KENYA'S POPULATION PROJECTIONS AND SOME OF THEIR IMPLICATIONS TO EDUCATION PLANNING.

BY

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DECLARATION

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

JOHN MAFUMBO WEKESA ______________________

This thesis has been submitted for examination with my approval as University supervisor.

Signed ______________________ 11/3/93
DR. ZIBEON S. MUGANZI DATE

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However for practical, personal and intellectual assistance I feel highly indebted to my supervisor: Dr. Muganzi, whose invaluable support steered this work to its final successful completion.

DEDICATION

This work is dedicated to my mother Jones Nakhanu Wamusolo and my wife Evaline Cheptoo Wekesa, for their tireless encouragement that bolstered my industry to convert this work into what it is.

ABSTRACT

Since this is a macro - level analysis, only fertility and mortality schedules are considered. This is because the contribution of the emigrants and immigrants to the National school enrolments is negligible. Mortality situations are determined by the four parameter logit system. The whole population and the school age population are projected, in five year - intervals, from the 1969 and 1979 Census data. Estimated Intake rates are used to provide information on school enrolments. Cohort analysis highlights the enrolment trends from as far back as the period 1963, to the 1980's. Policy implications of the envisaged school enrolments to the education planners are considered.

The results show that under the assumption of declining mortality and fertility, we would have 2 million school going boys from a male population of 8 million in 1979; 2.9 million boys in school from 9.5 million male population in 1984; 11.6 million male population would give 3.5 million boys in school in 1989; 14 million males would give rise to 4.2 million boys in school in 1994; 5.6 million school going boys from 18 million male population in 1999; while there would be 7.3 million boys in school from a male population of 20 million by the year 2004. There is generally gradual increase of both boys and girls in secondary school. A similar trend is followed for girls in

these conditions of mortality and fertility; and the same would be said of the estimates of the boys and girls under the other two conditions of mortality and fertility where a generally rapid rise is envisaged.

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CHAPTER ONE

GENERAL INTRODUCTION

Kenya's annual population growth rate of 4.1 per cent is reputed to be the highest in the world. The Kenya contraceptive survey of 1984 has also indicated that although knowledge of at least one method of contraception among women in Kenya(81 per cent among those interviewed) is high, full acceptance and use is low (19 per cent among women interviewed were using contraceptives) (KCPS, 1984).

This explains why average total fertility rate is very high (TFR =7.7) (KCPS 1984)

On the other hand, mortality has continued to decline. The crude death rate of 17 (1969 census) has continued to decrease to 14 (1979 census) and it is currently estimated at 12. The infant mortality has shown considerable decline in nearly all the regions in kenya. The lowest recorded value of infant mortality is in Nyeri district (49 per 1000 live births). The decline in mortality is due to highly improved medical technology, nutrition and reduced level of illiteracy among women.

The implication of the sustained high levels of fertility and declining mortality is that a youthful society continues to emerge. It is estimated that 51 per cent of Kenya's population is below 15 years of age (CBS, 1979).

School enrolments are a major input in the education system. This study therefore has set out to provide information concerning the level of past. present and future enrolments vis - a - vis the components of population dynamics.

We believe that over-enrolment may be a salient feature of some Kenya's primary schools. This would then lead to high drop-outs. In times when there is an indication of lessening the burden of financial support from the parents through either presidential decrees or government policies, school enrolments become extremely high. But the numbers should go down as soon as building funds or other levies are increasingly imposed on parents. Policy implications generally involve the provision of more basic needs such as teachers in training colleges, teachers in service, more schools and equipment.

It is likely that the contribution of mortality, fertility and migration schedules to the population that requires to go to school will continue to be felt among future generations.

1.1 STATEMENT OF THE PROBLEM

It is hoped that this study will show how the successive increase in the estimates of the whole population may lead to an upsurge in the estimates of the school going population.

Educational planning in Kenya is currently receiving a lot of attention from mathematical statisticians, educational scholars, planners and administrators, and very recently demographers. The mathematical statisticians use a stochastic approach: the education scholars, planners and administrators are mainly concerned with the cause - effect approach and the demographers use the deterministic approach with a lot of emphasis on the contribution of different schedules of fertility, mortality and migration. In all these cases information is sought on the past, current and future trends of school age population, the proportion of the school going age population, the requirements such as facilities, teachers, manpower et cetera. Since sufficient data is not available on future estimates of school going population, this study could very well be a step towards achieving this goal.

1.2 OBJECTIVES OF THE STUDY

(i) General Objectives: To assess the past and current situations of enrolment in schools; to envisage the future state of enrolment; and to analyse the implications of the population projections to education planning..

(ii) Specific Objectives:

a) To project the whole population, the school age population and the school going population by sex.

b) To examine past and current school enrolment trends in Kenya.

c) To assess primary school most current wastage through drop-outs and repeaters in Kenya.

1.3 RATIONALE FOR THE STUDY

The knowledge of the estimates of the future school going children which is currently lacking, will lead to education planners to be better prepared to meet the challenges that may emanate from the likely soaring numbers of school children. The education planners may then formulate policies and resource allocation programme that will ensure optimum services such as teachers in service, teacher trainees, the number of schools, workshops and other basic facilities.

