density of Colombo Region was 1505 per sq.km., nearly seven times that of the country as a whole (Table 1.2). Though Colombo Region contained 21 percent of the total population it covered only 3.2 percent of the country's total land area. On the other hand NCP had the greatest land area and recorded the lowest density (Appendix A.3).

Table 1.2

POPULATION AND DENSITY OF NCP AND COLOMBO REGION, 1981

Area	Enumerated Population 1981		Population Growth	Land Area	Population Density
	(000')	%	1971-81	%	(per sq.km)
NCP	850	5.7	4.6	16.3	81
C.Region	3,088	20.8	1.5	3.2	1505
Sri Lanka	14,850		1.7		230

Note : Population growth refer to exponential rate.
Source: Derived from census publications, 1971,1981.

Since 1935, as a result of colonization programs, the dry zone districts have attracted considerable population from the wet zone. At present the country's largest development program, the Mahaweli is attracting a massive influx of migrants to NCP.

Almost all studies of internal migration in Sri Lanka indicated that at all time periods Colombo Region was the highest single net gainer (Vamathevan, 1961; Abeysekera,1981). In the recent past the rapidly growing Investment Promotion Zones (Free Trade Zones) have also attracted a considerable number of migrants to Colombo Region. This has added to a further increase in the high concentration of population in Colombo Region. Therefore it appears that instead of

adopting an integrated development policy to curb migration to Colombo Region, the government has implemented a development policy to attract more people to Colombo Region, the most crowded area of the country. It can be concluded that the two main development programs may be in conflict with each other with regard to their impact on population distribution. Economic planners most frequently misunderstand the determinants of population distribution. As Richardson (1984: 285) noted, "...there is a myopic focus on the effects of explicit population policies, ignoring the much more powerful spatial effects of national development strategies and other implicit population distribution policies".

Since there has been no study using direct information from the ten percent sample tapes of the 1981 census , the present study will attempt to analyse the overall migration trends and patterns of the country and two specific areas in detail, NCP and Colombo Region. Uneven distribution of population and differences in regional development planning are the main predetermining factors of internal migration. The study will also highlight some of the desirable and undesirable effects of development programs for population redistribution in Sri Lanka, in an attempt to provide some basic guidelines to the economic planners regarding the implications of their plans for population distribution.

1.3 Objectives and Hypotheses

The main purpose of this study is to show how internal migration in Sri Lanka has been affected by the different development programs. Specifically this study will:

(1) Examine the patterns of internal migration (lifetime and recent migration) in Sri Lanka.

(2) Examine the migration trends and patterns of NCP and Colombo Region of Sri Lanka and their implications for development.

(3) Determine the main features of the leading development programs of the country and their job creation potential.

(4) Determine who are the migrants of NCP and Colombo Region and how they differ in characteristics from non-migrants.

(5) provide basic information necessary for policy makers on the relationship between internal migration and development in the country.

(6) Determine the future population size and the structure of NCP.

This study attempts to test the following hypotheses regarding internal migration in Sri Lanka.

(1) In Sri Lanka the pattern of net migration is towards the leading development programs irrespective of whether they are located in the wet zone or dry zone.

(2) The Mahaweli, the largest development program of the country and located mostly in NCP, has had a greater net gain in volume of people than Colombo Region, where the capital and primate city is located, and therefore a more equitable distribution of population is discerniable.

(3) A greater proportion of in-migrants to NCP are of the familial type while in Colombo Region more are single.

(4) Among in-migrants of Colombo Region unemployment is higher than those of NCP.

1.4 Definitions

A number of terms relating to migration status are used in this study, and it is necessary to distinguish these terms from each other.

LIFETIME MIGRANT

A person whose district of usual residence at the census date was different from his/her district of birth.

LIFETIME RETURN MIGRANT

A person who has returned to his/her district of birth after having migrated at least once in his/her lifetime.

MIGRANT (recent)

A person whose duration of usual residence at the census date is less than five years and whose previous place of residence was in another district.

NONMIGRANT

Includes all the following categories:

A person who has been living at his/her place of usual residence since birth.

A person whose duration of usual residence is more than or equal to five years.

A person whose duration of usual residence is less than five years but whose previous residence was also in the same district.

1.5 Sources and Limitations of Migration Data

As with most developing countries, in Sri Lanka the census data are the main source of information on internal migration. The ten percent sample tapes of the 1981 census of Sri Lanka provide the main data source for this study. Occasionally the ten percent sample tapes from the 1971 census will also be used to compare the migration trends and patterns over time.

In the ten percent sample design, the urban, rural and estate sectors of each district were considered as different strata and a systematic sample of one in ten census blocks was selected in each stratum. This procedure yielded a sample of 1,446,751 individuals out of the total population of 14,850,000. The corresponding 1971 ten percent sample size was 1,237,087. All the statistics presented in the following chapters pertaining to migration refer to the 10 percent sample of the population and these data have not been inflated to the total population.

Direct questions on internal migration were included in both censuses. The data collected included district of birth, district of usual residence , duration of stay at usual residence, and district of previous residence for those persons who had not been living at their usual residence since birth (Appendix A.4). In the 1971 and 1981 population censuses the items 'place of birth' and 'place of previous residence ' were collected on a district or country basis but not on an urban and rural basis. Therefore place of birth data and place of previous residence data have serious limitations in that the origin of the migrants, whether rural or urban, cannot be distinguished. Similarly circular migrants cannot be identified from the census information.

As the size of the population in some districts is relatively small it is considered useful to include a table of sampling variability (Appendix A.5) for recent migrants (1976-81) as a proportion of the total resident population. Although some examination of lifetime migration patterns is included below, a similar analysis for lifetime migration has not been done. This is because recent migration is considered to be more relevent to the aims of this study.

1.6 Delineation of the Study Areas

The island of the Democratic Socialist Republic of Sri Lanka is situated in the Indian Ocean just south of the Indian sub continent, and has a land area of 65,610 sq.kilometres. The island is compact, and only 434 km. long from north to south and 225 km. wide from east to west. It has been divided into broad agro-climatic regions known

The economy of Sri Lanka is predominantly agricultural, but the trade and commerce sector has been growing rapidly in recent years. The Colombo Region has the major share of the industrial and service sector of the country. The NCP was the centre of the ancient Kingdom of Sri Lanka for more than ten centuries, and has a long history of established peasant agriculture, basically paddy (rice) cultivation (De Silva, 1977).

1.7 Outline of the Thesis

The following chapter covers two topics: policies and programs influencing internal migration, and overall internal migration patterns as observed in the 1981 population census of Sri Lanka. An analysis of migration trends and patterns of NCP and Colombo Region is presented in Chapter 3. Chapter 4 examines the characteristics of migrants and non-migrants of NCP and Colombo Region. The impact of migration on the future size of the population and labour force of NCP is discussed in Chapter 5. Finally in the last chapter a summary of the findings and relevant conclusions are presented.

Chapter 2

DEVELOPMENT POLICIES AND INTERNAL MIGRATION IN SRI LANKA

To the extent that government policies and programs influence economic and social status, all governments influence migration behaviour directly or indirectly. This process has created an imbalance in the pattern of human settlement in Sri Lanka. As Jones and Richter (1981:4) state, development planning is often based on the assumption that raising the socio-economic status of the peasants and providing better infrastructural facilities will hold them in rural areas.

The first section of this chapter is mainly concerned with the development policies and programs which are significantly related to internal migration in Sri Lanka. In the second part the emphasis is on describing the overall internal migration patterns in the country as observed in 1981.

2.1 Policies and Programs Influencing Internal Migration

Policies and programs influencing internal migration are generally categorized as either direct polices explicitly designed to alter migration behaviour or indirect policies whose impact on migration is secondary to the basic goals of the policy. Policies and programs to effect the distribution of population are generally thought of as intervention to bring the distribution of population

into accord with the spatial distribution of economic opportunities (Pryor, 1981).

In their efforts to cope with rural unemployment and low levels of agricultural output, many countries have turned to land settlement, colonization, and irrigation schemes or a combination of all these (Findley,1977:88). In Sri Lanka many research findings point to the success of colonization and irrigation schemes which have resulted in increased agricultural production and at the same time considerable relief of population pressure in the wet zone (Indraratna, forthcoming).

The leading development programs of Sri Lanka, the Mahaweli and the Investment Promotion Zones will certainly have a significant impact on internal migration. Other development activities include Integrated Rural Development Programs, Urban Development Programs, and Housing Programs. Although these programs should have some impact on internal migration patterns they are not the focus of this study. This chapter will look instead at colonization, the Mahaweli and the Investment Promotion Zones in the study areas, NCP and Colombo Region.

2.1.1 Colonization and Land Development

The direct policies formulated to redistribute the population of Sri Lanka induce population shifts through land development and colonization. The origin of the colonization program in Sri Lanka in its present format was in the 1930's. Many reasons can be given for the adoption of this policy in Sri Lanka. Basically the aims are twofold: to increase food production and to relieve population

pressure in the wet zone (Johnson et al, 1981; United Nations, 1980b; Morrison et al, 1979).

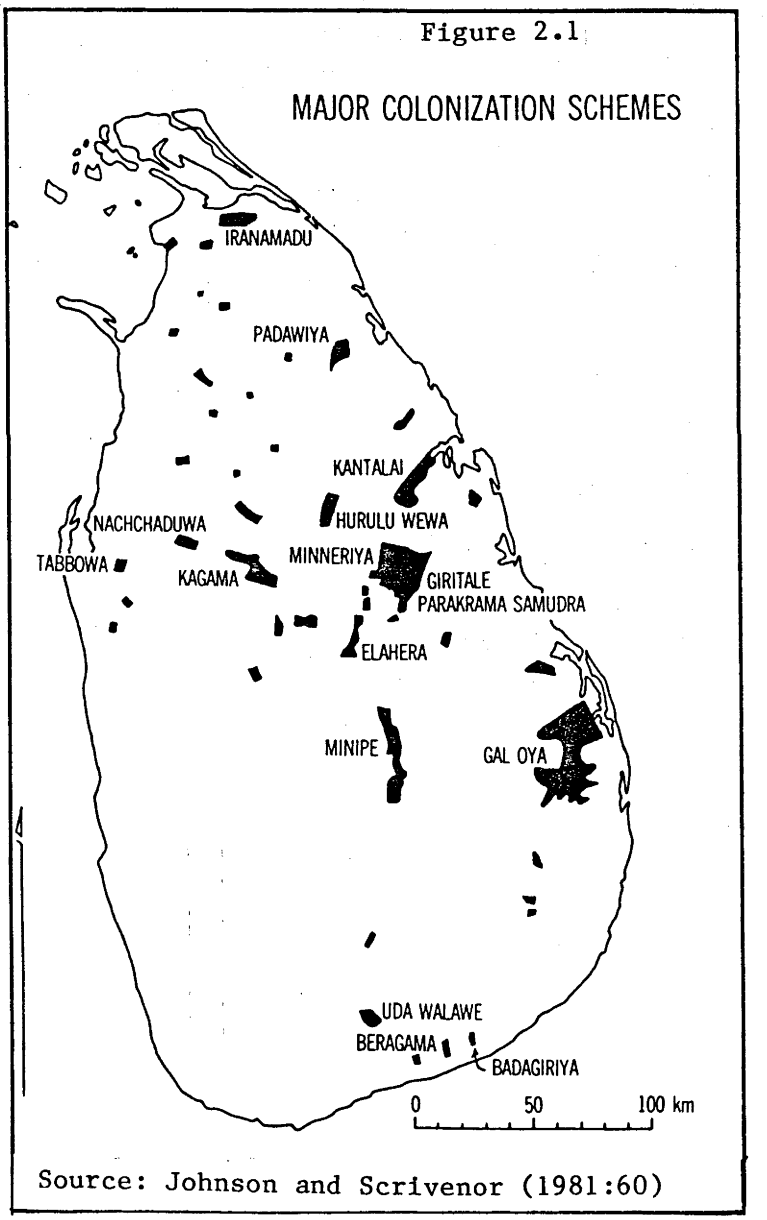
Since agricultural expansion is quite possible by providing irrigation in the dry zone, land development in this area received great attention in government development programs. At the same time the rapid population growth observed in the wet zone of the country in the early decades of the twentieth century made necessary the development of land in the sparsely-populated dry zone. Only since 1953 has the dry zone proportion of the total population increased, and as this indicates the degree of redistribution and growth, it tends to suggest the success of the colonization programs. In the period 1971 and 1981, however, the rate of population growth in the dry zone was the highest in the country (Figure 1.1).

Although the government encouraged people to migrate to the dry zone in the early stages of the colonization program, the prevailing difficulties, such as endemic malaria and undeveloped infrastructure reduced the attractiveness of these areas to potential migrants. The virtual eradication of malaria in the country in 1947, however, eliminated one major impediment to development of the dry zone.

The National Planning Council report (1959) which emphasized the importance of colonization schemes, was designed to bring 400,000 acres (162,000 ha.) under irrigation during the period 1957-68. In the early phase of settlement in the dry zone the government found it difficult to get enough settlers to migrate there, but changing conditions made these areas so desirable in the latter phase that the government had to select from the many applicants who wished to settle in the new lands (United Nations, 1980b).

Between 1953 and 1969 70,686, people were resettled in the major colonization schemes in the dry zone, nearly five times the number estimated by Farmer (1957) at the end of 1953 (Land Commissioner, 1975:77). In 1975 there were 105 major colonization schemes located in various parts of the dry zone excluding Mahaweli settlements (Figure 2.1).

Figure 2.1



Source: Johnson and Scrivenor (1981:60)

The majority of the land settlement or development programs in the latter half of the 1970's were implemented through the Mahaweli Development Program. Sri Lanka has a long history of state sponsored settlement, but a settlement program of the magnitude envisaged under the Mahaweli project clearly made it the first of its kind in the country (World Bank, 1977; De Silva,1982). The following section focuses on this program to trace its impact on internal migration patterns in the country.

2.1.2 Mahaweli Development

The Mahaweli is Sri Lanka's longest river. It has a total drainage area of 10,547 sq.km. approximately 16 percent of the total land area of country (United Nations,1967). In 1963 the Government of Sri Lanka requested assistance from the United Nations to carry out investigations for the complete utilization of the water resources of the Mahaweli river for irrigation and the generation of hydroelectric power. A feasibility study carried out by UNDP/FAO in the 1960s developed a master plan which called for the irrigation of 360,000 ha. including about 100,000 ha. of currently cultivated land and 260,000 ha. of uncultivated land. This involved resettlement of 220,000 families in the dry zone and 507 mw. of power generated in a series of schemes over 30 years, from 1970 to 2000 (United Nations, 1980c; Mendis, 1973).

In 1970, construction of two dams for irrigation and power was begun as part of the first project. When the present government came to power in 1977 it decided to extend and speed up the implementation of the original plan. The Accelerated Mahaweli Program, initiated in

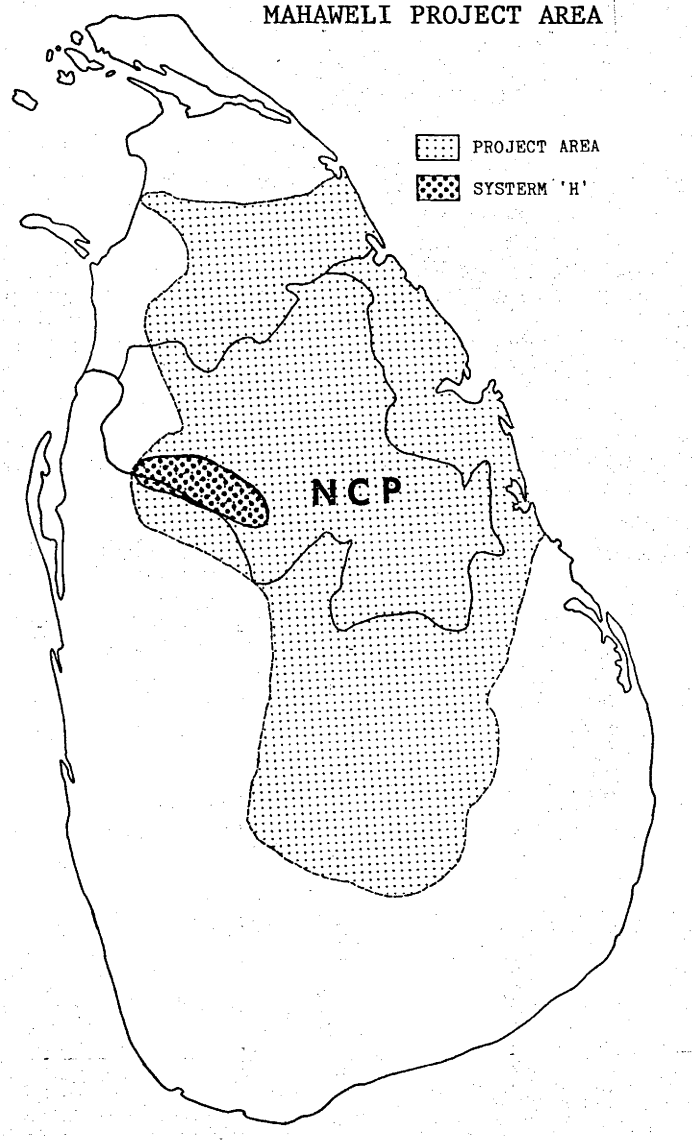
1977, called for the resettlement of some 140,000 families on approximately 142,000 ha. of land within a six year period (Laquian, n.d). In 1977, the scheme was expected to cost around Rs. 14,900 million (1978 prices: $ US 1=15 Rs.). This program is considered one of the most ambitious and perhaps the largest development schemes in the Third World (Madeley, 1984). In the allocation of resources for national development in Sri Lanka, the Accelerated Mahaweli Development Program continues to receive highest priority.

The majority of the land settlement schemes and much of the newly irrigated land under the accelerated program are located in the Anuradhapura and Polonnaruwa Districts (NCP) of Sri Lanka (Figure 2.2). The program is expected to double the present population, employment and area cultivated, and diversify cropping patterns under settlement schemes (Wimaladharma, 1982a:8). In addition to sponsored settlers on the government lands, encroachers have been attracted to the project areas because of the development effort of the government. Laquian (n.d) estimated that from 15 to 20 per cent of the eventual population in Mahaweli area would be "spontaneous" migrants.

The first system established under the Mahaweli scheme was a model resettlement area called project 'H'. Resettlement began in 1975 when 500 families moved into the area. By 1983 the Ministry of Mahaweli Development (1983:64) reported that almost all of the 22,404 families to be resettled in project 'H' had been given their allocation of land, begun farming, and completed their homes. Each was given 2.5 acres (1 ha.) of irrigated land and half an acre (0.2 ha.) of land on higher ground on which to build a home (Figure 2.2).

Figure 2.2

MAHAWELI PROJECT AREA



Source: Adapted from Ministry of Mahaweli Development (1983).

In selecting settlers for the old settlement schemes in the Mahaweli project large families were preferred because it was felt that additional labour was needed for cultivating the land and managing the farm. However this preference was changed in the late 1970s for a number of reasons. Since the law prohibits further subdivision of settler plots, problems occur when children of settlers seek additional land on which to settle. If they fail to obtain any land legally they encroach on public land or move to urban centres in

search of employment when they come of age. Therefore in the selection of allotees for Mahaweli settlements, priority is now given to couples aged 25 to 30 who have no more than three children and who possess some experience in agriculture. In general first priority are those who are displaced as a result of construction work in the major reservoirs and related activities of metal quarries, new roads and reservations (Ministry of Mahaweli Development, 1983).