1.4 LITERATURE REVIEW

UNESCO (1981) did an in- depth study on estimation of enrolment, repetition and drop-outs in Latin America but its emphasis is on analysis aimed at showing that repetition in the region may have been substantially higher than implied by the data on repetition shown in official publications. The present study lays its emphasis on the estimation of school enrolments.

Jones (1975) analysizes the effect of alternative population trends on educational requirements. He discusses the enrolment rate approach and the cohort approach. These are methods also adopted in this study, but his examples involve either the whole of the developing countries or a hypothetical country which is developing. In a further contribution, he discusses the relationship between the projected growth of total and school- age populations, methods of projecting school enrolments. primary school enrolment projections. secondary school enrolments. teacher requirements but based on data from Sri Lanka. The present study uses some of the methods on projections but its focus is on Kenya's schools.

Masaviru (1981) in her thesis also examines the projected school age and school going population vis-a-vis provision and distribution of education facilities. Her emphasis is on provision of school facilities in Nairobi primary schools only.

Odhiambo and Owino (1985) in their papers describe a Markov chain transition model for estimating school staying ratios, the drop-out and completion ratios. the expected length of schooling, the survival time and the cost of educating an individual up to completion.

In another contribution Odhiambo and Khogali (1984) discuss a transition model which describes the stocks and flows of students through an education system in terms of transition ratios. In both papers the authors use a stochastic transition model. The present study is different from the papers in the sense that it uses a deterministic approach in its methodology.

Henin(1980) provides information on school population of two categories, namely, 6-12 years and 13-16 years. He projects school population from 1969 to 1989. He admits as follows: "...we need to add that these figures are not enough by themselves for the purpose of providing an educational plan for a province. Other data are needed, namely enrolment and drop-out rates as well as teacher - student ratios to calculate the required number of classes as well as the required number of teachers..."Henin (1980. p. 44).

The present study is markedly different from Henin's work in that it is required to project school enrolments besides the projected values of school age population. Furthermore. wastages through repetition and drop-outs are given a lot of attention in the present work.

The World Bank(1979) illustrates the implications of alternative rates of population growth on the government efforts by estimating the savings likely to result from reduced fertility levels and smaller numbers of children of school age. This is done for primary and secondary cohorts based on three population projections. Projections are dealt with for primary and secondary population in aggregate forms without specific reference to the numbers regarding males and females separately. Analysis of wastage is not given a lot of attention. The present work is therefore different from the one of the World Bank in so far as the detailed analysis of wastage and the specific information attributed to gender so as to help the education planners to make firm and specific decisions regading the .sex, age and various grade levels. Furthermore the University education is not covered in the work attributed to the World Bank.

Annual Reports (1964-84). give detailed information regarding school enrolment by standard. sex. district and Province. Work on repeaters for each year is also seen to have been done. From the numbers regarding enrolments and repeaters, it is possible to derive the drop-outs for each year. It is also possible to use such information to compute those promoted from one class to another. Besides the computation on drop-outs and promotions from one class to another which is lacking in the annual reports. it is also evident that projections of school enrolments were not done. It is then logical to infer that demographic factors are not given emphasis in the studies carried out by the Ministry of Education. The present study on the contrary, relies heavily on population dynamics (fertility, mortality and migration) as a net source of school age population.

To supplement information obtainable from the Annual Reports, Statistical Abstracts (1963-86) give information on enrolments at the National Universities(Nairobi, Kenyatta and in the latest abstracts there is data on Moi). The salient feature of the abstracts is that data on population by sex, age and education by Province is given. However, population dynamics is not given emphasis.

The Development Plans (1974/78, 1979/83/ 1984/88), give enrolments at all levels, but specific enrolments for each district or province are not given.Wastages are not dealt with.

The CBS(1973-77 Monograph) undertakes an in-depth analysis. It is observed that in the main, standard one enrolments increased in 1974 in all districts but that except for Narok, there was a decrease in standard one enrolments in subsequent years. Wastages were tackled but the present work covers a wider span(1964-84) and projections are dealt with.

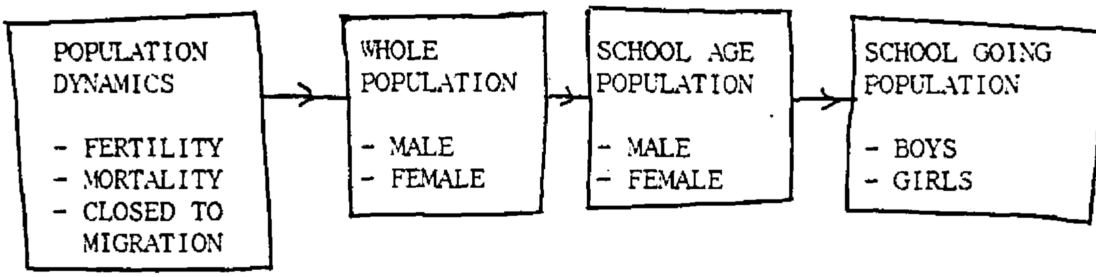
Munoru (1987) in her project for a Post Graduate Diploma in Population Studies set out to examine standard one enrolment patterns and to compare the enrolment by age with the projected school age going population. She also analysed the repetition, promotion and drop - outs through standard one. She used six districts to achieve her objectives: these were Nairobi, Nyeri, Taita - Taveta, Siaya, Elgeyo - Marakwet, and Wajir. Enrolment patterns were achieved by using histograms. Ratios were used to indicate the proportions of the whole. Interpolation was used to obtain projected population by individual ages. Projections computed by the Central Bureau of Statistics for the year 1980 to the year 2000 were used.

Her findings were that in the six districts studied, there was over -enrolment in 1974 for especially standard one to four enrolment but there was a sudden fall in enrolment thereafter. Nairobi was not affected by the over enrolment. In 1978, over - enrolment also occurred due to the introduction of the milk scheme.

Munoru's work is similar to the present study because it considers enrolments vis-a-vis the school age population and the attrition levels. But her work is considered not representative enough as proper sampling of the 41 districts would require a minimum of 10 districts which is roughly one quarter of the total number of districts. She had only six districts. The socio-economic and socio - cultural set up of the forty one districts are so different that inference on one district may not necessarily hold true for the others. This is the reason why the present study covers all the forty one districts, especially the analysis of some of the attrition levels.

1.5 THEORETICAL FRAMEWORK

It is evident that the interplay among the three components of population dynamics affect the outcome of the population estimates in a country. Migration is usually ignored at an international level unless there is a severe case of refugees or other catastrophic movements into or out of a country. In Kenya, there has not been any evidence of mass movement of her people either into or out of the country. It is in this context that the present study is based on the fact that the influence of mortality and fertility in particular, will give rise to a whole population, from which we shall get the school age population. Finally, we then get the school going population in aggregate values. A schematic representation is show below.



The school going population in grade progression is only analysed through the cohort approach; otherwise the population estimates are entirely in aggregate forms.

1.6 CONCEPTUAL HYPOTHESES

The theoretical framework is built upon the following hypotheses:

(a) Changes in population dynamics (fertility and mortality in our study) may affect the population.

(b) The successive increase in the population estimates by sex are likely to lead to an upsurge in the estimates of school going population by sex.

1.7 DEFINITION OF VARIABLES

Drop-out Rate - is considered as the percentage of drop-outs at a specified point or level adjusted for repeaters and transfers where known. The drop-out rate for each grade, type of school and region is calculated by dividing the number of drop-outs by the number of enrolments and multiplied by 100.

Educational wastage - is the incidence in a country's educational system, from the point of view of efficiency of factors such as premature school leaving and retardation or repetition. For ease of analysis, it may require to concentrate on repetition of grades or withdrawal from the school system before completion of any of the terminal levels of education.

Intake or Entry Rate - is to be treated as the proportion of children reaching the official admission age who are actually admitted to school.

Cohort Intake Rate - is the proportion of the same cohort who sooner or later are admitted to school.

Projection- a set of alternative estimates that rest on alternative assumptions about how a current population will change.

Forecast - It is a projection which is accompanied by an indication of accuracy.

Prediction -population projections are correct by definition (except. for computation errors. because they indicate the population that would result if the base data population is correct and if the underlying assumptions (guiding the projections) should turn out to be correct. If future population could be determined with negligble error, then only one projection would be necessary.

School- Age Population - is the total number of persons within certain age groups who are either required by law or are eligible to attend schools at a certain level.

School Enrolment- a child's name is entered or remain on the rolls or register of a school as a pupil.

Attendace Ratio - is the proportion of children in a given age. group who are attending school at a given time.

An Age Group -may refer to all persons at the same single year of age, such as the seven year olds, or it may refer to all persons included within specified age limits such as from 10 to 15. The latter case is written 10-14 age -group.

Cohort- It is a group of persons experiencing a certain event in a specified period of time.

Pupil- Teacher Ratio- is obtained by dividing the total pupil enrolment at a specified school level by the number of teachers at that school level. The ratio expresses the average number of pupils enrolled per teacher in service. This should not be confused with size of class taught by one teacher- the latter is higher than the former because the part - time teachers, heads of schools. Principals of colleges, who do not teach classes are usually included in the number of teachers in service.

Rates- may be considered as a measure of incidence of events among the age-sex projections or some grouping of it.

Ratio- is a measure of prevalence of some status among the age- sex projection or some grouping of it.

Proportions- is a measure of composition of the age- sex projections or some grouping of it.

1.8 OPERATIONAL HYPOTHESES

a) The number of births and deaths in the population are likely to affect the successive estimates of the population by sex.

b) The estimates of the population by sex are likely to affect the estimates of the school going population.

1.9 METHODOLOGY

In an attempt to study Kenya's school projections, a base year is necessary. 1969 and 1979 are preferable as base years because these are the years for which fairly accurate information on Kenya's population levels is available. Aggregate numbers of school age population and school going children will have to be used in order to give an overall picture of the estimated numbers.