In most of the Mahaweli planning efforts the industrial sector has been neglected. If non-agricultural employment is not included or expected, 'rural towns' cannot develop, and the employment benefits expected to arise from agriculture will be eroded away by increased unemployment in the Mahaweli settlement schemes (Silva, 1979; Laquian, n.d). Nevertheless, most research pertaining to development has identified Sri Lanka as a "development success" with its adoption of anti-poverty programs through regional development such as the Mahaweli program (Senaratne et al, 1978; Isenman, 1980; Richards et al, 1980).

2.1.3 The Greater Colombo Economic Commission (GCEC) and its Investment Promotion Zones

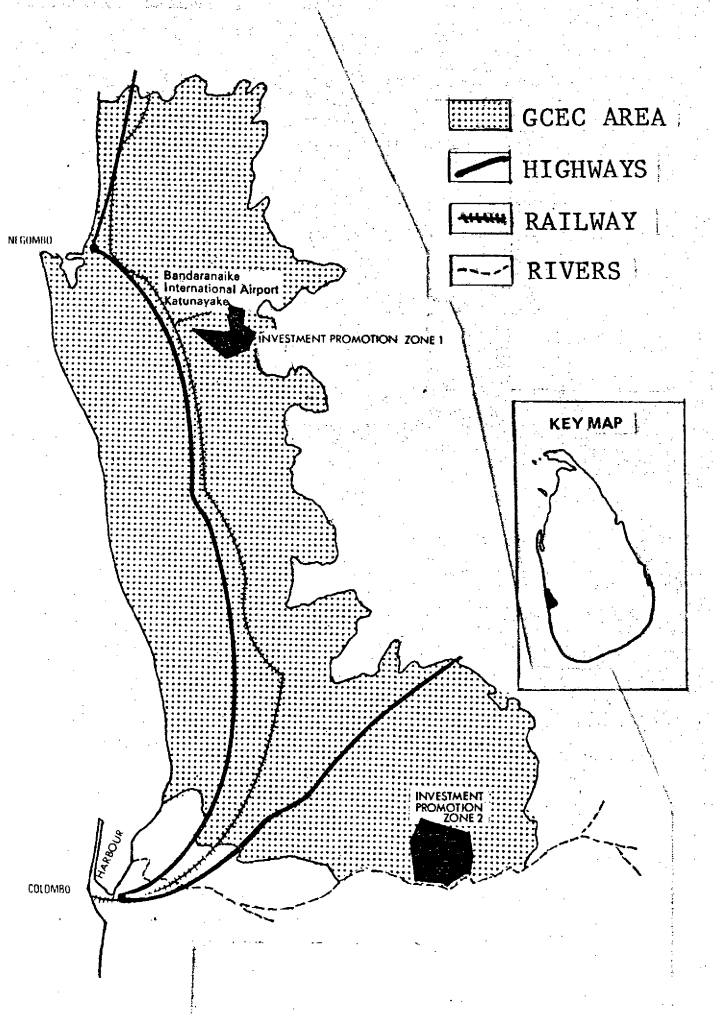
One of the leading projects of the Government of Sri Lanka, the Greater Colombo Ecomomic Commission, was established by parliament in January, 1978 with a view to encouraging foreign investment and thereby increasing export earnings and creating new employment opportunities. The Greater Colombo Economic Commission(GCEC) is the authority for Sri Lanka's Investment Promotion Zones (Free Trade

Zones).

The GCEC proposes to establish a number of Investment Promotion Zones (IPZ) within its area of authority of 518 sq.km. (Figure 2.3). The first IPZ at Katunayake was establish in 1978 and is located only 29 km. from the capital city of Colombo. Work has already begun on the GCEC's Second IPZ at Biyagama (Figure 2.3). which will accommodate mainly heavy, polluting and high water consuming industries (Central Bank of Ceylon, 1981).

Figure 2.3

GREATER COLOMBO ECONOMIC COMMISSION AND ITS INVESTMENT PROMOTION ZONES



Source: Based on GCEC area.

To achieve the objectives stated above the GCEC is offering a unique package of incentives for manufacturers. The most compelling incentive is the 100 per cent tax exemption for the first five years for all manufacturers who set up new plants in the Zones.

During 1982 the GCEC approved 16 projects, bringing the total number of projects approved to 171 by the end of 1982 (Central Bank of Ceylon, 1982:55). During the year 1982, 24 of the 51 firms that were in commercial production were producing ready-made garments. As implied in Table 2.1, earnings from GCEC exports increased by 42 per cent amounting to Rs 1655 million ($ US 1=Rs 20;1982) in 1982.

Table 2.1

INVESTMENT PROMOTION ZONE-EMPLOYMENT AND EXPORT EARNINGS

Industry	1981		1982	
	Employ-ment (End Dec) No.	Gross Earnings FOB Rs.Mn.	Employ-ment (End Dec)	Gross Earnings FOB Rs.Mn.
Garments	16,141	963.1	17,219	1,292.0
Rubber products	920	44.7	2,395	80.4
Electrical appliances	286	19.5	279	25.2
Lapidary and jewellery	309	3.8	587	14.9
Fishing accessories	198	8.8	172	13.4
Tea packeting	23	9.3	13	10.5
Cashew products	265	13.7	391	7.2
others	1,587	100.5	3,870	211.7
Total	19,729	1,163.3	24,926	1,655.3

Source: Central Bank of Ceylon (1982:56).

The creation of employment opportunities, as mentioned earlier was one of the main objectives of the GCEC. As seen in Table 2.1, the total number of employees in the GCEC enterprises reached 24,926 persons by the end of 1982 (Central Bank of Ceylon, 1982). Of the

total employees in 1982, 19,234 were female and 5,692 were male (Ministry of Plan Implementation, 1982b:182). As with the case of enterprises, the distribution of employees was concentrated in the garment manufacturing sector which accounted for around 70 per cent of the employees in 1982. Nearly one half of the employees were concentrated in the semi-skilled category (Table 2.2). This high concentration can be attributed to the domination of female labour in the garments manufacturing sector.

Table 2.2

DISTRIBUTION OF EMPLOYED POPULATION BY OCCUPATIONAL CATEGORIES OF GREATER COLOMBO ECONOMIC COMMISSION, 1982

Employment category	Number	(percentage)
Trainees	4,164	16.7
Unskilled	3,720	14.9
Semi-skilled	11,824	47.4
Skilled	797	3.2
Supervisory staff	713	2.9
Technical staff	220	1.0
Administrative staff	207	1.0
Clerical and Allied Grades	961	3.8
Others	2,320	9.3
Total	24,926	100.0

Source: Ministry of Plan Implementation (1982b:182).

In addition to direct employment opportunities, indirect employment has been created by the GCEC for which estimates are not available. In addition the IPZ's are likely to have attracted numerous unemployed and under employed persons from other parts of the country, though again no good data are available to confirm this.

As the Ministry of Finance and Planning (1983:106) stated "the progress made by the GCEC should be evaluated taking into consideration its intense competition from other established Free Trade Zones in the region and most importantly, the country's past reputation for nationalization, government controls and regulations". However the IPZ at Colombo-Katunayake has been described as the fastest growing zone in Asia.

2.2 Internal Migration in Sri Lanka

Migration involves a relatively permanent change of residence between communities or across certain statistical boundaries, although there is no universally applicable definition of internal migration (Zachariah, 1966). Zelinsky (1971) defined migration as any permanent or semi-permanent change of residence. More meaningfully perhaps, it is a spatial transfer from one social unit or neighbourhood to another. Certainly internal migration has long had an impact on population distribution within Sri Lanka.

Data on migration can be derived from two different sets of questions in the 1971 and 1981 Sri Lanka censuses (Appendix A.4). The first set refers to the place of birth and current residence and therefore reveals lifetime migration, the most commonly used measure in the migration literature on Sri Lanka. However a major disadvantage of the lifetime migration measure is that it provides very little indication of when the migration occurred. Furthermore, people who moved to another district and later returned to their place

of birth are considered as non-migrants. Therefore lifetime migration is only used in order to trace the overall migration pattern of the country as observed in 1981.

To identify the recent migration pattern a second data set, the place of previous residence, together with duration of residence, has been used. Taking into account established time periods of the major development programs of the country recent migration has been calculated for an interval of 5 years. Therefore in addition to the definition of lifetime migration another definition of migrant is also used in this study: a person whose duration in his/her usual residence is less than five years and whose previous place of residence was in another district. The estimate of migration based on this procedure is not the same as that which would be obtained from a question on place of residence five years ago because people who have moved more than once within the five year period are classified differently (Speare, 1975). The following two sections of this chapter discuss the migration patterns observed in Sri Lanka in 1981 using these two different definitions.

2.2.1 Lifetime Migration in 1981

At the 1981 census about 14 per cent of the Sri Lanka born population were residing in a district other than their district of birth. The corresponding estimate of lifetime migrants in 1971 was only 12 percent (United Nations, 1980b).

Lifetime migration patterns in Sri Lanka derived from place of birth and place of residence are presented in Table 2.3. It can be seen from the Table that the greatest number of migrants, 32,835 or 17 per cent of all lifetime migrants, have moved into Colombo District. Gampaha District ranked second position, having received 20,015 lifetime migrants. In third and fourth position were Anuradhapura and Polonnaruwa Districts, receiving 14,134 and 11,934 lifetime migrants respectively. Interestingly, in the case of lifetime out-migrants, Colombo District recorded the second highest volume, losing 24,785 persons. Kandy District which lost 24,929 persons, recorded the highest lifetime out-migration volume.

The effect of internal migration can be seen more clearly in net-migration, which is the difference between in-migration and out-migration (Bogue,1959). Figure 2.4 displays the results of the analysis of patterns of lifetime net-migration. The big net gainers from the flow of lifetime net-migration have been Gampaha, Anuradhapura, Polonnaruwa and Colombo Districts. As depicted in Table 2.3, the district of Gampaha had the highest net gain of 11,375 persons, which is slightly greater than the net gain of Anuradhapura District (11,066). Polonnaruwa(10,979) and Colombo (8,050) Districts were in third and forth position respectively. Almost all the districts in the dry zone show a substantial net gain of lifetime migrants (Figure 2.4). Of the net out-migration districts, Kandy had the highest loss.

Table 2.3

LIFETIME MIGRANTS TO AND FROM DISTRICTS OF SRI LANKA, 1981

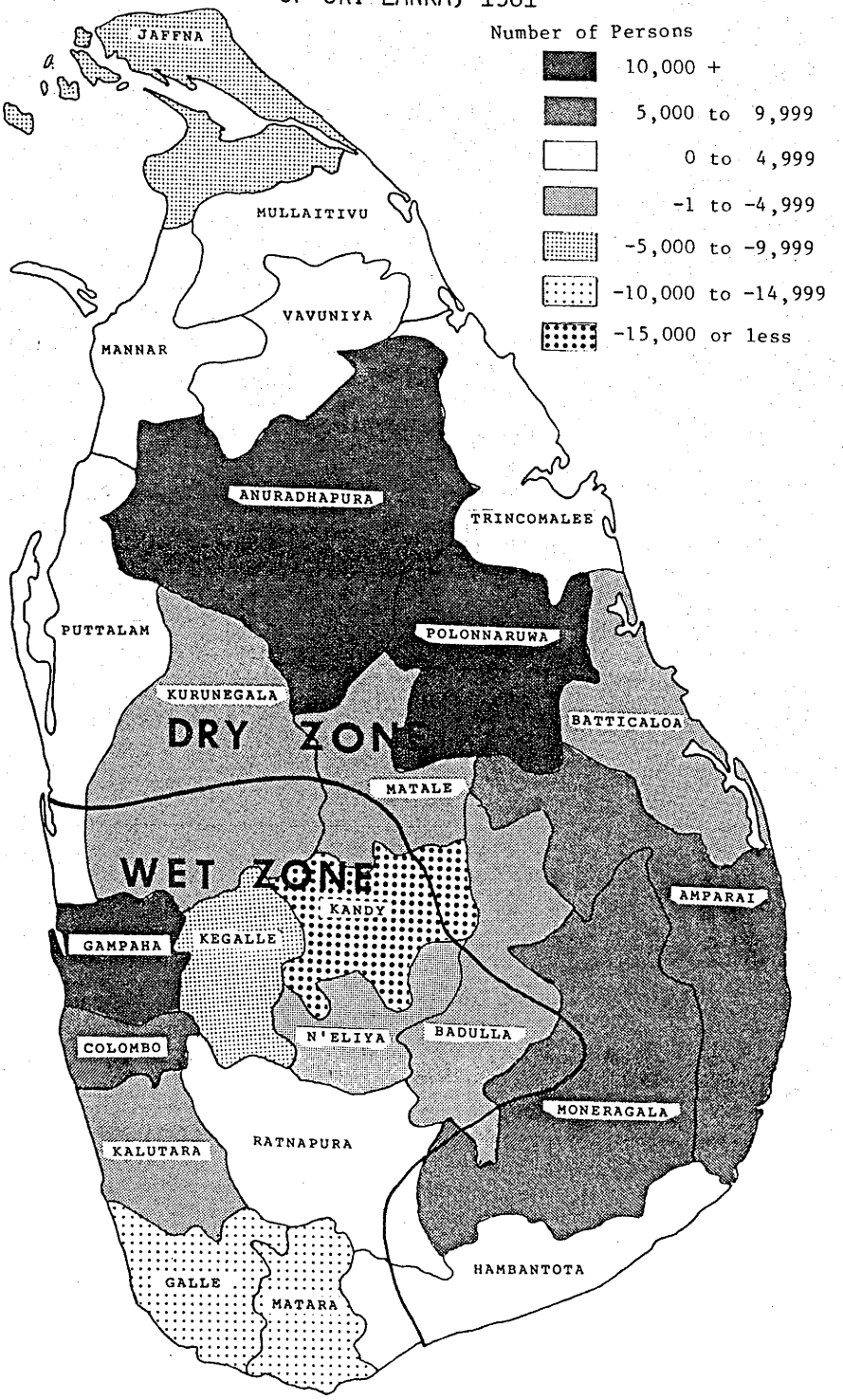
District	In-Migrants	out-Migrants	net-Migrants	Resident Population (1981)	Total Born in the District	In-Migration Rate (Per 100)	Out-Migration Rate (Per 100)	Net-Migration Rate (Per 100)
	1	2	3 = 1-2	4	5	6 = 1/4	7 = 2/5	8 = 3/4
Colombo	32835	24785	8050	164404	156354	20.0	15.8	4.9
Gampaha	20015	8640	11375	131553	120178	15.2	7.2	8.6
Kalutara	8409	11605	-3196	81786	84982	10.3	13.6	-3.9
Kandy	8279	24929	-16650	105856	122506	7.8	20.3	-15.7
Matale	5543	6966	-1423	34044	35467	16.3	19.6	-4.2
N'Eliya	6221	9343	-3122	45966	49088	13.5	19.0	-6.8
Galle	4439	16025	-11586	77038	88624	5.8	18.1	-15.0
Matara	3788	16928	-13140	62109	75249	6.1	22.5	-21.2
Hambantota	5164	5107	57	41443	41386	12.5	12.3	0.1
Jaffna	2788	8220	-5432	81204	86636	3.4	9.5	-6.7
Mannar	2323	498	1825	10444	8619	22.2	5.8	17.5
Vavuniya	3571	680	2891	9093	6202	39.3	11.0	31.8
Mullaitivu	3484	327	3157	8134	4977	42.8	6.6	38.8
Batticaloa	1650	1829	-179	32754	32933	5.0	5.5	-0.5
Amparai	6166	1139	5027	38094	33067	16.2	3.4	13.2
Trincomalee	5312	1240	4072	23768	19696	22.3	6.3	17.1
Kurunegala	11036	13154	-2118	116167	118285	9.5	11.1	-1.8
Puttalam	7517	4004	3513	46239	42726	16.3	9.4	7.6
Anuradhapura	14134	3068	11066	53759	42693	26.3	7.2	20.6
Polonnaruwa	11934	955	10979	24552	13573	48.6	7.0	44.7
Badulla	4296	8579	-4283	58076	62359	7.4	13.8	-7.4
Moneragala	8209	1087	7122	27598	20476	29.7	5.3	25.8
Ratnapura	8974	7350	1624	78028	76404	11.5	9.6	2.1
Kegalle	4673	14302	-9629	66862	76491	7.0	18.7	-14.4
Total	190760	190760	0	1418971	1418971			

Note: Usual residence not stated and Foreign born excluded.
Colombo Region constitute with Colombo and Gampaha Districts.
North Central Province (NCP) constitute with Anuradapura and Polonnaruwa Districts.

Source: Derived from 10 percent sample tapes of 1981 population census of Sri Lanka.

FIGURE 2.4

VOLUME OF LIFETIME NET-MIGRANTS BY DISTRICT OF SRI LANKA, 1981



Source: Based on Table 2.3.

Since the lifetime in- and out-migration volumes are not adequate to demonstrate the relative impact of migration patterns, these volumes are compared with the appropriate populations. Columns 6,7 and 8 of Table 2.3 indicate the impact of lifetime in- and out-migrants by comparing the number of in-migrants to a district with the total resident population of that district in 1981, and the number of out-migrants from a district with the total number born in that district living in Sri Lanka. The greatest relative effect, that is 48.6 per cent of the lifetime in-migration rate, is evident in the Polonnaruwa indicating that there was about one lifetime in-migrant for every resident born in the district. Colombo and Gampaha did not have a high lifetime in-migration rate compared with other districts due to their larger base population.

The areas where lifetime out-migration rates had the greatest impact are Matara and Kandy Districts in the wet zone. These districts seem to neither hold their populations nor attract persons from other districts. Colombo District also shows a relatively high lifetime out-migration rate (Table 2.3).

Among the lifetime net-migration rates, the figure for Polonnaruwa District was by far the largest (44.7 percent). The highest negative lifetime net-migration, 21.2 per cent, was marked by Matara District (Table 2.3). Both Colombo and Gampaha Districts had somewhat low lifetime net-migration rates, 4.9 and 8.6 per cent respectively.

2.2.2 An Overview of Migration Patterns, 1976-81

The observed inter district migration for the period of 1976-81 was 66,197 or about 5.0 percent of the resident population of Sri Lanka. The overall in-, out- and net-migration for each district is shown in the first three columns of Table 2.4. Colombo District received the highest volume of in-migrations, that is 11,137, or 16.8 per cent of all in-migrants observed in the period 1976-81. Colombo had the highest rank for out-migration also, with 9,883 persons or 14.9 per cent of all out-migrants. Although Gampaha and Anuradhapura District placed second and third as in-migrant districts, their out-migration volumes appear to be considerably lower compared with other districts indicating the importance of these two areas as extremely popular migration destinations.

The highest number of net-migrants (5,244) was received by Gampaha District (Table 2.4). Anuradhapura and Polonnaruwa District (NCP) ranked second and third in terms of net gain. The largest net out-migration areas were Kandy and Matara, which lost 4,855 and 3,101 persons respectively. Net-migration patterns as shown in Figure 2.5 indicate two dominant destinations for net migrants: in the wet zone Colombo Region (Colombo and Gampaha Districts) and in the dry zone NCP (Anuradhapura and Polonnaruwa Districts). This finding would seem to confirm the hypothesis that in Sri Lanka the pattern of net-migration is towards the leading development programs irrespective of whether they are located in the wet zone or dry zone.