It is also evident from past studies that aggregate numbers of children alone may not give clear information to Education Planners and therefore projections pertaining to sex are necessary in this study. Numbers of girls and boys expected to go or actually going to school will have to be projected.

Model life tables are important demographic tools for populations that lack accurate and complete data. In the study of mortality, model life tables provide the basis for indirect techniques to estimate mortality rates from survey data. They are also used for smoothing data from partial registration of deaths and for estimating mortality from age distributions. In the study of fertility, model life tables underlie stable and quasi - stable methods for estimating fertility from age distributions.

In the study of mortality patterns models have been constructed that describe a wide range of age patterns, are easy to apply to partial life tables, and whose parameters describe meaningful characteristics of the mortality pattern, in particular, the wide range of age patterns at the youngest and the oldest ages. In this chapter, we shall use one such model: the four - parameter logit system.

We note that there are three appoaches to the development of model life tables: the analytical, the empirical and the relational. In the analytical approach a mathematical function that fits the life table is sought. Two such functions are those of compertz and Makeham, both of which fit human lifetables well, but only at ages above 30. Heligman and Pollard have developed an eight - parameter model: no simpler version adequately fits human mortality rates over the full range of ages. This therefore makes the analytical approach inappropriate for providing a method of determining the mortality situation which is easy to follow by the Education Planners.

In the empirical approach of the United Nations (Coale and Demeny and Ledermann) the effort to find a functional form was abandoned and an attempt made to present a series of tables that retain the numerical form of the conventional life table. The simplest models are those of the United Nations and Coale and Demeny. By constructing a series of values using regressions which related values of a q (x) for adjacent age groups starting with infant mortality they developed a set of model life tables. Interpolation in the tables makes it possible to produce a life table with any given value of e, or any other measure of mortality, such as the infant rate. Because it is numerical, this approach is cumbersome for computer applications which are necessary in analysing the whole population. Therefore this method is not adopted in this thesis.

The relational approach to model life tables is an attempt is to combine some of the advantages of the other two. The four parameter logit life table is described in chapter 3. The resulting mortality values for the Kenyan data are then combined with fertility schedules to project the whole population and the school age population. The Intake Rates are used to project the school going population. How the rates are used through least squares method is explained in the respective sections as well.

The Spraque method is used to split the five - year age - groups into single years. How this is done is explained in the appendix.

The school enrolment analysis relies heavily on percentages/proportions ralative to the original cohort. The attrition rates also rely on percentages.

The assumptions on the state of mortality and fertility schedules are based on trends as shown below.

TABLE 1.9a: MORTALITY TRENDS

YEAR	LIFE EXPECTANCY AT BIRTH
1948	35
1962	44
1979	54
1986	56

SOURCES: 1. World Bank Document, Population and Development, p.26.

2. CBS, Analytical Report vol.4. 1969

3. United Nations chart, 1985.

Table 1.9a shows the mortality trends for both male and female population. The life expetancy has been rising, implying that over time the mortality has declined. It is on the basis of this trend that we assert the mortality will continue to decline. Since the female life expectancies at birth were 53.7 years and 58 years in 1969 and 1986: the average annual increase in life expectany at birth would be about 0.25 years. Similarly, the life expectancies for males was 50.9 years (CBS, Analytical Report, Population Census vol. 4,1969) in 1969 and 54 years in 1986. This gives an annual increase in life expectany of about 0.18 years. The mortality decline will be assumed to decline by the annual change in life expectany at birth of 0.25 years and 0.18 years for females and males respectively.

TABLE 1.9b: FERTILITY TRENDS

YEAR	TOTAL FERTILTY RATE (TFR)
1946- 1950	6.1
1951- 1955	6.6
1956- 1960	6.6
1961- 1965	7.5
1962	6.8
1966- 1970	7.7
1969	7.6
1971	7.2
1972	7.9
1973	8.0
1977- 1978	8.2
1979	7.89
1984	7.7

SOURCES: 1. Hennin. Alternative Population Projections for Kenya and its Provinces, PSRI, Nairobi, p.9.
2. CBS. Demographic Baseline Survey, 1973
3. World Bank Document, Population and Development. p.26.

Table 1.9b shows that there is an apparent increase in fertility over the years except that in some years there was decline. It would therefore be plausible to anticipate either increase or a decrease. The average annual value over the 1969 - 79 period in our thesis will be an increasing Total Fertility Rate of 0.03 or be decreasing by the same amount annually. There will therefore be three projections. The first projection will be due to constant mortality and fertility. Projection two will be declining mortality and rising fertility. Projection three is the declining mortality and fertility. The life expectany values and their corresponding Total Fertility Rates are listed in table 1.9c.

TABLE 1.9c: <u>LIFE EXPECTANCIES AND TOTAL FERTILITY RATES UNDER THREE ASSUMPTIONS</u>

<u>PROJECTION ONE</u>

YEAR	e(x) FOR MALE POP.	e(x) FOR FEMALE POP.	TFR
1969	50.9	53.7	7.6
1974	50.9	53.7	7.6
1979	50.9	53.7	7.6
1984	50.9	53.7	7.6
1989	50.9	53.7	7.6
1999	50.9	53.7	7.6
2004	50.9	53.7	7.6

PROJECTION TWO

1969	50.9	53.70	7.60
1974	51.8	54.95	7.75
1979	52.7	56.20	7.90
1984	53.6	57.45	8.05
1989	54.5	58.70	8.20
1994	55.4	59.95	8.35
1999	56.3	61.20	8.50
2004	57.2	62.45	8.65

PROJECTION THREE

1969	50.9	53.70	7.60
1974	51.8	54.95	7.45
1979	52.7	56.20	7.30
1984	53.6	57.45	7.15
1989	54.5	58.70	7.00
1994	55.4	59.95	6.85
1999	56.3	61.20	6.70
2004	57.2	62.45	6.45

1.10: DATA SOURCE

The present study will rely heavily on secondary data from the Central Bureau of Statistics, Annual Reports from the ministry of education, Statistical Abstracts from the Ministry of Planning and National Development.

From the 1969 and 1979 Census Analytical Reports, information on population regarding age, sex, residential province or district is to be extracted. Furthermore, data concerning school attendance will be obtained from the censal Analytical Reports.

Annual Reports from the Ministry of Education are expected to give information on school enrolments and repeaters by sex, grade, type of school, district and province.

Earlier work done on school age population is expected to be obtained from the Central Bureau of Statistics. Special attention will be paid to population projections for Kenya 1980-2000 (CBS, 1983).

The present study is broad based; it covers all schools, Colleges, and Universities in the country. If raw data were to be used in the present study, then time constraint may feature prominently in making it difficult for the researcher to collect all the necessary information. One year is not enough time within which to collect such information as it may require referring to records of all the relevant institutions. Furthermore, the research fund allocated to the project is not enough to carry out meaningful work at a macro level. The arguments that one would use sampling units large enough to reflect the whole population in a given universe does not apply in the present study. This is because aggregate numbers of school enrolments are to be used and therefore the total numbers of school- age and school going populations are to be determined. In the light of the problems raised, it became necessary to plan to use secondary data rather than raw information.

1.11 SCOPE AND LIMITATION

This research is to be undertaken at macro level because aggregate numbers regarding school enrolments, repeaters, and drop - outs in the whole country will be considered. This research has its limitations because all information may not be available for all the institutions in the whole country. Some private and harambee schools have not furnished the ministry of education with all the information required. It is also evident from the annual reports and statistical abstracts that information on school enrolments by age and grade for all the years to considered in the present study is difficult to come by.

Although it is gratifying to note that the Central Bureau of Statistics is able to provide data on enrolments by standard and age, such information is limited in that it is confined mainly to primary schools. Furthermore, the dynamics of population are most felt at the primary school level: hence the need for projecting at this level. The secondary and University admissions are planned, in this study, to help in cohort analysis of wastages inherent in the education system.

It is note-worthy to point out that where information on enrolments by age is available, age - misreporting is likely to be a salient feature. In urban schools where competition is very high, age misreporting cannot be ruled out. In rural areas some mothers are either old and illiterate, or young and illiterate, or due to a lapse in memory because of unavailability of birth certificates, age misreporting may also be inherent in the available data on age of school entrants.

It may not also be surprising that some heads of schools misreport the number of enrolments per class, especially if over enrolment is done under fear of victimisation. Repetition may be under estimated because some heads of schools or even the pupils themselves cheat the ministry concerned of this sort of status.

However, an in - depth analysis of the available data is hoped to provide useful information for education planners and administrators to make reasonable decisions regarding some educational policies.

CHAPTER TWO

ENROLMENT TRENDS IN KENYA'S PRIMARY AND SECONDARY SCHOOLS

INTRODUCTION

In this chapter we shall analyse what has been the trend of school enrolment from the eve of independence era to the present. By establishing what has been happening in the past and present we can envisage what is likely to be the situation in the near future. The chapter is divided into six sections. The first section is the enrolment analysis at the national level for the period 1963 to 1986. Provincial and district enrolment analysis is also done in successive sections. A brief examination is done on the attrition for the period which had reasonable data. Present enrolment trends are also examined.

2.1 NATIONAL ENROLMENT

After independence, school enrolment for both boys and girls has been rising (Appendix 1). Comparing the standard one enrolments we find that in 1963 the enrolment was 137220: in 1970 it was 296459; in 1975 it was 351954; in 1980 it was 467415; and in 1984 it was 4471168. Thus the enrolment almost doubled in 1970, it was about three times in 1975 and in the 80s it had reached nearly four times what it was in 1963. In 1963. the form one enrolment for both boys and girls was 11214: in 1970 it was

41043; and in 1975 it was 73690. The enrolment at this level was almost four times by 1970 and five years later it had become almost seven times higher than it was in 1963. This trend of enrolment is the same for all other grades.