Table 2.4

RECENT MIGRANTS TO AND FROM DISTRICTS OF SRI LANKA, 1976-81

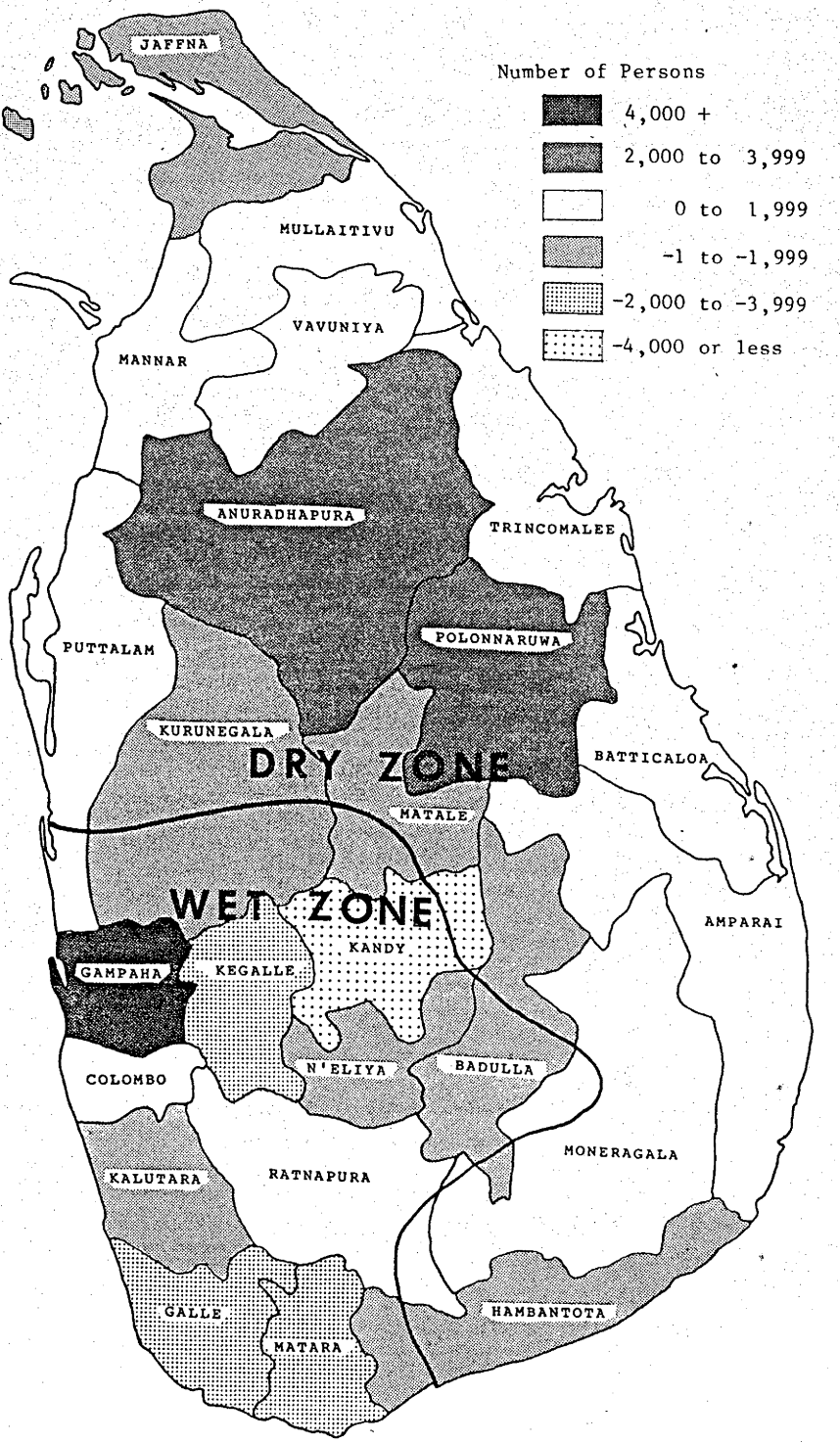
District	In-Migrants	out-Migrants	net-Migrants	Average Resident Population (1976-81)	In-Migration Rate (Per 100)	Out-Migration Rate (Per 100)	Net-Migration Rate (Per 100)
	1	2	3 = 1-2	4	5 = 1/4	6 = 2/4	7 = 3/4
Colombo	11137	9883	1254	152776	7.3	6.5	0.8
Gampaha	8156	2912	5244	121106	6.7	2.4	4.3
Kalutara	3365	3703	-338	76687	4.4	4.8	-0.4
Kandy	2940	7795	-4855	102117	2.9	7.6	-4.7
Matale	1466	2477	-1011	31215	4.7	7.9	-3.2
N'Eliya	2203	3093	-890	44360	5.0	7.0	-2.0
Galle	1611	4610	-2999	72469	2.2	6.4	-4.2
Matara	1387	4488	-3101	58975	2.3	7.6	-5.3
Hambantota	1554	1792	-238	38548	4.0	4.6	-0.6
Jaffna	1520	2630	-1110	76482	2.0	3.4	-1.4
Mannar	1268	302	996	9040	14.0	3.3	10.7
Vavuniya	1490	431	1059	7833	19.0	5.5	13.5
Mullaitivu	1515	201	1314	6393	23.7	3.1	20.6
Batticaloa	887	861	26	30272	2.9	2.8	0.1
Amparai	1398	737	661	34231	4.1	2.1	2.0
Trincomalee	1414	782	632	21432	6.6	3.6	2.9
Kurunegala	3765	4777	-1012	108642	3.5	4.4	-0.9
Puttalam	2420	1855	565	41737	5.8	4.4	1.3
Anuradhapura	5182	2018	3164	45753	11.3	4.4	6.9
Polonnaruwa	3373	810	2563	20602	16.4	3.9	12.4
Badulla	1659	2568	-909	55628	3.0	4.6	-1.6
Moneragala	2425	573	1852	24223	10.0	2.4	7.6
Ratnapura	2651	2567	84	71974	3.7	3.6	0.1
Kegalle	1411	4332	-2921	63934	2.2	6.8	-4.6
Total	66197	66197	0	1318090			

Note: Duration of usual residence not stated and illogical cases has been excluded from the analysis.
Colombo Region constitute with Colombo and Gampaha Districts.
North Central Province (NCP) constitute with Anuradapura and Polonnaruwa Districts.

Source: Derived from 10 percent sample tapes of 1981 population census of Sri Lanka.

Figure 2.5

VOLUME OF RECENT NET-MIGRANTS BY DISTRICT OF SRI LANKA, 1976-81



Source: Based on Table 2.4.

The largest rates of in-migration were found in the districts of Mullaitivu (24 percent) and Vavuniya (19 percent) which have relatively small populations. Polonnaruwa District, which recorded the highest lifetime in-migration rate, was in third position. The highest relative impact of out-migration on the resident population was in the Matale district (7.9 percent) followed by Kandy, Matara and Colombo (column 6 of Table 2.4).

The net-migration rate appears to be higher in the Mullaitivu District followed by Vavuniya, Polonnaruwa and Mannar. In this analysis Colombo District, which contains the capital and primate city of the country, did not gain much population through migration compared with most capitals in developing countries, having a net gain through migration of only about one person per hundred residents in the period 1976-81.

2.2.3 The Effect of Migration on North Central Province and Colombo Region

The two areas which recorded the highest net gain of migrants were NCP and Colombo Region where the country's largest development projects (the Mahaweli and GCEC) are operating as migration destinations. The relative impact of lifetime migration is greater in NCP which has more lifetime net-migrants than Colombo Region. Lifetime in- and net-migration rates were considerably higher in the NCP compared with Colombo Region. However the lifetime out-migration rate of Colombo Region and NCP demonstrate a more or less equal level, though the latter has a slightly higher capacity for retaining its own

people (Column 7 of Table 2.5).

Table 2.5

VOLUME AND RATES OF LIFETIME (1981) AND RECENT MIGRANTS (1976-81) OF NORTH CENTRAL PROVINCE AND COLOMBO REGION

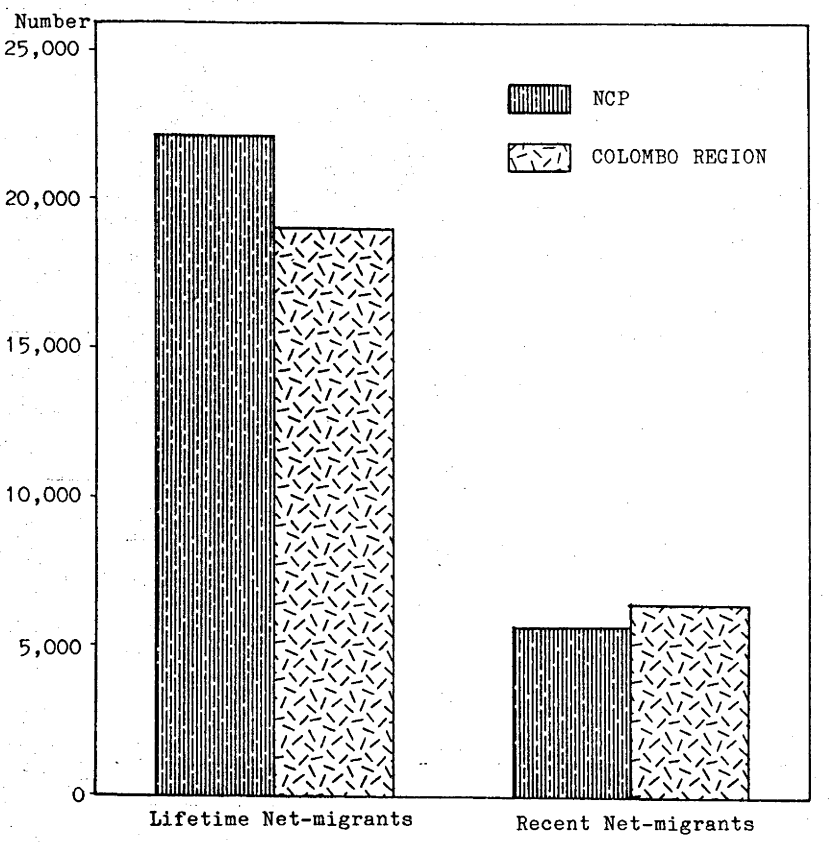
Area	In-migrants		Out-migrants		Net-migrants		Migration Effectiveness ratio
	No.	Rate per 100	No.	Rate per 100	No.	Rate per 100	
	1	2	3	4	5	6	7
L.T.Migrants							
NCP	25672	32.8	3627	6.4	22045	28.1	75.2
C.Region	43404	14.7	23979	8.7	19425	6.6	28.8
Recent Migrants							
NCP	8358	12.6	2631	4.0	5727	8.6	52.1
C.Region	15425	5.6	8927	3.3	6498	2.4	26.7

Note: Changing place of usual residence within NCP and Colombo Region was not considerd as migration movement under any definition.
Source: Derived from ten percent sample tapes of 1981 census.

The volume of migrants to and from these two areas observed in the last five year period (1976-81) shows a slight deviation compared with the lifetime migration approach. The net-migration volume was higher in Colombo Region, indicating the new-found attractiveness of this region (figure 2.6). Another important point is that the out-migration rates from NCP (4.0 percent) surpass the corresponding estimate for Colombo Region (3.3 percent) for the period of 1976-81. Nevertheless NCP is still showing a relatively high net in-migration rate in 1976-81 compared with Colombo Region.

Figure 2.6

VOLUME OF LIFETIME (1981) AND RECENT (1976-81) NET-MIGRANTS OF NCP AND COLOMBO REGION



Source: Based on Table 2.5.

The following discussion is concerned with the effectiveness of migration into and out of these two areas. As Shryock and Siegel (1971:656) observed, the ratio of net-migration to turnover should be considered a measure of the "effectiveness" of internal migration. Therefore in order to measure the effectiveness of the populating of these two areas, an index of effectiveness was computed. Theoretically, this index may range from -100 to 100. The higher the ratio is for an area, the fewer the number of moves that are required to effect a given amount of population redistribution.

As indicated in Table 2.5 the migration effectiveness ratio of NCP in the case of lifetime migrants was more than twice as high as for Colombo. NCP also received a higher ratio of recent migrants than Colombo Region, though it appears to be not much higher than the ratio estimated for lifetime migrants (Table 2.5). This indicates the increased trend towards out-migration from the NCP in the recent past (1976-81).

2.3 Summary

The direct population redistribution programs such as colonization and land settlement schemes initiated in the 1930's were the principal means of preserving the peasantry, relieving the population pressure of land in the wet zone and increasing agricultural output. The improvement of infrastructure facilities and eradication of malaria in the dry zone has facilitated the direct movement of people to this zone. Land settlement programs outside the Mahaweli Region are scattered through the dry zone and the majority of them do not have the potential for attracting large volumes of people. Mahaweli, the leading and largest development program in Sri Lanka's history, certainly has the critical size to redistribute population over sparsely populated dry zone areas. Almost all settlement schemes under the Mahaweli are located in NCP and therefore received a considerable number of sponsored and spontaneous migrants. The IPZ's in Colombo Region have also attracted a significant number of people for employment, at ever increasing rates. Compared with the Mahaweli settlers, job creation in the IPZ's has a stronger female bias.

Estimates derived using two different migration definitions reveal two dominant areas of resettlement, one in the wet zone Colombo Region and another, NCP, in the dry zone. Gampaha District in Colombo Region received the highest volume of net-migrants (under both definitions) indicating the expansion of the industrial and service sectors, developed in the IPZ's of the GCEC. Net-migration rates were higher in almost all districts in the dry zone compared with the wet zone, and therefore demonstrate the relative attractiveness of the former as the most popular migrant destination.

A comparison of lifetime net-migration volume of NCP and Colombo Region indicates that the former has tended to be a more popular destination. However estimates of recent net-migration (1976-81) show the reverse pattern. Though Colombo Region has attracted a higher volume of net-migrants, still migration is relatively more effective in NCP.

Chapter 3

TRENDS AND PATTERNS OF THE MIGRATION STREAMS OF NORTH CENTRAL PROVINCE (NCP) AND COLOMBO REGION

As noted in Chapter Two, North Central Province (NCP) and Colombo Region have attracted most migrants compared with the rest of Sri Lanka. This chapter will examine the in- and out- migration trends, and migration streams of these two areas in detail.

3.1 Migration Trends

Leading government development programs such as the Mahaweli and the Investment Promotion Zones which were functioning in the late 1970's should have stimulated migration trends to NCP and Colombo Region. In fact, migration trends before and during the periods of development provide an opportunity to evaluate the impact of the development. Consequently as well as the migration trends observed in the period 1976-81 the migration trends for the period 1966-71 are also examined (the 10 percent sample tapes of the 1971 population census of Sri Lanka are used for this purpose).

The number of in-migrants received by NCP in 1976-81 was almost double the figure for 1966-71, while in the same period in-migrants to Colombo Region increased by only 21 percent (Table 3.1). This greater attraction to NCP possibly can be attributed to the Mahaweli Program, which initiated its sponsored settlement schemes in 1976.

Table 3.1

MIGRATION TO AND FROM NORTH CENTRAL PROVINCE AND COLOMBO REGION, 1966-71 AND 1976-81

Area	Number of Migrants			Migration Effectiveness Ratio
	In-Migrants	Out-Migrants	Net-Migrants	
1966-71				
NCP	4295	1641	2654	44.7
Colombo Region	12789	8183	4606	22.0
1976-81				
NCP	8358(95)	2631(60)	5727(116)	52.1
Colombo Region	15425(21)	8927(9)	6498(41)	26.7

Note: Figures in parentheses indicate the percentage increase of migrants from 1966-71 to 1976-81

Source: Derived from 10 percent sample tapes of 1971 and 1981 censuses.

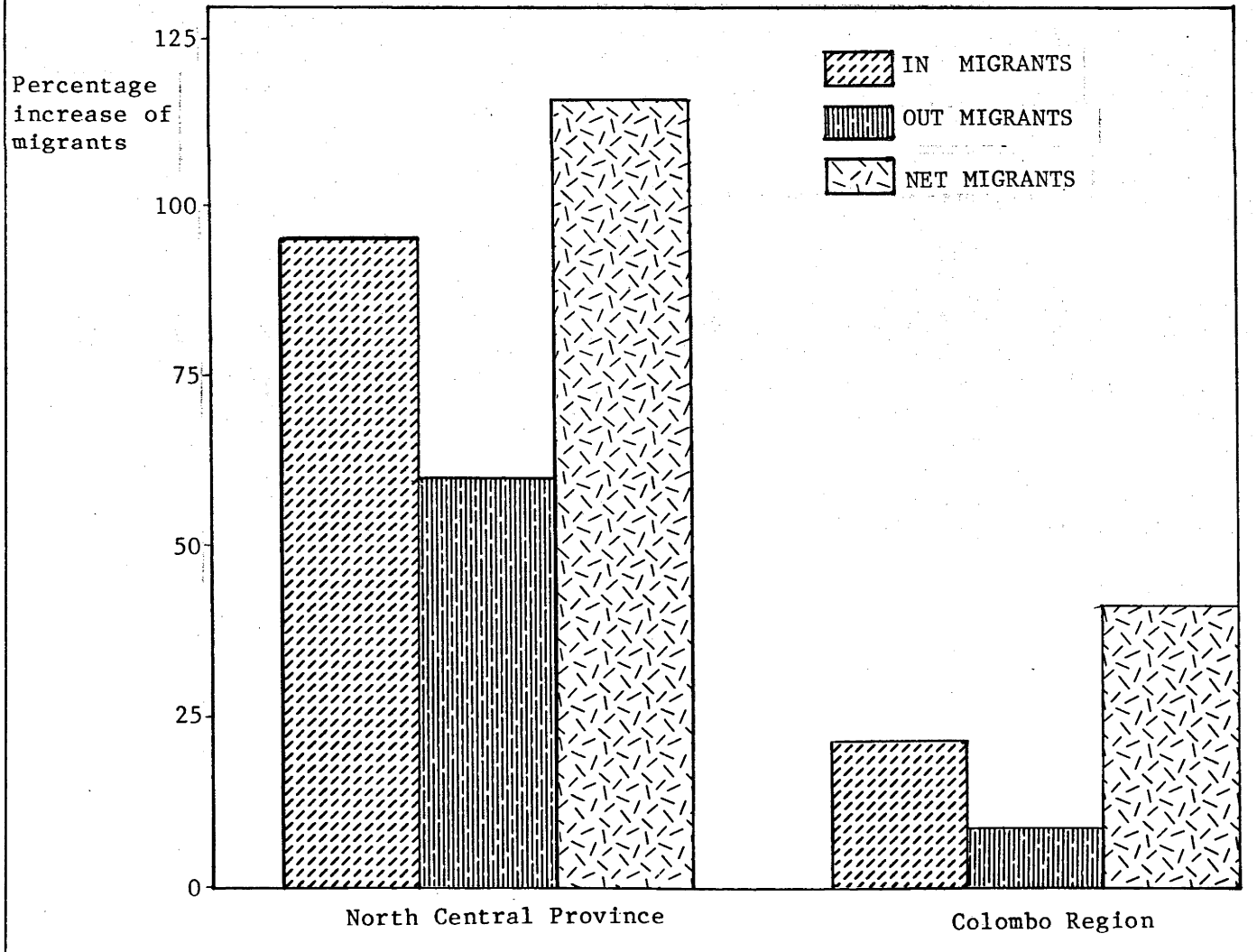
In the period of 1966-71 to 1976-81 out-migration from NCP also increased more than that from Colombo Region (60 percent opposed to 9 percent). One explanation for the increased out-migration trend from NCP could be the counter stream effect (Lee,1966). This higher percentage increment of out-migrants can also be attributed to the slow pace of urbanization and lack of industrialization in NCP, which the Mahaweli planners did not emphasize (Silva,1979).

The percentage increase of net-migrants in the period of 1966-71 to 1976-81 favoured NCP with 116 percent compared with only a 41 percent gain recorded by Colombo Region (Figure 3.1). The estimated volume of net-migrants was higher in Colombo Region in both periods, however, due to its much larger base population.