Despite the rising enrolment, it is important to realise that the enrolment of boys at primary and secondary is higher than that of girls; especially in the 1960s and 1970s. In the 1980s however, the enrolment of girls was almost equal to the enrolment of boys. For example, in 1984 the standard one enrolment for girls was 371425 while that of boys was 447168; in standard two enrolment of girls was 340866 while the enrolment for boys was 366073; and in other grades differences in enrolment between girls and boys were similar. This gives an indication of the positive change in attitude most Kenyan communities have towards the education of the female children.

Table 2.1a shows enrolment for boys and girls from 1963 to 1978. The 1963 admission in standard one realised a higher number in standard two the following year. This is because politicians were urging pupils to go to school so that they could meet the manpower requirements in the various sectors of the government. In the succeeding years, the admissions continued to realise considerable drop-outs. For example, from the 1964, 1965 and 1966 standard one admissions, enrolments at form six 13 years later were less than 3 per cent of the original admissions. The 1971, 1972 and 1973 standard 1 admissions in table 2.1b show that at the end of high school, the enrolments were between 3 and 4 per cent. The most surprising result is that enrolment at form six out of the 1974 standard one admissions was very low (1.8 per cent). Even the standard two enrolment in the same cohort was still among the lowest (75.5) per cent). The paradox that there was huge intake in standard one in 1974 due to free education for lower primary which was declared through a Presidential decree. High building fund levies arose following free primary education and this discouraged many parents from allowing their children to go to school. The rest of the drop-outs was associatied with terminal examinantion sifting system which allowed only a small number to proceed to high grades.

From table 2.1c and table 2.1d we note that for the 1963 cohorts over-enrolment was higher for boys than for girls. For example, the 1963 standard 2 admissions shows enrolment of 107.4 per cent for boys and 102.6 per cent for girls. In the same group, in standard seven enrolment for boys was 123.9 per cent and it was 88.6 per cent for girls.

2.2 PROVINCIAL ENROLMENT ANALYSIS

At provincial level. tables 2.2c and 2.2d show that there was no over-enrolment in Central, Nairobi and North Eastern provinces in 1973 admission. The Coast enrolled a staggering 308.6 per cent at standard two level (see page 2.2b). The iron is that Coast Province experienced one of the highest drop-outs as only 67.9 Per cent in the 1973 admission enrolled in standard seven. The province which experienced the lowest enrolment is

North Eastern. The basic reason is the differential regional economy. The Central province is enomically more advanced than the others while in Nairobi, rural-urban migration is rampant hence there was minimal drop-out in the former case and instant replacement from migrants in Nairobi schools. The other provinces being less rich could take advantage of the 1974 free education declaration but this was short-lived as it was replaced by building fund which was unaffordable by some parents, hence the general decline in enrolment in the succeeding years. The uniquely very low enrolment in the North Eastern Province is due to the nomadic life styles of most inhabitants of the province. Dry spells force some pupils to drop-out of school and go out in search of pasture and water for their livestock. The case for Coast province is associated with the cultural values and the harsh climatic conditions in the region. Early marriage and poverty are plausible reasons for the low enrolment in the schools.

Sex preference play a great role in the admissions of pupils in some provinces as shown in tables 2.2d and 2.2e. North Eastern province shows disparities in enrolment in all grades among all the admissions. In all cases the enrolment of boys is higher than that of girls. The drop-out rates for girls is higher than that for boys which implies less value attached to the education of the female children. The same can not be said of provinces such as Nairobi, Central and Nyanza where in some classes the enrolment for girls is higher. Tables 2.3d and

2.3e also show the case of over-enrolment in Nyanza. Rift Valley and Western provinces for boys in 1973 admission. As for girls, the 1973 admission shows over-enrolment in 1973 in Eastern. Rift Valley and Western provinces. Another case of over-enrolment is seen in 1977 and 1978 in Nairobi. In 1979 we had over-enrolment in Nyanza (110.0 per cent and 117.2 per cent) for boys and girls respectively; and in Western province we had 100.5 per cent for boys. In Central province over-enrolment was observed in 1979 in standard four. This was out of the 1977 cohort for both boys and girls. Over-enrolment in the 1977, 1978 and 1979 cohorts is due to Presidential decree in the milk scheme in primary schools.

2.3 DISTRICT ENROLMENT ANALYSIS

In this section enrolment analysis is done for all the districts for the period between 1973 and 1979. This period is chosen for its relatively better completeness of data than any other period.

As expected. Nairobi showed a markedly high enrolment in all the grades for both boys and girls. All grades showed enrolment of over 90 per cent. There was however minimal over-enrolment. This observation is due to in-migration which keeps the enrolment at very high levels. Repetition and drop-outs are not encouraged due to the higher demand for Nairobi schools. Those pupils who drop-out are replaced immediately by those who may have been short-listed. Thus, physical capacity inhibits over enrolment.

Following closely behind Nairobi are Kiambu, Mombasa, Embu, Kericho and Nakuru districts which showed that each cohort had enrolment of over 70 per cent in all the grades. Muranga district experienced high drop-outs in 1973 but other successive year and grade enrolments were over 80 per cent. The districts just listed above, except only partly for Mombasa and Nakuru, are very rich districts and can therefore support a large proportion of those who enrol in school. Coffee, tea are some of the cash crops grown in the districts. Food crops such as maize and beans are also grown in some of the rich districts. It is thus evident that such districts can afford a high proportion of those school age population who enrol in school. Mombasa and Nakuru are mainly affected by in-migration.

Districts with moderate successive year and grade enrolment are : Kitui, Kisii, Siaya, Kisumu, South Nyanza, Machakos, Marsabit, Meru, Kajiado, Trans Nzoia, Laikipia, Uasin Gishu, Kakamega, Busia, West Pokot and Bungoma. All these districts recorded enrolment of over 50 per cent. Most of the districts with moderate enrolments are also associated with very high over-enrolments and drop outs. Although the districts such as Kisii, Kisumu, South Nyanza, Siaya, Laikipia and Bungoma may be rich enough to support school going children in school, they experience high drop-out due to perhaps poor exam performance and child labour. In districts such as Laikipia, high over-enrolments were due to rural to rural migration which came about as a result of settlement schemes. Marsabit and West Pokot districts have surprising results because most of the inhabitants are nomads and they are relatively poor districts; we expect a much lower percentage of enrolment than 50%. The only possible explanation is the public awareness that has increased among the residents of the districts for a long time due to politicians and other government leaders.

It is noteworthy to mention that the migration component was ignored since we are dealing with enrolment for only primary schools. If secondary and high school enrolment cases had been considered, then the Ministry of Education migration ratios of $\pm$ 0.15 would have been used.

Table 2.1a : ENROLMENT IN PRIMARY AND SECONDARY SCHOOLS BY GRADE 1963 - 1978 (IN %)

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7	FORM1	FORM2	FORM3	FORM4	FORM5	FORM6
1963	100												
1964	100	105.5											
1965	100	91.9	101.5										
1966	100	84.9	84.5	94.9									
1967	100	94.7	84.6	81.5	90.2								
1968	100	90.8	92.1	81.2	73.6	97.8							
1969	100	89.6	86.4	88.5	72.9	78.6	109.8						
1970	100	95.3	88.2	83.9	81.5	79.0	90.9	29.9					
1971	100	88.3	91.2	82.8	77.6	86.4	88.5	25.7	27.3				
1972	100	91.1	86.6	87.2	76.7	83.9	94.5	27.3	32.0	22.6			
1973	100	88.7	89.3	82.4	81.5	79.7	85.2	30.2	23.9	18.9	20.5		
1974	100	114.7	99.8	96.9	76.6	86.3	85.5	28.4	26.9	19.6	23.0	3.4	
1975	100	75.5	110.6	95.7	86.2	79.9	89.8	29.4	27.4	23.5	18.4	2.7	3.0
1976	100	81.6	62.5	100.9	84.1	82.4	82.0	37.4	30.0	23.9	23.5	2.7	2.6
1977	100	85.7	76.8	53.4	89.3	78.8	77.3	35.9	35.5	24.2	23.0	2.7	2.6
1978	100	79.5	79.6	69.9	45.3	79.6	72.3	16.5	18.2	18.0	15.9	2.5	2.6

Table 2.1b : ENROLMENT IN PRIMARY AND SECONDARY SCHOOLS BY GRADE 1971 - 1986 (In %)

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7	FORM1	FORM2	FORM3	FORM4	FORM5	FORM6
1971	100												
1972	100	91.1											
1973	100	88.6	89.2										
1974	100	114.7	99.8	96.9									
1975	100	75.5	110.6	95.7	66.7								
1976	100	81.6	62.5	100.9	48.1	77.3							
1977	100	85.7	76.8	53.4	89.4	78.8	82.4						
1978	100	79.5	79.6	69.9	45.3	79.6	72.3	34.1					
1979	100	96.8	84.2	84.5	67.5	43.6	74.3	30.5	31.4				
1980	100	73.9	91.4	82.2	79.9	66.8	36.7	29.6	28.1	27.6			
1981	100	77.8	64.1	86.1	76.4	80.5	55.1	12.9	27.0	23.9	25.5		
1982	100	82.3	72.3	59.2	81.9	81.3	65.0	19.4	11.9	23.8	23.6	3.4	
1983	100	78.2	78.4	68.2	55.0	86.9	63.9	24.4	18.9	10.8	26.7	3.2	3.8
1984	100	79.4	72.5	74.1	61.5	52.7	75.6	24.9	20.8	16.6	11.0	3.6	3.3
1985	100	-	-	-	-	-	-	-	24.8	23.4	17.4	2.0	4.8
1986	100	-	-	-	-	-	-	-	-	23.5	21.0	2.8	1.8

Table 2.1c : ENROLMENT OF BOYS IN PRIMARY AND SECONDARY SCHOOLS BY STANDARD 1963 - 1984 (IN %) (MALES)