To illustrate the relative impact of development programs on migration for these two areas for the periods 1966-71 and 1976-81, the migration effectivness ratio was calculated, and the results are shown in Table 3.1. In both time periods NCP had a migration effectiveness ratio approximately twice that of Colombo Region, again indicating the attractiveness of this province. Therefore it may not be unreasonable to conclude that the NCP is a relatively more important area for population redistribution compared with Colombo Region, the capital and primate city of the country.

Figure 3.1

PERCENTAGE INCREASE OF MIGRANTS OF NCP AND COLOMBO REGION, 1966-71 OVER 1976-81



Source: Based on Table 3.1.

3.2 Streams of Migration

The calculation of streams of migration to and from NCP and Colombo Region serves two purposes. First, it indicates the major origin areas of migrants in NCP and Colombo Region and the distances involved. Second, it also identifies areas which attract people from NCP and Colombo Region.

The calculated migration streams to and from NCP for the five year periods preceding the 1971 and 1981 censuses are shown in Table 3.2. To simplify presentation, the districts have been grouped into provinces. The 1971 census data show that in the period 1966-71 the largest proportion of in-migrants in NCP, 32 percent, originated in Central Province. Interestingly, 19 percent originated in Colombo Region. Of the out-migrants from NCP in the period 1966-71 the highest proportions, 26 and 24 percent, went to Colombo Region and Central Province respectively.

Table 3.2

MIGRATION STREAMS TO AND FROM NORTH CENTRAL PROVINCE OF SRI LANKA, 1966-71 AND 1976-81

Area of Origin/destination	North Central Province Number of Migrants					
	1966-71			1976-81		
	In	Out	Net	In	Out	Net
Colombo Region	816	429	387	1228	436	792
Western Province	130	85	45	272	103	169
Central Province	1361	402	959	3173	431	2742
Southern Province	424	3	421	487	113	374
Northern Province	143	111	32	268	427	-159
Eastern Province	169	112	57	350	182	168
North Western Province	634	319	315	1480	711	769
Uva Province	82	67	15	123	92	31
Sabaragamuwa Province	536	113	423	977	136	841
Total	4295	1641	2654	8358	2631	5727

Source: Derived from 10 percent sample tapes of 1971 and 1981 censuses.

In the period 1976-81 the greater proportion of in-migrants to NCP, 38 percent, also came from Central Province (Table 3.2). Second highest was North Western Province which contributed 18 percent of the in-migrants to NCP, followed by Colombo Region (15 percent). Central Province was considered as the major supplier of manpower to the dry zone of Sri Lanka for a considerable period of time. The peasants of Central Province were subject to extreme hardship because of land expropriations which were initiated in 1840 when the government began to establish tea plantations in this province. This led to continuing rural land shortages, and therefore the people of this area were attracted by the colonization and land settlement schemes in the dry zone (Sri Lanka, 1951). Of out-migrants who originated from NCP the largest proportion went to North Western Province (19 percent) followed by Colombo Region (17 percent).

An examination of the streams of in-migration to Colombo Region (Table 3.3) in the periods 1966-71 and 1976-81 shows that in both periods about one quarter of the migrants originated from Southern Province. The next major source of migrants to Colombo was Central Province. Colombo Region received relatively large volumes of migrants from all provinces of Sri Lanka compared with NCP. Previous studies of migration patterns to Colombo indicate that Southern Province (Galle and Matara Districts) is the major source of Colombo's in-migrants (Wilson, n.d; Siddhisena, 1979). Undoubtedly the majority of people who migrated from Southern Province to Colombo basically came for business activities or to work in the public service (Silva and Gunawardena, 1971). Nevertheless, out-migration from Colombo Region was higher in volume than from NCP. The highest proportion of out-migrants from Colombo Region went to North Western

Province in the period of 1966-71 and 1976-81, 21 percent and 23 percent respectively.

Table 3.3

MIGRATION STREAMS TO AND FROM COLOMBO REGION OF SRI LANKA, 1966-71 AND 1976-81

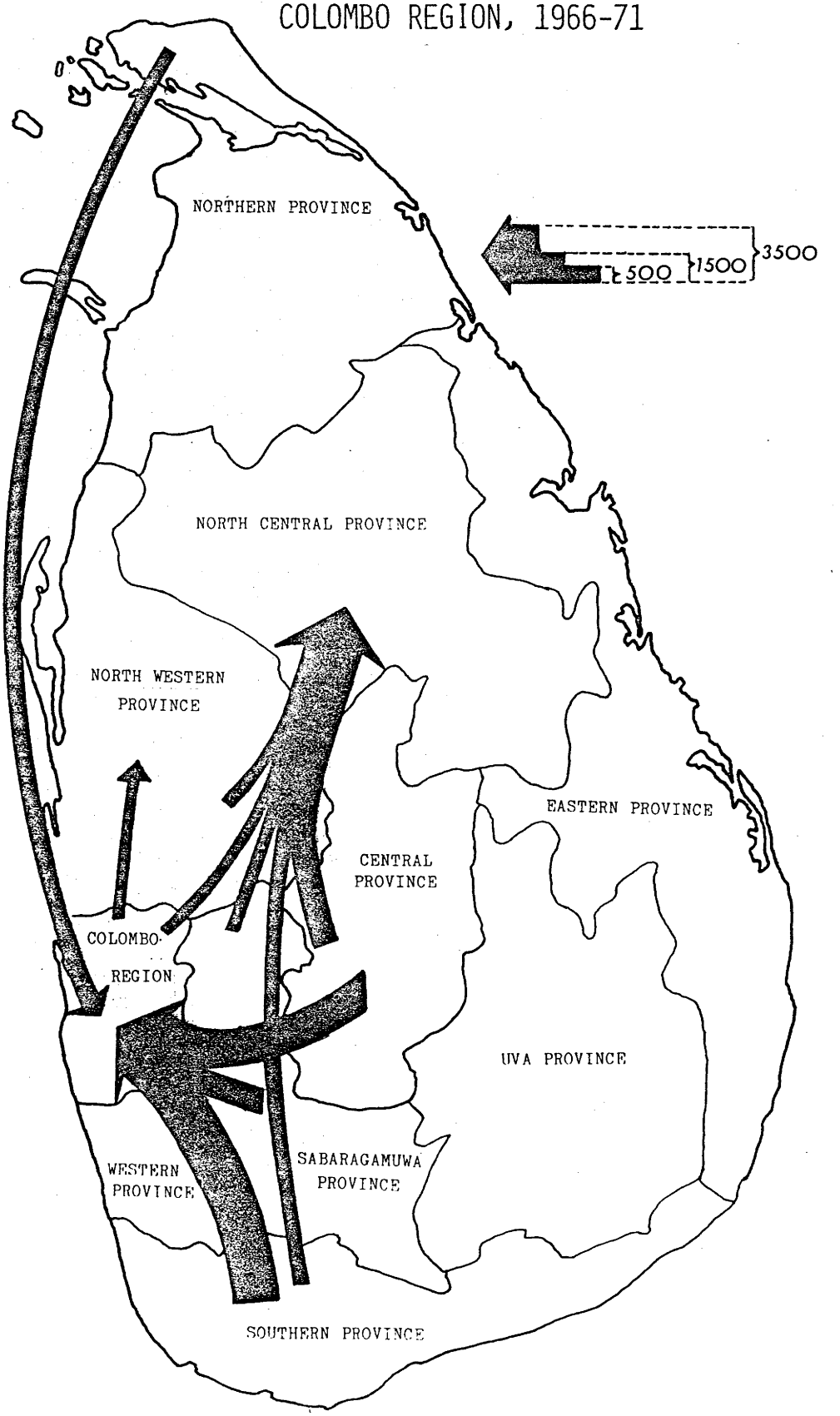
Area of Origin/destination	Colombo Region Number of Migrants					
	1966-71			1976-81		
	In-	Out-	Net-	In-	Out-	Net-
Western Province	1485	1331	154	1800	1469	331
Central Province	2274	1131	1143	3077	983	2094
Southern Province	3218	835	2283	3995	768	3227
Northern Province	851	362	489	808	755	53
Eastern Province	260	388	-128	517	410	107
North Western Province	1576	1925	-349	1870	1916	-46
North Central Province	429	816	-387	436	1228	-792
Uva Province	533	386	147	709	429	147
Sabaragamuwa Province	2263	1009	1154	2213	969	1244
Total	12789	8183	4606	15425	8927	6498

Source: Derived from 10 percent sample tapes of 1971 and 1981 censuses.

To clarify the direct effect of streams of migration to and from NCP and Colombo Region with other provinces of Sri Lanka, the volume of net-migration is given in Table 3.2 and 3.3, and illustrated in Figures 3.2 and 3.3. In the periods 1966-71 and 1976-81, the highest net gain of NCP was from Central Province followed by Sabaragamuwa Province. The population transfers between NCP and other provinces of Sri Lanka in both periods favoured NCP except in one instance. In 1976-81, Northern Province had a net gain of 159 persons from NCP.

Figure 3.2

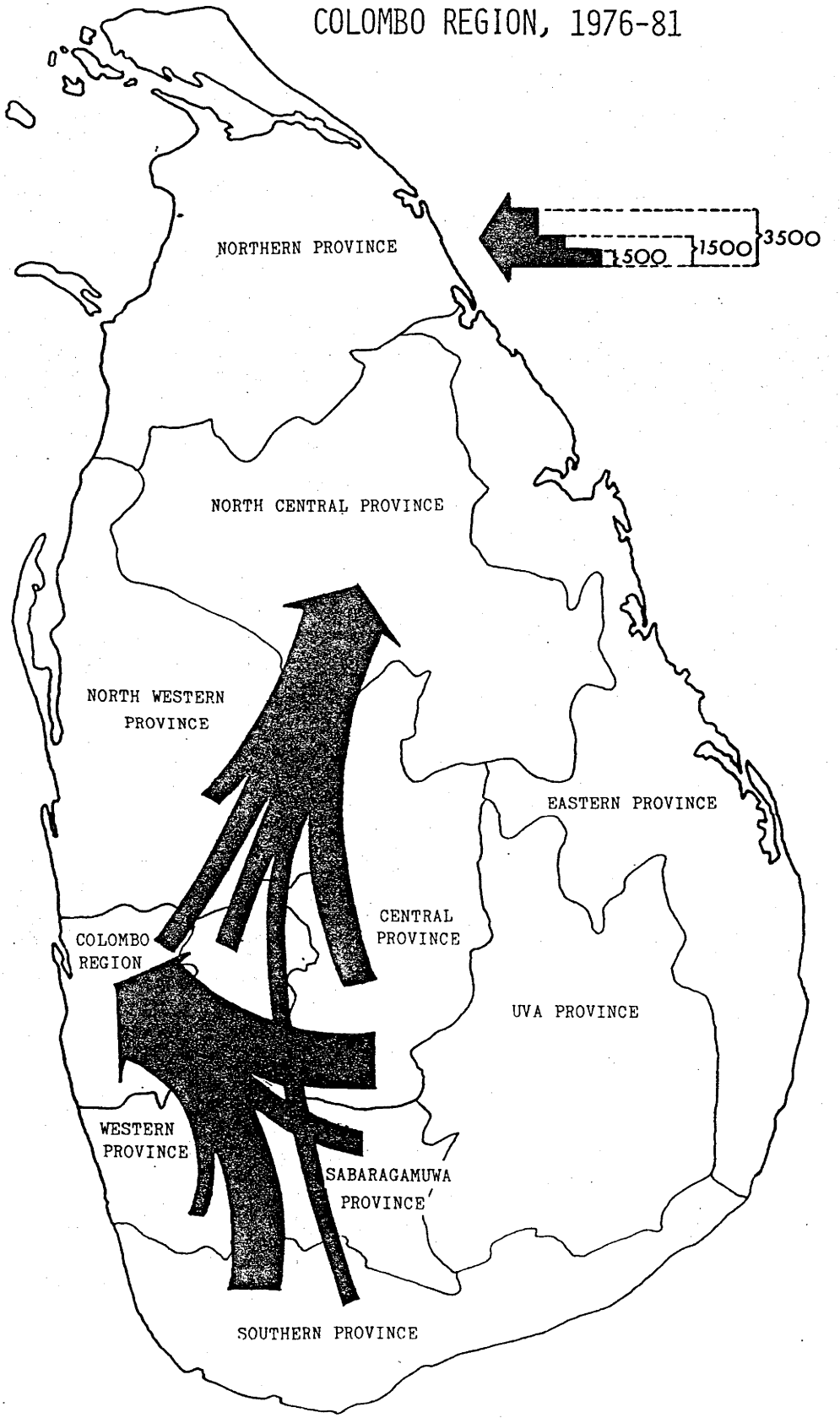
VOLUME OF NET-MIGRATION STREAMS OF NCP AND COLOMBO REGION, 1966-71



Note: Migration streams more than 300 only

Figure 3.3

VOLUME OF NET-MIGRATION STREAMS OF NCP AND COLOMBO REGION, 1976-81



Note: Migration streams more than 300 only
Source: Based on Tables 3.2 and 3.3.

The main areas from which Colombo Region had a net gain of migrants are Southern, Central and Sabaragamuwa Provinces. NCP and North Western Province both had net gains in transfers with Colombo Region in both periods (and also a slight gain for Eastern Province in 1966-71), but in the latter period NCP clearly was dominant, gaining nearly 800 persons from Colombo Region as opposed to less than 50 for North Western Province.

In the population transfer between the two dominant destinations, Colombo Region and NCP, during 1966-71 429 persons out-migrated from NCP to Colombo. Conversely, 816 persons out-migrated from Colombo to settle in NCP. Therefore in this period the population transfer between these two areas resulted in a net gain of 387 persons to NCP (Table 3.4).

Table 3.4

POPULATION TRANSFER BETWEEN NORTH CENTRAL PROVINCE AND COLOMBO REGION OF SRI LANKA, 1966-71 AND 1976-81

Area	Number of Migrants					
	North Central Province			Colombo Region		
	In-	out-	net-	In-	out-	net-
1966-71						
NCP	-	-	-	429	816	-387
Colombo Region	816	429	387	-	-	-
1976-81						
NCP	-	-	-	436	1228	-792
Colombo Region	1228	436	792	-	-	-

Source: Derived from 10 percent sample tapes of 1971 and 1981 censuses.

In the most recent period 1976-81, the population transfer which took place between NCP and Colombo Region resulted in a net gain of 792 persons by NCP. This is more than twice as high as in 1966-71. Interestingly in-migrants to NCP from the Colombo Region also increased by more than 50 percent. NCP sent more or less the same number of out-migrants to Colombo Region in both periods. This illustration implies that though Colombo is the most urbanized and developed region of the country it was not a very popular destination for migrants compared with NCP.

3.3 Urban vs Rural Destination

There is no information as to whether migrants to NCP and Colombo Region came from urban or rural areas. Consequently, the analysis of migration patterns to these two areas is limited only to the urban and rural areas of destination.

In the 1981 population census urban areas were defined to include all municipalities, urban councils and town councils. Thus all village councils are defined as "rural". A United Nations (1980b:13) report commented that the designation of any area as an urban locality in Sri Lanka is "basically a politico-administrative definition and does not take the size of the population or any other characteristics into consideration". Most writers consider that there are no definite guidelines for the Ministry of Local Government to follow in making changes in rural-urban classification. However as Jones and Selvaratnam (1970:200) stated, "According to the Department of Town and Country Planning, ministerial discretion in the creation of new town councils, in the absence of such criteria, seems to be based on

the nature of the development [of any administrative locality] or its amenities and urban character". Given these urban-rural criteria, in this section an attempt will be made to demonstrate migration patterns to urban and rural areas of NCP and Colombo Region.

The rural-urban destinations and sex ratio of in-migration streams in NCP and Colombo Region are shown in Table 3.5. The vast majority of in-migrants to NCP moved to rural localities as oppossed to urban areas, 83 percent vs 17 percent. These figures are comparable to the rural-urban distribution of non-migrants in NCP (94 percent vs 6 percent).

Table 3.5

PERCENTAGE DISTRIBUTION OF IN-MIGRANTS AND NON-MIGRANTS OF NCP AND COLOMBO REGION BY URBAN AND RURAL RESIDENCE, 1976-81

Sector	North Central Province				Colombo Region			
	In-migrants		non-migrants		In-migrants		Nonmigrants	
	%	Sex Ratio	%	Sex Ratio	%	Sex Ratio	%	Sex Ratio
Urban	16.6	192	6.4	111	68.6	157	52.1	107
Rural	83.4	179	93.6	109	31.4	104	47.9	101
Total	100.0	181	100.0	109	100.0	138	100.0	104
Number	8358		64562		15425		253842	

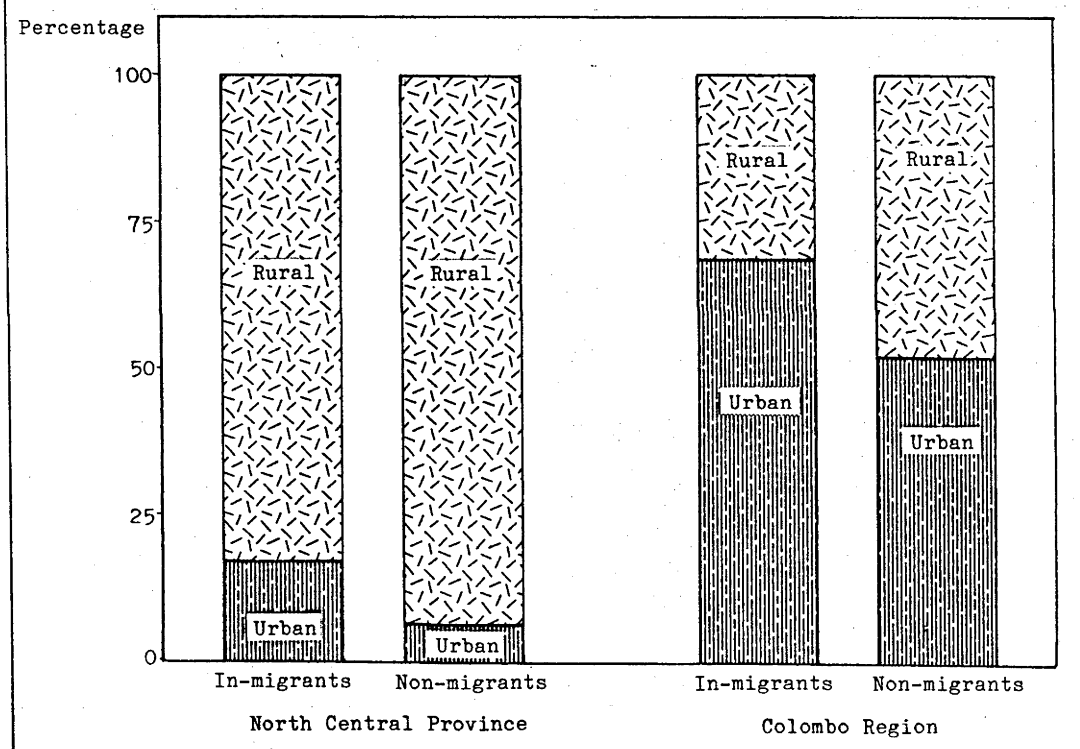
Note: Estate sector has been included in rural sector.
Source: Derived from 10 percent sample tapes of 1981 census.

A similar comparison of the rural-urban distribution of in- and non-migrants of Colombo Region indicates a somewhat greater proportion of in-migrants (69 percent) moved to urban localities as opposed to rural areas (Figure 3.4). In general, the distribution of in-migrants in rural-urban localities of NCP and Colombo Region demonstrates different direction of concentration. Capital investment and development are concentrated in the urban areas of Colombo Region.

The migration pattern demonstrates the significance of Colombo Region which comprises the capital and the prime city of the country. Development programs such as the GCEC undoubtedly would have attracted many of these urban ward in-migrants, directly or indirectly. NCP attracted five times the volume of in-migrants to rural localities vs urban, and this indicates the attractiveness of the Mahaweli settlement programs of this province.

Figure 3.4

PERCENTAGE DISTRIBUTION OF IN MIGRANTS AND NON MIGRANTS OF NCP AND COLOMBO REGION BY SECTOR, (1976-81)



Source: Based on Table 3.5.

In-migration to urban and rural localities of NCP is highly sex selective. Sex selectivity as measured by the sex ratio (Table 3.5) shows 192 males per 100 females in-migrants in the urban areas of NCP. Rural areas of this province, too, indicate high male selectivity. Non-migrants of NCP also indicate a somewhat higher sex ratio (109)

compared with non-migrants of Colombo Region (104) or with Sri Lanka as a whole (103). This implies that NCP, as the heart of the settlement programs, received more male migrants than females for a considerable time, which led to the sex imbalance in the province. In the recent past both urban and rural areas of NCP have received more male migrants, basically to carry out the massive development activities under the Mahaweli Program.

In-migrants to Colombo Region also demonstrate a high selectivity of males (Table 3.5), but this male concentration among in-migrants was not as high as in NCP. Interestingly, in-migrants to rural areas of Colombo Region have more or less the same sex ratio as the whole of Sri Lanka. The highest sex ratio in this region, that of in-migrants (157) was found in urban areas. However this figure is moderate compared with 192 for NCP. The expansion of the secondary and tertiary sectors in Colombo Region undoubtedly attracted a considerable number of female migrants, which kept the sex ratio at a fairly normal level.

3.4 Duration of Residence

To elaborate on the patterns of migration of NCP and Colombo Region between 1976 and 1981 the distribution of duration of residence is presented. Nevertheless the duration of residence data should be interpreted with caution because its quality depends on many factors. The data can suffer from memory lapse of migrants and there could be considerable heaping for some digits. However when migration is primarily interpreted as duration of residence within the period of

five years, memory lapse is considerably reduced. Another point worth noting is that while migration volumes are almost constant from year to year, the proportion of migrants in each duration of residence tends to decline as the duration increases. The reason for this, as Speare (1975:75) stated, is that, "...the longer the time since the move to a place, the greater is the chance that a person will have moved to another place".

The highest proportion of in-migrants to NCP, more than 37 percent, moved within the last year (1980-81), and the remainder of the in-migrants were fairly evenly distributed among the remaining cohorts, about 14 to 17 percent in each (Table 3.6). This indicates that the relative attractiveness of this province for migrants increased in the year immediately preceding the census (1981), with massive construction activities and settlement programs which would have attracted sponsored and spontaneous migrants to the Mahaweli Region.

Table 3.6

PERCENTAGE DISTRIBUTION OF DURATION COHORTS OF MIGRANTS TO AND FROM NORTH CENTRAL PROVINCE AND COLOMBO REGION,1976-81

Duration (Complete years)	North central Province		Colombo Region	
	In-Migrants	Out-Migrants	In-Migrants	Out-Migrants
0	37.4	28.1	40.5	38.8
1	17.5	15.2	18.0	17.9
2	14.7	16.7	16.9	17.3
3	16.2	24.5	14.4	14.5
4	14.1	15.5	10.1	11.5
Total	100.0	100.0	100.0	100.0
Number	8358	2631	15425	8927

Source: Derived from 10 percent sample tapes of 1981 census.

A similar calculation was made for migrants living in other areas of Sri Lanka and whose duration of residence was less than five years and previous residence was in NCP. Compared with in-migrants, a relatively low proportion of out-migrants from NCP (28 percent) moved to other areas of the country in the year immediately preceding the census (1980-81). As duration of residence of out-migrants increases, all proportions tend to decline, except for those with 3 years duration of residence. The proportion of in-migrants with 3 years duration of residence also shows a slight increase. These deviations in the in- and out-migration proportions of this province could be attributed to the changes which took place in the politico-administrative system of Sri Lanka in the year 1977. The present government came to office in 1977 and initially there was controversy regarding the Mahaweli, whether it should continue or whether changes should be made to the whole program. However in late 1977 it was decided to accelerate the Mahaweli program (see chapter 2 section 1.2).

In Colombo Region also the highest proportion of in-migrants (40 percent), moved into the region in the year immediately preceding the 1981 census, followed by 18 percent observed for the corresponding period of 1979-80 (Table 3.6). Unlike NCP, in Colombo Region a relatively higher proportion of out-migration, 39 percent, was concentrated in the year preceding the census. Probably the greater proportion of out-migrants from Colombo Region moved to newly developing areas such as the Mahaweli in recent past (1980-81) because of the high demand for skilled labour in those areas.

3.5 Return Migration

Migration studies have normally dealt with migrants at the place of destination and only rarely have the migrants who returned been studied (Davanzo and Morrison, 1978). At present there is no knowledge of the extent of return migration in Sri Lanka. Therefore the following discussion of lifetime return migrants will examine aspects of their movements and some of their characteristics in order to demonstrate the migration attractiveness of NCP and the Colombo Region.

Lifetime return migration refers to the movement of people back to places where they were born. By definition a person who has returned to his/her district of birth after having migrated at least once in his/her lifetime is considered as a lifetime return migrant. As shown in Table 3.7, a relatively very high volume of lifetime return migrants were observed in Colombo Region compared with NCP. This higher volume of lifetime return migrants can be basically explained by the large number of people born in Colombo Region and observed elsewhere in the country in 1981. Various factors may explain this high volume of return migrants to Colombo. For example, a person who was living in Colombo Region at the time of the census of 1981 might have indicated his/her place of birth as Colombo Region for prestige, though his/her place of birth was somewhere else in Sri Lanka. This behaviour is common in developing countries and would have inflated the actual figures for return migrants.

Table 3.7

PERCENTAGE DISTRIBUTION OF LIFETIME RETURN MIGRANTS OF NCP AND COLOMBO REGION BY AGE AND SEX,1981

Age	North Central Province			Colombo Region		
	Male	Female	Total	Male	Female	Total
0-14	24.7	26.5	25.6	17.9	16.9	17.3
15-24	29.0	30.4	29.7	22.5	20.2	21.3
25-34	27.2	22.6	25.0	21.0	22.6	21.9
35-44	7.9	9.6	8.7	15.1	16.0	16.0
45-64	7.0	7.8	7.4	18.5	19.0	18.8
65+	4.1	3.3	3.6	4.9	5.4	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	368	366	704	4873	5158	10031
Sex Ratio			100.5			94.5

Source: Derived from 10 percent sample tapes of 1981 census.

The sex distribution of lifetime return migrants in NCP shows an even distribution, while Colombo Region indicates more female selectivity with a sex ratio of 94 (Table 3.7). The age distribution of lifetime return migrants in NCP indicates a high concentration in the younger age groups compared with Colombo Region. This high proportion of children among the return migrants to NCP could imply a greater degree of family rather than individual migration. The majority of lifetime return migrants in Colombo Region were concentrated in the working age groups and probably the majority of them were single. This indicates a different response of people to the different type of development activities in NCP compared with Colombo Region.

A high proportion of lifetime return migrants to NCP and Colombo Region, 26 and 27 percent respectively, moved during the year immediately preceding the census of 1981 (Table 3.8). Nearly one half

of the lifetime return migrants in NCP (47 percent) and Colombo Region (46 percent) returned to the corresponding areas within the last five year period.

Table 3.8

PERCENTAGE DISTRIBUTION OF LIFETIME RETURN MIGRANTS OF NCP AND COLOMBO REGION BY DURATION OF RESIDENCE,1981

Duration (complete years)	NCP		Colombo Region	
	No.	%	No.	%
0 >	180	25.6	2717	27.1
1-4	152	21.6	1888	18.8
0-4	332	47.2	4605	45.9
5-9	158	22.4	1797	17.9
10+	214	30.4	3629	36.2
Total	704	100.0	10031	100.0

Source: Derived from 10 percent sample tapes of 1981 census.

Finally an attempt has been made to find out the proportion of in-migrants who are identified as lifetime return migrants for the two study areas. Lifetime return migrants of duration cohorts of less than five years in these two areas are included in the corresponding figures for in-migrants. For example, 332 lifetime return migrants observed in NCP with less than five years duration are included among the 8358 in-migrants to this province. The estimates of in-migrants who are lifetime return migrants were greater for Colombo Region: almost 30 percent of observed in-migrants of Colombo Region were identified as return migrants, whereas the corresponding figure for NCP was only 4 percent.

A further explanation of lifetime return migrants will not be attempted because such analyses are beyond the scope of this study. However the two different types of analysis (lifetime and recent migration) of trends and patterns of migration of NCP and Colombo Region indicate their paramount importance as migrant destinations in Sri Lanka.

3.7 Summary

The analysis of the migration streams of NCP and Colombo Region indicate an increasing trend of in-migration to both areas while out-migration seems to be increasing more rapidly in NCP. With its status as the primate and capital city as well as the establishment of the GCEC, Colombo Region had a greater net gain of migrants compared with NCP. Nevertheless the percentage increase of net-migrants as well as migration effectiveness were considerably higher in NCP, certainly a result of the Mahaweli development program.

The highest proportion of in- and net-migrants of NCP originated from Central Province in 1966-71 and 1976-81. Corresponding estimates of in- and net-migrants of Colombo indicated Southern, Central and Sabaragamuwa Provinces were the main population suppliers. In the population transfer between NCP and Colombo Region, the two most important migration destinations in the country, there was a net gain to the former for both periods and the advantage to NCP is increasing over time.

The in-migrants to NCP settled predominantly in rural locations while the majority of in-migrants to Colombo Region settled in urban areas. Expansion of massive development activities in NCP attracted a greater proportion of male migrants than did Colombo Region.

The lifetime return migration was greater in volume in Colombo Region than in NCP. About one third of the in-migrants in Colombo Region were lifetime return migrants (who returned within the last 5 year period) while the corresponding contribution of return migrants in NCP was negligible.

Duration of residence data of in- and out- migrants of NCP and Colombo Region indicated that the highest concentration of movers was in the year immediately preceding the 1981 census. Accelerated development programs of the country such as the Mahaweli and the GCEC could have stimulated the migration trends of the country in this specific period.

A knowledge of the basic demographic and socio-economic characteristics of migrants and non-migrants is valuable for understanding some of the implications of development programs on population redistribution in Sri Lanka. Therefore in the next chapter the characteristics of migrants and non-migrants of NCP and Colombo Region is presented.

Chapter 4

DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS OF MIGRANTS AND NON-MIGRANTS

Migration patterns depend not only on regional characteristics, but also on differences between migrants and non-migrants at both the origin and destination. Certainly an individual's characteristics are likely to exert important influences on his or her decision to migrate. The selectivity of migration is attributed to the fact that persons respond differently to the sets of positive and negative factors at origin and destination and have different abilities to overcome the intervening obstacles (Lee, 1966). With census information, however, the personal attributes are those of the migrant at the moment the census is taken and not at the time of migration. The census approach is not a problem for some characteristics that are constant, like sex. But it is clear that some characteristics of an individual will undergo changes because that person has migrated. The longer the duration of residence at his or her destination the more likely it is that the mover's characteristics will have become removed from those at the time of migration (Hugo, 1981:111). Therefore, in the following sections, the analysis of the characteristics of migrants will focus only on recent migrants with a duration of residence at their destination of less than five years.

4.1 Age and Sex

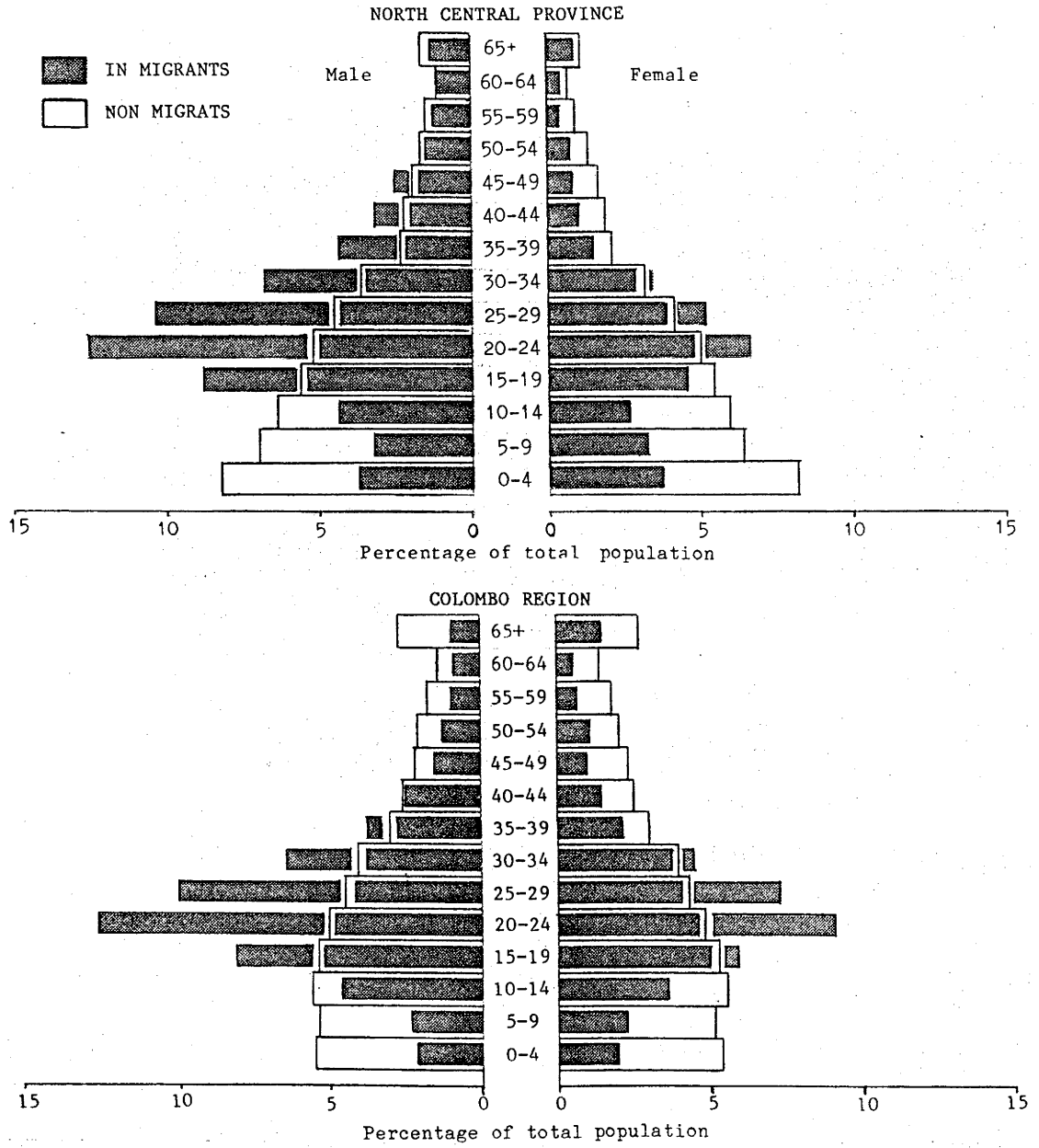
A universal feature of migration is its age selectivity. Thomas (1938) pointed out the lack of precision in migration data with regard to age at the time of the move. A large part of the evidence

concerning age reviewed by most authors is indirect: age at migration is inferred by various methods such as records of the age of those planning to move (Caldwell, 1969). Mobility tends to be highest in the late teens and twenties as a result of entrance to the labour force and formation of family units (Browning, 1971; Goldstein et.al., 1976). Zachariah (1966) and Visaria (1969) identified male migration as the norm within the Indian subcontinent. Analysing 1971 lifetime migration, Abeysekera (1981:33) found that "the single most consistent behaviour pattern of migrants on a cross-cultural scale appears to be substantiated in Sri Lanka, irrespective of the place of destination of the migrant stream: migrants tend to be young adults".

Migrants to NCP and Colombo Region in 1976-81 were mostly concentrated in the labour force age groups, and the highest concentration of in-migrants was found in the age group 20-24 (Figure 4.1). As a whole, most of the migrants to NCP and Colombo Region were in younger age groups of both sexes with approximately the same median age (Table 4.1). Female in-migrants were slightly younger than male in-migrants in both areas. However in NCP a high concentration of children in both sexes appears to substantiate the previous hypothesis; that migration to NCP was more familial in nature than that to Colombo Region. NCP and Colombo Region both have higher sex ratios among the in-migrants in almost all age groups, and overall the ratio was considerably higher in NCP (181 males per 100 females) compared with 138 for Colombo.

Figure 4.1

AGE STRUCTURE OF IN MIGRANTS AND NON MIGRANTS, 1976-81



Source: Based on Appendix B.1.

In order to estimate the magnitude of the difference between the migrant age structure for NCP and Colombo Region and the age structure of the total population of Sri Lanka, the index of dissimilarity (I_D) is calculated. The I_D measures the proportion of persons in one population (in this case, NCP and Colombo Region) who would have to be redistributed between age groups in order to have the same pattern as the second age distribution (total Sri Lanka) (Appendix B.1). The

index of dissimilarity for the in-migrants of Colombo Region (27.4 percent) is somewhat higher than that for the NCP (24.6 percent) because of the greater concentration of female in-migrants in age 15-34 in Colombo Region (Figure 4.1, Table 4.1).

Table 4.1

PERCENTAGE DISTRIBUTION OF IN-, OUT- AND NON-MIGRANTS OF NCP AND COLOMBO REGION BY AGE AND SEX, 1976-81

Age	NORTH CENTRAL PROVINCE								
	In-Migrants		Sex Ratio	Out-Migrants		Sex Ratio	Non-Migrants		Sex Ratio
	M	F		M	F		M	F	
0-14	17.3	27.8	113	35.9	37.3	105	41.0	43.0	104
15-24	33.0	31.4	191	23.3	30.5	84	20.9	22.0	104
25-34	26.6	23.9	201	20.2	19.2	114	15.5	15.1	112
35-44	11.5	7.7	272	11.4	7.4	168	8.6	8.6	109
45-64	9.6	6.8	255	7.8	4.6	184	11.0	9.2	131
65+	2.0	2.4	147	1.4	1.0	146	3.0	2.1	158
Total	100.0	100.0	181	100.0	100.0	109	100.0	100.0	109
Number	5388	2970		1373	1258		33738	30824	
I_D			24.6			13.6			7.2
Median	21.0	20.5		20.9	19.4		19.1	18.0	
				COLOMBO		REGION			
0-14	15.5	18.2	117	25.8	32.1	108	32.2	32.4	104
15-24	35.8	35.0	141	23.6	22.2	142	20.4	20.3	105
25-34	28.3	27.3	142	23.4	25.1	125	16.3	16.1	106
35-44	10.8	8.2	184	12.5	10.2	167	11.2	11.0	106
45-64	7.8	8.1	132	11.7	7.7	204	14.7	14.8	104
65+	1.8	3.2	78	3.0	2.7	148	5.2	5.4	99
Total	100.0	100.0	138	100.0	100.0	134	100.0	100.0	104
Number	8938	6487		5114	3813		129586	124256	
I_D			27.4			13.4			3.9
Median	20.9	20.8		25.2	23.3		23.7	23.6	

Note : Index of Dissimilarity (I_D) and median age were calculated by using quinquennial age distribution.

Source: Derived from 10 per cent sample tapes of 1981 census.

Out-migrants from NCP and Colombo Region were highly concentrated in the young age groups (0-14). However the median age of out-migrants from Colombo Region (25 years for males and 23 years for females) was comparatively higher than for NCP. The index of dissimilarity was more or less the same for out-migrants from both areas, between 13 and 14 percent. The sex ratio of the out-migrants was relatively high for those moving from Colombo Region (134), while it was moderate and almost the same as non-migrants in NCP (109).

As a whole, relatively more non-migrants in NCP were in the younger age groups (0-14) compared with Colombo Region (Figure 4.1), and therefore the median age in NCP was lower than in Colombo Region (Table 4.1). Consequently the age structure of non-migrants of NCP also indicated somewhat greater deviation (I_D= 7 percent), compared with the corresponding figure for Colombo Region (4 percent). Among non-migrants the sex ratio slightly favoured males in NCP (109) while in Colombo Region (104) it was almost identical to the total Sri Lanka figure (103).

It is worth noting that, as Rowland (1979:100) pointed out,

> "--- age itself is far from being a cause of migration. People move not because they are a given age, but because during particular ages a transition occurs, on average, from one life cycle stage to another. This transition brings new attitudes, opportunities, needs and responsibilities, which are the real explanatory factors in migration".

As observed in NCP and Colombo Region, the highest proportion of migration takes place at ages 15-34, where such a transitions occurs and brings a desire for higher education; for first or better employment; and marriage and family formation.

4.2 Marital Status

As shown in the previous section, males were over-represented in the 1976-81 in-migration streams to NCP and Colombo Region, and therefore these males were more likely to be single than non-movers in both areas. The concentration of in-migrants in the young ages could also be attributed to the disproportionate number of single persons in migratory flows.

Among the male in-migrants of NCP and Colombo Region a majority (55 percent and 64 percent respectively) were never married, as is shown in Table 4.2. Female in-migrants in Colombo Region also had higher concentrations of those never married, but the reverse situation was observed in NCP where a much higher proportion of female in-migrants (69 percent) were currently married. Therefore it appears that there is some "marriage migration" of females to NCP, as is commonly found in rural areas of the Indian subcontinent (Skeldon, 1983).

Table 4.2

MARITAL STATUS STRUCTURE OF IN-MIGRANTS AND NON-MIGRANTS OF NCP AND COLOMBO REGION (15 YEARS OF AGE AND OVER) BY SEX, 1976-81

Marital Status	North Central Province				Colombo Region			
	In-Migrants		Non-Migrants		In-Migrants		Non-Migrants	
	M	F	M	F	M	F	M	F
Never Married	55.4	26.7	40.0	28.4	63.6	48.5	43.8	33.6
Currently Married	43.4	69.5	57.7	64.1	35.6	46.8	54.3	57.9
Widowed	1.0	3.5	1.7	6.9	0.6	4.2	1.5	7.9
Divorced/Seperated	0.2	0.3	0.6	0.6	0.2	0.5	0.4	0.6
Totall	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	4455	2146	19896	17576	7550	5303	87862	84061

Source: Deirved from 10 percent sample tapes of 1981 census.

Compared with non-movers, higher proportions of male in-migrants of all ages in NCP and Colombo Region were found to be never married. Female in-migrants in both areas also had higher proportions never married in all ages compared with non-migrants except in the age groups 15-19 and 20-24 in NCP and 15-19 in Colombo Region (Appendix B.2). It is reasonable to assume that marriage occurs earlier in NCP than Colombo Region, and also is more common among female in-migrants of NCP than non-movers.

4.3 Education

One of the important aspects of migrant selectivity relates to education. People move because of the absence of a specific type of educational institution in their local area or people who are more educated desire better job opportunities than may be available in their home region. Most studies in developing countries, particularly those of rural to urban migration, have found that migrants have lower educational levels than non-migrants at the place of destination but higher levels than the population from which they are drawn (Zachariah, 1966). Though there is no consistent relationship between migration and education, many studies have indicated an increasing trend to migrate with increased schooling (Pascual, 1966; Caldwell, 1969: Speare,1974). The United Nations (1980b) study of Sri Lanka found very few educational differences between migrants to rural areas and non-migrants in rural areas. Siddhisena (1979), on the other hand, found that migrants to urban areas of Colombo District tend to be more highly educated than the non-migrants.

The 1981 census provided information on educational attainment of persons aged ten years and over. However, the present study is concerned with the educational attainment of persons aged 15 years and over only, because almost all the children age 10-14 would be attending primary or secondary educational institutions.

In-migrants of NCP and Colombo Region of both sexes were more highly educated than the non-movers, as shown in Table 4.3. The main exception to this pattern was the younger migrants to Colombo Region. Both the male and female in-migrants to Colombo Region included a greater concentration of highly educated persons than in the corresponding groups for NCP. Since Colombo Region is the centre of higher education in Sri Lanka, it can be expected that its residents have higher levels of education than those in other parts of the country. Therefore migrants to Colombo Region can also be expected to obtain higher levels of education because many of them have moved to Colombo Region to pursue higher education.

The question then arises as to why a considerable proportion of in-migrants (compared with non-migrants) with higher levels of education have moved to a predominantly rural area such as NCP. It is reasonable to assume that most of the migrants to NCP would have migrated in order to participate in the labour force rather than pursue higher education. It is possible that professional and technical employment opportunities created by the ongoing Mahaweli development program were responsible in part for attracting more educated persons.

Table 4.3

PERCENTAGE DISTRIBUTION OF IN-MIGRANTS AND NON-MIGRANTS BY EDUCATIONAL ATTAINMENT AND BY AGE AND SEX, 1976-81

Educational Attainment	Male								Female							
	15-19		20-29		30+		Total		15-19		20-29		30+		Total	
	IM	NM	IM	NM	IM	NM	IM	NM	IM	NM	IM	NM	IM	NM	IM	NM
NORTH CENTRAL PROVINCE																
No Schooling	5.7	9.1	3.8	5.7	8.1	10.6	5.9	8.8	12.8	9.3	4.6	9.5	23.5	31.9	12.8	19.8
Primary	40.1	37.4	28.9	37.0	35.7	46.7	33.5	41.9	31.9	33.0	25.4	35.5	29.7	39.6	28.1	36.9
Secondary	42.6	41.6	39.8	38.2	29.8	31.4	36.2	35.4	39.5	42.4	35.5	34.0	24.3	19.2	32.2	28.9
Higher	11.6	11.9	27.5	19.1	26.4	11.3	24.4	13.9	15.8	15.3	34.5	21.0	22.5	9.3	26.9	14.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	739	3665	1890	5691	1808	7912	4437	17161	371	3558	990	5691	768	7912	2129	17161
COLOMBO REGION																
No Schooling	5.2	3.1	2.1	2.4	4.2	5.3	3.4	4.2	10.9	3.5	3.6	3.1	12.3	13.2	8.0	9.0
Primary	28.2	18.1	10.9	17.0	19.7	28.3	17.0	23.6	24.5	15.5	13.9	17.0	23.1	29.6	19.0	24.0
Secondary	45.6	54.0	35.9	47.2	35.8	41.7	37.5	45.1	38.5	51.6	30.6	44.0	29.2	36.0	31.4	40.6
Higher	21.0	24.8	51.1	33.4	40.3	24.7	42.1	27.1	26.1	29.4	51.9	35.9	35.4	21.2	41.6	26.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1260	13638	3461	23686	2815	50161	7536	87485	888	13137	2480	22199	1926	47855	529	83191

Note: Primary = Grade 1 to 5
Secondry = Grade 6 to 9
Higher = Grade 9 +
IM = In-migrants
NM = Non-migrants

Source: Derived from 10 percent sample tapes of 1981 census.

4.4 Labour Force Participation

As noted earlier, labour force participation, like education, could significantly affect the level of migration. Usually migrants differ from non-migrants in the extent and character of their participation in the labour force (Goldstein, 1974). In studying such differentials it is important to distinguish how migrants participate in the labour force at the destination, such as their contribution to unemployment. The implications of the removal of part of the economically active population from the areas of origin are also important. However, the data used in the present study are the labour force information on migrants at the place of destination, as this provides some indication of the economic behaviour of the migrants in NCP and Colombo Region of Sri Lanka.

The United Nations (1980b) study of Sri Lanka revealed that higher proportions of migrants of both sexes are employed than are non-migrants. Similarly it was found that the proportion actively seeking work was slightly greater for the non-migrants. According to occupation categories, the Marga Institute study (1979) found that in Colombo city 40 percent of the participants in the informal sector came from districts other than Colombo or Kalutara (Kalutara District is located just below south of Colombo District: see Figure 1.1).

The majority of male in-migrants (80 percent) and male non-migrants (77 percent) of NCP were employed, but among female in-migrants and non-migrants the majority were classified as "own houseworkers" (Table 4.4). In Colombo Region, the largest proportion of male in-migrants (78 percent) were employed, while only 59 percent of male non-migrants claimed to be employed. Although in Colombo

Region the majority of female in-migrants and non-migrants were concentrated in the "own housework" category, a significantly higher proportion of female in-migrants (35 percent) were employed than female non-migrants (14 percent). It is likely that highly-educated single female in-migrants in Colombo Region have taken most of the employment opportunites.

Table 4.4

PERCENTAGE DISTRIBUTION OF IN-MIGRANTS AND NON-MIGRANTS OF NCP AND COLOMBO REGION (15 YEARS OF AGE AND OVER) BY ACTIVITY STATUS, 1976-81

	NORTH CENTRAL PROVINCE			
	In-migrants		Non-migrants	
	Male	Female	Male	Female
Employed	79.9	15.2	76.8	17.7
Student	3.7	4.3	7.6	8.3
Retired	1.6	3.2	3.1	3.8
Own housework	4.9	71.3	5.2	66.2
Other	9.9	6.0	7.3	4.0
Total	100.0	100.0	100.0	100.0
Number	4455	2146	19896	17576
	COLOMBO REGION			
Employed	78.4	35.0	59.4	13.9
Student	6.8	7.3	9.4	9.4
Retired	2.6	4.1	9.6	8.0
Own housework	3.8	45.4	7.0	61.1
Other	8.4	8.2	14.6	7.6
Total	100.0	100.0	100.0	100.0
Number	7550	5303	87862	84055

Note: Own housework = A person who is mostly engaged in own housework duties in his/her house and who is not employed.
Source: Derived from 10 percent sample tapes of 1981 census.

An attempt at estimating unemployment in NCP and Colombo Region has been not made in this section. The "other" activity status component in the Table 4.4 includes unemployed persons as well as persons who cannot be classified into any one of the other four categories, such as children not attending school (Department of Census and Statistics, 1981:32). Nevertheless, persons who were actively seeking work within the reference period of 30 days were considered as unemployed and these figures will be highlighted in the next section.

4.4.1 Labour Force Participation Rates

The potential labour force of the in-migrants and non-migrants basically depends on their age and sex structure. The proportion of in-migrants in the labour force age groups (15 years and over) in NCP and Colombo Region were 79 percent and 83 percent respectively. This study defines the economically active population or labour force as those who were working or seeking work during the 30 days of the reference period. Further questioning such as 'reasons for not seeking work' were also asked in the 1981 census, and therefore it was possible to collect information about persons who 'think work is not available' and include them as unemployed. However this was not attempted in this study.

The total labour force participation rate was higher among the in-migrants of NCP and Colombo Region, compared with the corresponding rates of non-migrants in both the areas. The rates were very much higher for males than for females (Table 4.5). Age-specific activity rates among the male in-migrants of NCP and Colombo Region were almost

comparable, however among the older age group (45-64) of NCP there was a higher activity rate, probably because of employment opportunities in the agricultural expansion in the province. In-migrant women of all age groups in Colombo Region participate much more in the labour force than the female in-migrants of NCP and female non-migrants of both the areas (Table 4.5).

Table 4.5

LABOUR FORCE PARTICIPATION RATES OF IN-MIGRANTS AND NON-MIGRANTS OF NCP AND COLOMBO REGION BY AGE AND SEX, 1976-81

	NORTH CENTRAL PROVINCE			
	In-migrants		Non-migrants	
	Male	Female	Male	Female
15-29	81.5	22.3	70.4	20.3
30-44	95.5	25.0	97.0	25.8
45-64	90.7	16.7	91.3	26.0
Crude activity rate (15-64)	86.4	22.4	81.9	22.8
Standardized for age(15-64)	87.7	21.9	82.9	23.1
	COLOMBO REGION			
15-29	83.1	50.7	66.1	33.9
30-44	94.7	46.6	91.7	26.9
45-64	75.8	23.2	72.1	12.6
Crude activity rate (15-64)	85.5	46.9	75.3	26.7
Standardized for age(15-64)	84.9	43.7	75.0	27.4

Note: The total population of Sri Lanka in 1981 was taken as standard. Age groups used were 15-29, 30-44 and 45-64.
Source: Derived from 10 percent sample tapes of 1981 census.

In-migrants of both sexes in NCP had higher unemployment rates than the non-movers, and this was especially so among the females (Table 4.6). The unemployment rate was highest among the younger age groups (15-29), and this was especially true for the female in-migrants of NCP. In Colombo Region about one-fourth of the non-migrant labour force was unemployed; for females the rate was quite high, 44 percent, while the corresponding figure for in-migrants was only 23 percent. Among the male in-migrants unemployment was higher in Colombo Region while for female in-migrants it was higher in NCP (Table 4.6).

Table 4.6

UNEMPLOYMENT RATES OF IN-MIGRANTS AND NON-MIGRANTS OF NCP AND COLOMBO REGION BY AGE AND SEX, 1976-81

	NORTH CENTRAL PROVINCE			
	In-migrants		Non-migrants	
	Male	Female	Male	Female
15-29	9.8	37.4	10.5	35.7
30-44	2.8	19.0	1.2	9.9
45-64	2.1	2.9	0.3	3.0
Unemployment rate (15-64)	6.7	29.9	5.2	21.4
	COLOMBO REGION			
15-29	9.9	26.2	35.5	59.4
30-44	3.3	15.6	7.0	29.3
45-64	3.2	4.1	2.4	6.6
Unemployment rate (15-64)	7.4	22.6	17.5	44.3

Note: Unemployment rate is defined as the percentage of persons unemployed in the labour force.
Source: Derived from 10 percent sample tapes of 1981 census.

The general conclusion is that male in-migrants in NCP have greater employment opportunities because of the massive construction activities under the Mahaweli program, but females have few such opportunities. In Colombo Region unemployment was twice as high among the non-migrants than among in-migrants for both sexes and this could be attributed to the higher levels of education which the in-migrants possess. The United Nations study (1980b:69) indicated that "non-migrants can wait longer before accepting a job: they can be more particular as they have the social and economic support to remain unemployed longer". As hypothesized, more of the in-migrants of Colombo Region were unemployed than the in-migrants of NCP, but this was not the case among females, where the unemployment rate was higher among the in-migrant females of NCP.

4.4.2 Occupation

Most jobs in NCP are in the agricultural sector. More than three quarters of the male and female non-migrants of NCP were engaged in agriculture, however among the in-migrants these proportions were reduced to 44 percent and 39 percent for males and females respectively (Table 4.7). The next highest proportion of employed male in-migrants of NCP was found in the production sector and among the female in-migrants it was in the professional, technical, administrative and managerial category. This concentration possibly could be attributed to the Mahaweli development program which offers a considerable amount of employment opportunities for professionaly skilled people. Probably many of them would have migrated from Colombo Region, the main source area of professionally skilled people.

Table 4.7

PERCENTAGE DISTRIBUTION OF IN-MIGRANTS AND NON-MIGRANTS OF NCP AND COLOMBO REGION (15 YEARS OF AGE AND OVER) BY OCCUPATIONAL CATEGORY, 1976-81

	NORTH CENTRAL PROVINCE			
	In-migrants		Non-migrants	
	Male	Female	Male	Female
Prof.,Technical	7.2	35.1	2.7	8.0
Clerical	6.5	13.0	2.4	3.2
Service and sales	11.6	4.3	6.2	2.8
Production	30.2	8.4	13.6	8.1
Agriculture	44.5	39.2	75.1	77.9
Total	100.0	100.0	100.0	100.0
Number	3486	329	15117	3048
	COLOMBO REGION			
Prof.,Technical	11.2	21.6	10.4	25.8
Clerical	16.0	19.5	14.2	21.1
Service and sales	40.5	32.3	27.3	16.0
Production	29.5	25.0	34.9	29.7
Agriculture	2.8	1.6	13.2	7.4
Total	100.0	100.0	100.0	100.0
Number	4923	1750	40077	10280

Note: Professional, technical category includes the administrative and managerial workers also.
The armed forces category is excluded from the analysis.
Source: Derived from 10 percent sample tapes of 1981 census.

As expected for the most urbanized area of the country, Colombo Region received the lowest proportion of male and female in-migrants whose occupational category was agriculture. This was also true for the non-movers of Colombo Region, but the respective proportions were considerably higher than the corresponding proportions for the in-migrants of both sexes (Table 4.7). The highest proportions of employed male and female in-migrants of Colombo Region were found in the service and sales occupations, while non-movers of both sexes were

more likely to be production workers. In Colombo Region, among both in-migrants and non-migrants, females were more likely than males to be in the professional, technical, administrative and managerial occupations. The greater proportion of females in these occupations could be explained by the inclusion of school teachers, nurses, and mid-wives, where females have more opportunities.

4.5 Summary

A majority of the in-migrants in NCP and Colombo Region were concentrated in the labour force age groups. The higher proportion of children (0-14) among the in-migrants in NCP demonstrates the movement of families to this province. Compared with the total age structure of Sri Lanka, the in-migrants in NCP and Colombo Region were considerably different. In-migrants and out-migrants of NCP have more or less the same median age estimates, while in Colombo Region out-migrants were considerably older than in-migrants.

A majority of the male in-migrants (15 years and over) in NCP and Colombo were never married, while among in-migrant females this was true only in Colombo Region. In-migrants of both sexes and in both areas were found to be more educated than non-movers. However Colombo Region received a larger proportion of highly educated migrants than did the NCP. In general the proportion of in-migrants with "no schooling" was smaller than among the non-movers in both areas.

Significantly higher proportions of male in-migrants and non-migrants were employed than females. However among female in-migrants of Colombo Region a considerably higher proportion were employed compared with other females in both areas. Labour force

participation rates were considerably higher among in-migrants than among the non-movers in both areas. In-migrants of NCP had low rates of unemployment compared with in-migrants in Colombo Region. Higher unemployment rates for both sexes of in-migrants in NCP indicate an increasing problem of unemployment in the province. Agricultural occupations were common among in-migrants and non-migrants of NCP. In Colombo Region higher concentrations of employed in-migrants were found in the service and sales sector, while the non-movers were more likely to be in the production sector.

Chapter 5

PROJECTION OF FUTURE POPULATION OF NORTH CENTRAL PROVINCE AND ITS IMPLICATIONS ON LABOUR FORCE

The basic variables responsible for change in the size of human populations are the numbers of births and deaths; in addition, for any region of a country internal migration as well as international migration may also be important. This study projects the population of NCP of Sri Lanka to the year 2001 based on the observed population of the 1981 census. The implications of rapid population growth on labour force in this province in the projection period are discussed. Unlike NCP, Colombo Region was exposed to significant international migration but no good information was available on this. Therefore no attempt has been made to project the population of Colombo Region. As stated earlier, the Mahaweli project, the largest development program ever planned in Sri Lanka, is focussed on NCP. Therefore the future population growth of NCP and its implications for labour force are important because they provide basic demographic parameters for better planning of population redistribution in the country.

5.1 Methodology

The FIVFIV/SINSIN computer program (Shorter and Pasta, 1974) was used to make population projection for NCP. This program uses a modified cohort component method to project five-year age groups for up to seven five-year projection periods. The required input variables are age-sex specific data and appropriate life tables. In the projection, separate assumptions were made for the three

components of population growth: mortality, fertility and internal migration (Appendix C.1). In the present study the Princeton 'West Model' life table was used. Another alternative projection was made for the NCP using the same assumptions for the mortality and fertility, but net-internal migration was not included. Therefore this procedure allows estimates of the impact of internal migration on future population size of NCP to be made. In the projection international migration has been assumed as insignificant for this province throughout the projection period. No adjustments have been made to the 1981 observed population of NCP, because the enumerated census data are quite satisfactory in Sri Lanka; the last post-enumeration survey held in Sri Lanka in 1953 indicated only 0.7 percent under-enumeration (Kannangara, 1953). Age reporting has considerably improved in Sri Lanka after independence in 1948 compared with most other developing countries, mainly because of wide spread education (Nadarajah, 1976:383). Therefore it is not necessary to smooth the observed population of NCP of 1981 for projection purposes.

5.2 Fertility

The factors which will influence the future fertility in NCP are the age structure of the female population, marriage patterns, educational attainment, labour force participation, and the efficiency of the family planning program. The age distribution of the population at present favours high fertility in the future. Because of the resultant young age structure of the population of this area, the potential for further rapid population increase is enormous (United Nations, 1980c:21). Total fertility of NCP persisted at the high level of 6.3 at 1963, but reduced gradually to 5.2 and 4.1 in

1971 and 1981 respectively. Though the crude birth rate of NCP in the recent past shows a slight increase, it possibly could be attributed to the differences in the age structure (Appendix C.2). The pattern of the fertility schedule is assumed to be constant throughout the projection period and is presented in Table 5.1.

Table 5.1

DISTRIBUTION OF AGE-SPECIFIC FERTILITY SCHEDULE BY ONE UNIT OF TOTAL FERTILITY, NCP

Age group	15-19	20-24	25-29	30-34	35-39	40-44	45-49	(ASFR*5)
Fertility	.013	.050	.045	.038	.042	.010	.002	1.0

Source: Derived by using reports of census and vital statistics.

The census data reveal that there has been an increasing tendency in age at first marriage for both sexes. For instance the singulate mean age at marriage of females in NCP increased from 19.1 years in 1963 to 22.0 years in 1981.

Due to the rapid rate of population growth in NCP, the family planning services might not be able to meet the demand for terminal and reversible methods of contraception in the foreseeable future. In Sri Lanka, as in many other developing countries, family planning knowledge and facilities have long been the vested rights of the educated and well-to-do, who have been exercising these rights as a matter of course (United Nations, 1980c). However the World Fertility Survey (1978) and a more recent studies by the Department of Census and Statistics (1983b, 1983c) have indicated that there is a desire for control of fertility among married couples in all parts of Sri Lanka. Considering all of these factors, it is assumed that the

reduction in fertility will be achieved gradually and therefore the total fertility rate in NCP will decline to 3.1 in the year 2001 (Appendix C.1).

5.3 Mortality

The incidence of morbidity and mortality in Sri Lanka has fallen greatly because of the eradication of malaria and the provision of social services such as education and health care. Life expectancy at birth in the country increased from 1920-22 levels of 33 years for males and 31 years for females to 64 and 67 years respectively by 1971, a gain of 96 percent for males and 118 percent for females (Nadarajah, 1983:318). Life expectancy was slightly higher in NCP in 1971 than for Sri Lanka as a whole, 66 and 69 years. Although infant mortality still accounts for a considerable proportion of deaths in NCP, significant reductions were experienced in the 1970s (Appendix C.2). Further reductions in infant and child mortality may be expected, especially as a result of programs to extend water supplies and improve access to primary health care (Roberts, 1981). Crude death rates and maternal mortality rates had already reached very low levels in NCP by 1979.

Adult mortality is approaching developed country levels, and further investments in curative and preventive medicine are likely to cause relatively little alteration in age-specific mortality rates after the childhood years. It is considered that great improvement in health care and socio-economic development are both necessary for increases in expectation of life beyond 65 years (United Nations, 1980c; Rao, 1976). According to the United Nations (1981b:3) "the assumed future quinquiennial gains are lowered to 2 or 1.5 years,

instead of 2.5, for some developing countries where recent evidence indicates a retardation of improvement in mortality levels". Therefore considering all of these factors, the expectation of life at birth for males and females in NCP for the base year (1981) was estimated as 66.5 and 69.9 years respectively, and these are assumed to increase to 69.6 years for males and 73.0 years for females by the period 1996-2001 (Appendix C.1).

5.4 Migration

As previously stated, the Mahaweli development scheme envisions the resettlement of about 220,000 families into NCP. In addition to these settlers, the direct and indirect employment opportunities created by this program are bound to attract young persons into the area (United Nations, 1980c). Therefore the net-migrants to NCP should have a significant impact on the future size and structure of the population of the province.

As indicated in earlier chapters, NCP was able to attract a significant proportion of recent migrants (1976-81) and lifetime migrants compared to other parts of the country. For this projection only the recent net-migrants (1976-81) were considered, and their age structure was found to be concentrated either in the reproductive ages or the labour force age groups (Appendix C.3).

The Government has set precise settlement targets for the Mahaweli program for the period 1982-86. As illustrated in Table 5.2, for the period 1982-86 there will be nearly 50,000 families settled in this province. However it should be noted that some settlers will arrive from the same province to settle in the project sites.

Therefore the observed net-migration (1976-81) trends of NCP are considered to be more reasonable and they are assumed to increase gradually throughout the projection period. These figures are given in Appendix C.1. The age structure of the observed net-migrants (1976-81) of NCP is assumed to remain constant in the projection period.

Table 5.2

SETTLEMENT ALLOCATIONS TO FARMER FAMILIES IN NEWLY STARTED PROJECTS

Irrigation System	Number of farmer families to be settled					
	1982	1983	1984	1985	1986	Total
C (zones 2-6)	3,120	2,790	4,170	4,350	5,600	20,030
B (LEFT BANK)	1,442	3,431	2,896	5,736	7,690	21,195
B (RIGHT BANK)	-	-	1,405	2,120	2,120	5,645
G	100	100	1,315	1,315	-	2,830
Total	4,662	6,321	9,786	13,521	15,410	49,700

Source: Ministry of finance and Planning (1982).

5.5 Population Projection

The projected population of NCP for the period 1981 to 2001 is presented in Table 5.3. It is clear that NCP's population is likely to double within the next 20 year period and it is likely that reductions in fertility will have a very negligible effect on the future size of the population of the province. The observed annual population growth rate of NCP of 4.6 percent in the period 1971-81 would decline to 3.6 percent for the period 1981-2001 because of the expected increase in the base population.

Table 5.3

PROJECTED POPULATION OF NCP BY SEX,1981-2001
(mid year population in thousands)

Sex	1981	1986	1991	1996	2001
Male	467	567	686	825	987
Female	392	472	569	682	810
Total	859	1039	1255	1507	1788
Annual rate of Growth -		3.8	3.8	3.7	3.4

Source: Appendix C.4

The age structures of future populations have important socio-economic implications. As indicated in Table 5.4, the proportion of the population aged 0-14 would decline over the time and the opposite could be expected for ages 65 and over. Therefore it is reasonable to assume that the future population of NCP would be "older" than the present. More detailed age structures of both sexes of the projected population of NCP are shown in Appendix C.4. Since there would be a higher concentration in the working age groups in the future population of NCP, resulting from the expected age structure of the in-migrants, the age dependency ratio would decline markedly in the future (Table 5.4).

Table 5.4

PERCENTAGE DISTRIBUTION OF FUTURE POPULATION OF NCP BY AGE

Age	1981	1986	1991	1996	2001
0-14	38.6	36.2	34.6	32.4	30.6
15-64	58.8	61.1	62.4	64.2	65.5
65+	2.6	2.7	3.0	3.4	3.9
Total	100.0	100.0	100.0	100.0	100.0
Sex Ratio	119	120	120	121	121
Dependency Ratio	65.5	63.7	60.3	55.8	52.6

Note: Dependency Ratio = $\frac{(0\text{-}14) + (65+)}{15\text{-}64}$

Source: Appendix C.4

As stated earlier, an alternative population projection was made for NCP using the same assumptions for fertility and mortality, but internal migration was excluded. About 48 percent of the projected future increase in the total population of NCP could be attributed to the net-migration (Table 5.5). Therefore it is clear from the results of the projection that the net-migration component of the projection has a strong effect in determining the future population of NCP than the fertility or mortality. In fact male net-migration would contribute more than female migration in population increase because of the nature of the employment opportunities in the province. Apart from the growth in the total population, changes in the age structure have important implications for economic and social development planning in the province, such as for the labour force.

Table 5.5

CHANGES IN THE PROJECTED POPULATION OF NCP, AND CONTRIBUTION OF NET-MIGRANTS TO ITS FUTURE SIZE, 1981-2001 (In thousands)

	Persons	Male	Female
1 Observed total population (1981)	859	467	392
2 Expected total population (2001)	1788	978	810
3 Expected total population without net-migration (2001)	1344	704	640
Total change 2 - 1	929	511	418
Increment due to net-migration(2 - 3)	444(48%)	274(54%)	170(41%)

Source: Appendix C.4 and unpublished computer tabulations.

5.6 Labour Force Participation

The labour force projection for NCP is based on the population projection presented in the previous section, where mortality, fertility and net-migration are considered. The observed labour force participation rates of NCP in 1981 are assumed to be constant throughout the projection period of 1981-2001 (Appendix C.3).

The projected labour force of both sexes of NCP is shown in Table 5.6. This indicates that the labour force would increase by 413,000 (annual rate of growth 4.4 percent) during the projection period from 1981 to 2001, as against the increase of total population of 929,000 (annual rate of growth 3.6 percent). Though the growth rate of the labour force would remain at a higher level than the total population increase, it also shows a gradual decline over the projection period. However the rate of growth would not be constant across age and sex. Compared with females the number of males in the labour force would increase rapidly because of the expected expansion in agriculture, where male in-migrants as well as non-migrants have more employment

opportunities in the province.

Table 5.6

PROJECTED LABOUR FORCE OF NCP BY SEX, 1981-2001
(In thousands)

Sex	1981	1986	1991	1996	2001
Male	237	307	384	476	580
Female	51	65	80	99	121
Total	288	371	464	575	701
Annual Rate of Growth	-	5.1	4.5	4.3	4.0

Source: Unpublished computer tabulations.

More than half of the total increase in the labour force of NCP between 1981 and 2001 could be attributed to net-migration (Table 5.7). This analysis suggests that the most important factor in determining male labour force is net-migration, however among the females it is appears to be less important.

Table 5.7

CHANGES IN THE PROJECTED LABOUR FORCE OF NCP, AND CONTRIBUTION OF NET-MIGRANTS TO ITS FUTURE SIZE, 1981-2001 (In thousands)

	Persons	Male	Female
1 Observed total labour force (1981)	288	237	51
2 Expected total labour force (2001)	701	580	121
3 Expected total labour Force without net-migration (2001)	484	390	94
Total change 2 - 1	413	343	70
Increment due to net-migration(2 - 3)	217(52%)	190(55%)	27(39%)

Source: Unpublished computer tabulations.

5.7 Summary

The demographic situation in NCP shows that fertility is declining very marginally but remains at a relatively high level. Mortality is already at a low level with a high expectancy of life at birth for both sexes. Therefore significant improvements in expectation of life are not likely. Net-migration to NCP will certainly have a marked contribution on the future size as well as the structure of the population. The observed population of the province of 1981 would double before the end of twentieth century because of the accelerated rate of growth of the population. The population will undergo a slight ageing process which would lead to reductions in the dependency ratio.

The projected future size of the labour force in NCP would increase more rapidly than the total population, because of the resultant age structure of the net-migrants. Over 50 percent of the increase in the future size of the labour force will be from the net-migrants segment of the population of the province.

Chapter 6

SUMMARY AND CONCLUSIONS

6.1 Summary

The population of Sri Lanka is maldistributed with a greater concentration of population in the wet zone and especially in Colombo Region. The dry zone is basically thinly populated and NCP has the lowest density of all the provinces. This study has dealt with the internal migration patterns of Sri Lanka and specifically NCP and Colombo Region, because these two areas currently have the leading development programs of the nation. Many policies and programs have been formulalated to relieve population pressure in the wet zone and to repopulate the dry zone. Other programs initiated in Colombo Region, in the wet zone, such as the IPZ's, have adversely affected the desired redistribution of the population.

Migrants have been defined in this study in two ways: lifetime and recent migrants. This has helped to evaluate the time factor involved in the migration process, and to determine the directions of migration flows. Census data used in the study have not provided any information about the determinants and consequences of the observed migration flows. However this study has attempted to interpret the relationship between migration patterns and the leading development programs and therefore to provide some guidelines for policy makers in understanding the impact of the development programs on population redistribution.

6.2 Major Findings and Conclusion

The pattern of internal migration observed in Sri Lanka, using two different definitions from the 1981 census, is simple: there are two dominant net-migration areas, one in the wet zone, Colombo Region, and another in the dry zone, NCP. Therefore the major hypothesis of the study, that "in Sri Lanka the pattern of net-migration is towards the leading development programs", was substantiated. Lifetime net-migration volume was highest in Gampaha District in Colombo Region, where the Investment Promotion Zones (IPZ) were located, followed by Anuradhapura and Polonnaruwa Districts (NCP) and Colombo District. Recent net-migration (1976-81) was also highest in Gampaha District followed by Anuradhapura, Polonnaruwa, and Colombo Districts.

Adopting broader geographical localities--provinces or regions--for the analysis revealed a higher volume of lifetime net-migration to NCP than to Colombo Region. However estimates of recent migration (1976-81) show the opposite pattern. Therefore one of the major conclusions would be the new-found attraction for migrants of Colombo Region. This may not be desirable because Colombo Region already has the highest concentration of population in the country and this situation could further increase the maldistribution.

Examining the migration trends (1966-71, 1976-81) in NCP and Colombo Region, an increasing trend of in-migrants for both the areas was found. However, out-migration was found to be accelerating more from NCP than from Colombo Region. It is interesting to note that though out-migration was increasing more rapidly in NCP, the percentage increase of net-migrants in the period of 1966-71 to 1976-81 of NCP was considerably higher than Colombo Region. The main

reason for this attraction was the Mahaweli program.

Migrant turnover, which is the sum of in-migrants and out-migrants measured by using both lifetime and recent migration (1976-81), was twice as high in Colombo Region than in NCP. However, a separate "migration effectiveness ratio" computed for both areas and was greater for NCP. Therefore NCP was found to have been more capable of retaining migrants than Colombo Region. However in absolute terms Colombo Region's net-gain (1976-81) was more voluminous than that of the former. The question remains as to which area was the most attractive to migrants.

The highest proportion of in-migrants in both periods (1966-71, 1976-81) to NCP originated from Central Province, an area where the limited availability of land for peasant agriculture operates as a factor promoting out-migration. A majority of Colombo Region's in-migrants originated from Southern, Central and Sabaragamuwa Provinces. Population transfers between the two most popular migration destinations of the country, NCP and Colombo Region, showed a net gain to the former for both periods under examination.

In- and out-migration trends in 1976-81 of NCP and Colombo Region indicated that the highest concentration of movers was in the year immediately preceding the 1981 census. Another important finding of the study is a significantly higher number of lifetime return migrants in Colombo Region than NCP. However these two findings should not be given too much weight because of the possibility of errors in the data.

The study indicated a strong relationship between migration and socio-economic characteristics such as age, sex, marital status, education and labour force participation. The census data make possible an analysis of the characteristics of the migrants only after migration takes place, therefore the analysis of the characteristics of migrants (1976-81) and differences with non-migrants was limited to the place of destination.

A majority of the in-migrants of NCP and Colombo Region were males and concentrated in the working age groups. A higher proportion of children in the migration stream to NCP indicates the movement of families to that province where land settlement and colonization programs were more common.

A majority of male in-migrants of NCP and Colombo Region (15 years of age and over) were never married while among in-migrant females this was true only in Colombo Region. The main conclusion of the marital status analysis was that marriage occurs earlier in NCP than in Colombo Region, and also the female in-migrants of NCP were more likely to be married than were the non-movers. The study indicates that higher levels of education were associated with migration in both NCP and Colombo Region.

Higher proportions of in-migrants to NCP and Colombo Region of both sexes (except females in NCP) were found to be employed compared with the non-movers. In general, crude and standardized labour force participation rates were also higher among the in-migrants. Crude activity rates of younger age groups (15-29) of NCP and Colombo Region clearly indicate this difference.

Higher unemployment rates for both sexes of in-migrants in NCP may have some relationship with the increasing trend of out-migration from the province. Since unemployment was higher among the in-migrants in NCP, expected future movers to the province may also have more difficulty in finding employment there. This situation may lead to heavy out-migration from NCP in future and therefore could destroy the main efforts of the Mahaweli program.

It is interesting to note the significantly higher contribution of migrants to the future population of NCP. The expected future population growth rate of NCP is expected to decline over time, however the absolute numbers would double just before the next 20-year period. Within the projection period of 1981-2001, the labour force of the province is expected to increase at a faster rate than the total population because of the age structure of the net-migrants.

In summary, the two leading development programs of the country, the Mahaweli and the GCEC, appear to have had significant impacts on population redistribution. But it is evident that the current population redistribution patterns are not sufficient to achieve at least a moderately even distribution of Sri Lanka's population in the foreseeable future. Population redistribution policies and national development policies should be integrated towards such an effort in the initial stages of planning. Nevertheless such policies will not be easy to formulate without in-depth information on the determinants and consequences of migration with special reference to its economic aspects.

6.3 Some Suggestions for Further Research

The interrelationships between national development programs and migration are complex. The present study attempted to examine these relationships, but was handicapped by inadequate data from population censuses and other sources. However further in-depth research should be carried out on the relation between national development programs and population redistribution because the leading development programs are large enough to redistribute Sri Lanka's population. The question remains, however, as to whether or not this redistribution will be in the appropriate directions.

The Mahaweli area (NCP) will be important because in the recent past the estimated out-migration trends from this region have increased considerably. The factors responsible for this out-migration could be determined through in-depth studies. This will be important for policy makers because the government had attempted to retain peasants in rural areas through regional development programs such as the Mahaweli. Data collection for such studies should not be restricted to the migration destination areas but also should include the non-migrants at major areas of origin and destination. In terms of methodology, a combination of participant observation and semi-structured interviews would be valuable.

In all there are many topics to study regarding internal migration and redistribution in Sri Lanka:

(1) Migration trends and patterns (rural-rural, rural-urban, and urban-rural) with special reference to their determinants and consequences.
(2) Contribution of urban-rural migration in relation to recent declines in urbanization in Sri Lanka.
(3) Internal migration and rural development in Sri Lanka.
(4) Migration decision making.

These research aspects of internal migration and redistribution should be analysed using sample surveys to supplement census-based information. Such surveys can collect more in-depth information and also try to assess those types of movements that are not captured by the population censuses. However census information on internal migration should be utilized because it provides a better framework for in-depth analysis and also provides the total national picture to explain understand the directions of internal migration and redistribution.

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APPENDIX A.1

NET INTERNAL MIGRATION BY DISTRICT * (1971-81)

District	1971 Population (P_o)	1981 Enumerated Population (P_1)	Mid year population $\frac{P_o + P_1}{2}$	Net-migration (1971-1981) $P_1 - (P_o + B-D)$	Rate of Net Migration %
Colombo	2,672,265	3,087,812	2,880,039	- 51,694	- 1.8
Kalutara	729,514	827,189	778,352	- 32,913	- 4.2
Kandy	1,096,737	1,126,296	1,111,517	-196,166	-17.6
Matale	314,841	357,441	33,141	- 31,617	- 9.4
Nuwara Eliya	450,278	522,219	486,249	- 4,662	- 1.0
Galle	735,173	814,579	774,876	- 46,492	- 6.0
Matara	586,443	644,231	615,337	- 69,000	-11.2
Hambantota	340,254	424,102	382,178	+ 608	+ 0.2
Jaffna	701,603	838,409	770,006	- 30,376	- 3.9
Mannar	77,780	112,593	95,187	+ 11,138	+11.7
Vavuniya	95,243	160,466	127,855	+ 32,187	+25.2
Batticaloa	256,721	330,899	293,810	- 5,618	- 1.9
Amparai	272,605	388,786	330,696	+ 48,854	+14.8
Trincomalee	188,245	256,790	222,518	+ 2,249	+ 1.0
Kurunegala	1,025,633	1,212,755	1,119,194	- 24,317	- 2.2
Puttalam	378,430	493,344	435,887	+ 13,346	+ 3.1
Anuradhapura	388,770	587,822	488,296	+ 70,223	+14.4
Polonnaruwa	163,653	262,753	213,203	+ 52,762	+24.7
Badulla	615,405	642,893	629,149	- 100,508	-16.0
Moneragala	193,020	279,743	236,382	+ 20,457	+ 8.7
Ratnapura	661,344	796,468	728,906	- 20,599	- 2.8
Kegalle	654,752	682,411	668,582	- 76,464	-11.4

Note : * Figures are given according to the district boundaries before the delimination in 1978

Source: Department of Census and Statistics, (1983a: 43).

APPENDIX A.2

GROWTH OF URBAN AREAS AND URBAN POPULATION IN SRI LANKA 1871 - 1981

Year	Number of Municipal Councils	Number of Urban Councils	Number of Local Boards	Number of Town Councils	Total Urban Places	Total Population	Urban Population	Percentage Urban	Intercensal Percentage Increase	
									Total Population	Urban Population
1871	7	12	-	-	19	2,400,380	260,376	10.3	-	-
1881	7	13	-	-	20	2,759,738	281,065	10.2	1.42	0.78
1891	7	13	-	-	20	3,007,789	321,413	10.7	0.86	1.35
1901	7	20	1	-	28	3,565,954	414,025	11.6	1.72	2.56
1911	7	29	1	-	37	4,106,350	542,945	13.2	1.42	2.74
1921	7	34	1	-	42	4,498,605	637,870	14.2	0.91	1.62
1931	7	34	1	-	42	5,306,871	737,272	13.9	1.68	1.47
1946	7	34	1	-	42	6,657,339	1,023,042	15.4	1.52	2.20
1953	7	36	-	-	43	8,097,895	1,239,133	15.3	2.84	2.77
1963	12	36	-	51	99	10,582,064	2,016,285	19.1	2.65	4.88
1971	12	38	-	85	135	12,689,897	2,848,116	22.4	2.20	4.23
1981	12	39	-	83	134	14,850,001	3,194,879	21.5	1.70	1.20

Source: Ministry of Plan Implementation (1982a:22)

APPENDIX A.3

POPULATION, GROWTH AND DENSITY OF SRI LANKA BY AREA, 1981

Area	Total Population Enumerated (1981)	Population % (1981)	Annual Rate of Population Growth (%) (1971-81)	Land Area (excluding inland waters) Sq.km.	Land area %	Density of population per sq.km. 1981
Colombo Region	3,087,812	20.8	1.5	2052	3.2	1505
Colombo District	1,698,322	11.4	1.3	653	1.0	2601
Gampaha District	1,389,490	9.4	1.8	1399	2.2	993
Western Province	827,189	5.6	1.3	1607	2.5	515
Kalutara District	827,189	5.6	1.3	1607	2.5	515
Central Province	2,005,956	13.5	0.3	5590	8.6	359
Kandy District	1,126,296	7.6	0.3	2158	3.3	522
Matale District	357,441	2.4	1.3	1995	3.1	179
Nuwara Eliya District	522,219	3.5	- 0.4	1437	2.2	363
Southern Province	1,882,912	12.7	1.3	5512	8.5	342
Galle District	814,579	5.5	1.1	1673	2.6	487
Matara District	644,231	4.3	1.0	1246	1.9	517
Hambantota District	424,102	2.9	2.3	2593	4.0	163
Northern Province	1,111,468	7.5	2.5	8690	13.4	128
Jaffna District	831,112	5.6	1.9	2072	3.2	401
Mannar District	106,940	0.7	3.9	2001	3.1	53
Vavuniya District	95,904	0.6	4.9	2645	4.1	36
Mullaitivu District	77,512	0.5	6.1	1972	3.0	39
Eastern Province	976,475	6.6	3.3	9620	14.9	101
Batticaloa District	330,899	2.2	2.7	2463	3.8	134
Amparai District	388,786	2.6	3.8	4539	7.0	86
Trincomalee District	256,790	1.7	3.3	2618	4.1	98
North Western Province	1,706,099	11.5	2.1	7750	12.0	220
Kurunegala District	1,212,755	8.2	1.8	4773	7.4	254
Puttalam District	493,344	3.3	2.8	2977	4.6	166
North Central Province	850,575	5.7	4.6	10533	16.3	81
Anuradhapura District	587,822	4.0	4.4	7129	11.0	82
Polonnaruwa District	262,753	1.8	5.0	3404	5.3	77
Uva Province	922,636	6.2	1.4	8399	13.0	110
Badulla District	642,893	4.3	0.5	2818	4.4	228
Moneragala District	279,743	1.9	3.9	5581	8.6	50
Sabaragamuwa Province	1,478,879	9.9	1.2	4902	7.6	302
Ratnapura District	796,468	5.4	1.8	3239	5.0	246
Kegalle District	682,411	4.6	0.6	1663	2.6	410
Sri Lanka	14,850,001	100.0	1.7	64,655	100.0	230

Note: Population growth refer to exponential tate.

Source: Calculated by using census publications of 1981, and statistical pocketbook 1982.

APPENDIX A.4

QUESTIONS ON INTERNAL MIGRATION - EXTRACTED FROM 1981 POPULATION AND HOUSING SCHEDULE (SAMPLE)

P 24—PLACE OF BIRTH	91—Born in this Dist.
91—Born in this district If any other place then state the District/Country and enter its code.	..... District/country.

P 25—PLACE OF USUAL RESIDENCE	91—This T/V. 92—This Dist.
91—This Town/Village 92—Outside this Town/Village but within the district If another district/country state the district/country and enter its code.	..... District/country.

P 26—PERIOD OF STAY IN THE TOWN OR VILLAGE OF USUAL RESIDENCE	91—Since birth (End interview)
Enter the number of years ignoring fractions. If less than one year enter '00', If living since birth circle 91 and end interview	Years go to P27.

P 27—DISTRICT OF PREVIOUS RESIDENCE	91—Same District.
(Immediately before coming to live in this Town/Village) If previous residence was also in the same district circle 91, Otherwise write the district/country and enter its code.	..... District/Country.

Source: Population and Housing Schedule (Sample), Form F 10.

APPENDIX A.5

SAMPLING VARIABILITY OF THE RECENT MIGRANTS (1976-81) IN THE 10 PERCENT SAMPLE OF THE 1981 CENSUS OF SRI LANKA

District	Resident Population 1981	Recent Migrants (1976-81)	p	q	Standard Error (S.E.$_p$)	Confidence Limits of p
Colombo	157,823	11,137	7.06	92.94	0.0645	6.93 - 7.19
Gampaha	126,680	8,156	6.44	93.56	0.0690	6.30 - 6.57
Kalutara	79,419	3,365	4.24	95.76	0.0715	4.10 - 4.38
Kandy	102,886	2,940	2.86	97.14	0.0520	2.76 - 2.96
Matale	32,327	1,466	4.53	95.47	0.1157	4.30 - 4.76
Nuwara Eliya	44,029	2,203	5.00	95.00	0.1039	4.80 - 5.20
Galle	74,490	1,611	2.16	97.84	0.0533	2.06 - 2.26
Matara	60,468	1,387	2.29	97.71	0.0608	2.17 - 2.41
Hambantota	40,932	1,554	3.80	96.20	0.0945	3.61 - 3.98
Jaffna	80,203	1,520	1.90	98.10	0.0482	1.80 - 1.99
Mannar	9,966	1,268	12.72	87.28	0.3338	12.07 - 13.37
Vavuniya	8,898	1,490	16.74	83.26	0.3958	15.96 - 17.52
Mullaitivu	7,484	1,515	20.24	79.76	0.4645	19.33 - 21.15
Batticaloa	32,386	887	2.74	97.26	0.0907	2.56 - 2.92
Amparai	37,642	1,398	3.71	96.29	0.0974	3.52 - 3.90
Trincomalee	23,275	1,414	6.07	93.93	0.1565	5.76 - 6.38
Kurunegala	113,643	3,765	3.31	96.69	0.0531	3.21 - 3.41
Puttalam	44,875	2,420	5.39	94.61	0.1066	5.18 - 5.60
Anuradhapura	51,201	5,182	10.12	89.88	0.1333	9.86 - 10.38
Polonnaruwa	23,404	3,373	14.41	85.59	0.2296	13.96 - 14.86
Badulla	56,328	1,659	2.94	97.06	0.0712	2.80 - 3.08
Moneragala	26,771	2,425	9.06	90.94	0.1754	8.72 - 9.40
Ratnapura	75,287	2,651	3.52	96.48	0.0672	3.39 - 3.65
Kegalle	64,900	1,411	2.17	97.83	0.0572	2.06 - 2.28
Total	1,375,317	66,197	4.81	95.19	0.0182	4.77 - 4.85

Note : p = Percentage of Migrants
q = (100 - p)
Standard error (S.E.$_p$) = $\sqrt{\frac{p\ (100 - p)}{n-1}}$
The 95% confidence limits = $P \pm 1.96$ S.E.$_p$
Source: Derived from 10 percent sample tapes of 1981 census.

APPENDIX B.1

AGE STRUCTURE OF MIGRANTS, NON-MIGRANTS (1976-81) OF NCP AND COLOMBO REGION AND TOTAL POPULATION OF SRI LANKA

	North Central Province						Colombo Region						Sri Lanka
Age	In-migrants	%	Out-migrants	%	Non-migrants	%	In-migrants	%	Out-migrants	%	Non-migrants	%	Population 1981
MALE													
0-4	308	3.7	130	4.9	5228	8.1	331	2.1	425	4.8	14,084	5.5	6.4
5-9	264	3.2	164	6.2	4522	7.0	349	2.3	443	5.0	13,731	5.4	5.8
10-14	361	4.3	199	7.6	4091	6.3	708	4.6	453	5.1	13,909	5.5	5.8
15-19	739	8.8	164	6.2	3704	5.7	1260	8.2	566	6.3	13,700	5.4	5.5
20-24	1040	12.4	157	6.0	3332	5.2	1942	12.6	641	7.2	12,724	5.0	5.1
25-29	862	10.3	154	5.9	2861	4.4	1527	9.9	658	7.4	11,014	4.4	4.3
30-34	569	6.8	123	4.7	2356	3.7	996	6.5	537	6.0	10,184	4.0	3.8
35-39	358	4.3	85	3.2	1514	2.3	583	3.8	384	4.3	7,731	3.0	2.8
40-44	263	3.1	71	2.7	1394	2.2	387	2.5	257	2.9	6,710	2.6	2.4
45-49	199	2.4	50	1.9	1,200	1.9	242	1.6	192	2.1	5,646	2.2	2.1
50-54	132	1.6	22	0.8	1,085	1.7	187	1.2	162	1.8	5,395	2.1	1.9
55-59	102	1.2	27	1.0	810	1.3	139	0.9	126	1.4	4,436	1.7	1.5
60-64	85	1.0	8	0.3	613	0.9	123	0.8	116	1.3	3,631	1.4	1.2
65+	106	1.3	19	0.7	1,027	1.6	164	1.1	154	1.7	6,691	2.6	2.3
FEMALES													
0-4	314	3.8	140	5.3	5,207	8.1	301	1.9	417	4.7	13,537	5.3	6.1
5-9	276	3.3	177	6.7	4,222	6.5	343	2.2	413	4.6	13,029	5.1	5.6
10-14	234	2.8	152	5.8	3,818	5.9	540	3.5	396	4.4	13,624	5.4	5.6
15-19	370	4.4	182	6.9	3,580	5.5	888	5.8	355	4.0	13,207	5.2	5.3
20-24	563	6.7	201	7.6	3,198	5.0	1,382	9.0	493	5.5	12,017	4.7	5.1
25-29	434	5.2	143	5.4	2,645	4.1	1,102	7.1	543	6.1	10,288	4.2	4.3
30-34	276	3.3	99	3.8	2,012	3.1	668	4.3	416	4.7	9,763	3.9	3.7
35-39	140	1.7	60	2.3	1,450	2.2	324	2.1	247	2.8	7,532	3.0	2.8
40-44	88	1.0	33	1.3	1,212	1.9	204	1.3	137	1.5	6,111	2.4	2.3
45-49	70	0.8	21	0.8	1,129	1.7	145	0.9	92	1.0	5,532	2.2	2.0
50-54	63	0.8	19	0.7	801	1.2	163	1.1	98	1.1	5,193	2.0	1.7
55-59	37	0.4	11	0.4	537	0.8	116	0.7	59	0.7	4,238	1.7	1.4
60-64	33	0.4	7	0.3	363	0.6	101	0.6	43	0.5	3,432	1.3	1.1
65+	72	0.9	13	0.5	649	1.0	210	1.4	104	1.2	6,748	2.7	2.0
Total	8,358	100.0	2,631	100.0	64,562	100.0	15,425	100.0	8,927	100.0	253,842	100.0	100.0
I_D		24.6		13.6		7.2		27.4		13.4		3.9	

Note : I_D = Index of Dissimilarity.

Source: Derived from 10 percent sample tapes of 1981 census.

APPENDIX B.2

PROPORTION OF NEVER MARRIED OF IN-MIGRANTS AND NON-MIGRANTS OF NCP AND COLOMBO REGION BY AGE AND SEX, 1976-81

Age	North Central Province				Colombo Region			
	In-Migrants		Non-Migrants		In-Migrants		Non-Migrants	
	M	F	M	F	M	F	M	F
15-19	.991	.658	.990	.847	.993	.886	.991	.928
20-24	.840	.302	.763	.393	.920	.658	.869	.633
25-29	.599	.214	.334	.159	.720	.463	.584	.369
30-34	.339	.141	.158	.073	.361	.280	.310	.183
35-39	.168	.071	.088	.032	.201	.241	.159	.104
40-44	.137	.068	.066	.020	.176	.162	.109	.075
45-49	.075	.014	.045	.014	.145	.076	.091	.060
15-49	.602	.290	.478	.325	.680	.535	.542	.419
Number	4030	1941	16361	15226	6937	4713	67709	64450

Source: Derived from 10 percent sample tapes of 1981 census.

APPENDIX C.1

ASSUMPTIONS USED FOR PROJECTION OF POPULATION OF NCP, 1981-2001

Components	Period 1981-86	1986-91	1991-96	1996-2001
Total Fertility rate	3.9	3.7	3.4	3.1
Expectation of Life at Birth				
Female	69.1	70.7	71.6	72.4
Male	65.7	68.2	69.0	69.6
Net-migrants for Five Year Periods (in thousands)				
Female	19.5	27.5	37.5	47.0
Male	42.5	52.0	66.5	78.5

Note: Ten percent sample estimates of net-migrants of NCP of 1976-81 inflated to total population.
Coale and Demeny west model life tables were used.

APPENDIX C.2

FERTILITY AND MORTALITY INDICATORS OF NCP

Year	Crude Birth Rate	Total Fertility Rate	Infant Mortality Rate	Crude Death Rate	Expectation of Life at Birth Male	Female
1971	34.0	5.2	37.6	5.5	65.7	68.7
1972	35.8		35.4	5.5		
1973	34.2		33.7	5.6		
1974	33.8		33.5	5.7		
1975	34.6		34.6	6.5		
1976	35.4		32.8	5.9		
1977	35.9		33.7	6.4		
1978	37.2		21.2	5.4		
1979	37.2		20.2	5.4		
1980	37.6			4.9		
1981	36.2	4.1*		4.8	66.5	69.9

Note: * Estimated by using 1981 total births and female population in age groups 15-19 to 45-49, distribute the total births of 1981 among female age groups using the pattern observed in 1971.

Source: Derived from reports of census and statistics and vital statistics.

APPENDIX C.3

DISTRIBUTION OF NET-MIGRANTS BY AGE, 1976-81, AND LABOUR FORCE PARTICIPATION RATES OF NCP, 1981

	Age structure of Net-migrants (%)		Labour Force Participation (%)	
Age	Male	Female	Male	Female
0-4	4.4	10.2		
5-9	2.5	5.8		
10-14	4.0	4.8	4.8	1.4
15-19	14.3	11.0	45.3	12.5
20-24	22.0	21.1	83.1	24.5
25-29	17.6	17.0	93.1	26.0
30-34	11.2	10.3	96.5	25.8
35-39	6.8	4.7	96.9	25.2
40-44	4.8	3.2	96.5	25.9
45-49	3.7	2.9	95.2	27.9
50-54	2.7	2.6	94.4	26.8
55-59	1.9	1.5	88.6	23.3
60-64	1.9	1.5	80.6	17.4
65+	2.2	3.4	59.3	11.8
Total	100.0	100.0		

Note: Labour force participation rates derived from total population of NCP of Sri Lanka.

Source: Derived from 10 percent sample tapes of 1981 Census.

APPENDIX C.4

POPULATION PROJECTION OF NCP, 1981-2001
(Mid year population in thousands)

AGE	1981	1986	1991	1996	2001
			FEMALES		
0-4	63.5	67.2	79.0	87.4	94.9
5-9	51.7	64.7	69.1	81.7	90.9
10-14	46.3	52.6	66.0	70.9	84.1
15-19	46.3	47.7	54.6	68.8	74.5
20-24	44.7	49.2	51.9	60.4	76.1
25-29	36.1	48.1	54.2	58.8	69.1
30-34	26.7	38.5	51.5	58.9	64.9
35-39	18.0	27.9	40.2	54.0	62.0
40-44	15.3	18.5	28.7	41.3	55.3
45-49	13.7	15.6	19.1	29.3	42.1
50-54	10.2	13.9	16.0	19.6	30.0
55-59	6.7	10.2	13.9	16.1	19.9
60-64	4.7	6.6	10.0	13.6	16.0
65-69	3.5	4.7	6.6	9.9	13.5
70-74	2.5	3.2	4.4	6.2	9.2
75+	2.5	3.1	4.0	5.3	7.4
Total	392.4	471.7	569.0	682.4	809.7
			MALES		
AGE	1981	1986	1991	1996	2001
0-4	64.1	70.0	82.1	90.7	98.2
5-9	54.8	65.1	71.4	84.0	93.0
10-14	51.5	56.0	66.6	73.3	86.3
15-19	53.8	55.1	60.5	72.4	80.2
20-24	54.3	61.0	64.1	72.2	86.2
25-29	46.3	62.1	70.8	76.8	87.2
30-34	36.0	51.9	69.1	79.8	87.6
35-39	22.9	39.4	56.1	74.4	86.2
40-44	19.7	25.0	41.8	59.2	78.1
45-49	16.8	21.0	26.6	43.8	61.4
50-54	14.5	17.5	21.9	27.9	44.9
55-59	10.8	14.6	17.7	22.3	28.3
60-64	8.4	10.6	14.3	17.5	22.0
65-69	5.6	8.1	10.2	13.8	16.9
70-74	4.2	4.9	7.0	8.9	12.0
75+	3.7	4.6	5.6	7.6	9.9
Total	467.4	567.0	685.9	824.5	978.2
G. Total	859.8	1038.7	1255.0	1507.0	1787.9

Note: FIVFIV/SINSIN computer program was used to project the population. Assumptions used in the projection were fertility, mortality and net-migration.