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1963	100						
1964	100	107.4					
1965	100	91.3	102.8				
1966	100	83.9	84.2	96.4			
1967	100	94.5	84.5	82.0	92.8		
1968	100	90.4	92.2	81.9	75.1	103.8	
1969	100	89.6	86.8	89.2	74.4	82.2	123.9
1970	100	93.8	88.4	84.4	82.8	82.7	102.3
1971	100	87.6	89.3	82.5	78.1	89.5	99.7
1972	100	90.4	87.0	85.7	76.4	83.4	103.7
1973	100	88.2	88.6	82.0	80.3	81.3	93.4
1974	100	113.8	99.1	96.5	76.5	86.2	93.6
1975	100	74.7	108.7	94.4	85.4	80.6	94.8
1976	100	81.1	61.3	98.8	83.3	81.9	87.4
1977	100	85.6	75.9	52.5	87.9	78.4	80.8
1978	100	79.2	79.3	68.8	44.8	79.2	76.0
1979	100	96.2	83.6	83.5	66.5	44.0	79.8
1980	100	74.1	90.6	80.9	78.3	66.5	41.4
1981	100	77.6	63.9	84.3	74.9	79.2	59.2
1982	100	82.5	71.6	59.0	78.7	80.0	70.0
1983	100	78.6	78.0	67.9	54.4	85.6	67.7
1984	100	79.5	92.3	72.6	60.4	52.5	78.7

Table 2.1d : ENROLMENT OF GIRLS IN PRIMARY AND SECONDARY SCHOOLS BY STANDARD 1963 - 1984 (IN %)

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1963	100						
1964	100	102.6					
1965	100	92.6	99.6				
1966	100	86.2	85.7	92.7			
1967	100	94.9	84.8	80.7	86.4		
1968	100	91.4	91.9	80.2	71.4	88.9	
1969	100	89.6	85.8	87.5	70.7	73.4	88.6
1970	100	97.3	88.0	83.1	79.7	73.8	74.1
1971	100	89.1	93.8	83.3	77.0	82.1	81.1
1972	100	92.1	86.2	89.3	77.1	92.6	81.9
1973	100	89.3	90.2	82.9	83.2	77.6	88.2
1974	100	115.9	100.6	97.4	76.7	86.3	74.7
1975	100	76.4	112.9	97.3	87.3	79.2	83.0
1976	100	82.2	63.7	103.4	85.2	83.2	75.3
1977	100	85.8	77.7	54.5	91.0	79.3	72.9
1978	100	79.7	79.9	71.1	45.9	80.2	67.8
1979	100	97.3	84.9	85.6	68.6	43.2	69.3
1980	100	73.7	92.4	83.7	81.6	67.1	33.4
1981	100	77.8	64.2	88.1	78.1	82.0	50.6
1982	100	82.2	72.8	59.5	83.5	82.8	59.6
1983	100	77.8	78.9	68.7	55.6	88.3	59.6
1984	100	79.4	72.4	75.6	62.4	52.9	72.1

TABLES SHOWING PROVINCIAL COHORT ENROLMENT FOR BOYS AND GIRLS 1973 - 1979 (IN %)

TABLE 2.2a FOR CENTRAL PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	98.3					
1975	100	86.0	93.6				
1976	100	93.3	77.9	89.7			
1977	100	94.1	91.5	71.6	83.3		
1978	100	91.3	93.9	90.5	66.9	81.3	
1979	100	92.2	90.4	96.1	89.2	64.5	72.5

TABLE 2.2b FOR COAST PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	308.6					
1975	100	75.2	92.2				
1976	100	83.6	63.3	83.0			
1977	100	82.7	76.8	53.9	74.9		
1978	100	80.0	79.1	71.4	46.4	69.4	
1979	100	91.5	81.6	78.7	68.2	43.9	67.9

PROVINCIAL COHORT ENROLMENT CONTD.

TABLE 2.2c FOR EASTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	108.1					
1975	100	76.6	98.2				
1976	100	81.4	62.5	86.9			
1977	100	87.3	77.2	54.0	77.0		
1978	100	82.4	82.6	71.9	47.0	70.4	
1979	100	92.5	82.4	84.6	66.9	44.5	66.5

TABLE 2.2d FOR NAIROBI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	99.5					
1975	100	96.6	98.2				
1976	100	97.5	92.9	93.6			
1977	100	98.6	97.4	90.0	90.7		
1978	100	101.5	99.1	98.1	88.7	89.6	
1979	100	98.0	98.7	97.4	94.3	88.6	80.6

PROVINCIAL COHORT ENROLMENT CONTD.

TABLE 2.2e FOR NORTH EASTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	86.9					
1975	100	48.6	61.4				
1976	100	87.0	44.6	58.1			
1977	100	89.8	84.9	42.8	54.6		
1978	100	67.2	74.3	71.8	35.4	49.6	
1979	100	71.4	52.6	70.8	72.6	37.1	47.9

TABLE 2.2f FOR NYANZA PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	145.2					
1975	100	69.5	148.2				
1976	100	70.4	50.8	125.8			
1977	100	83.8	63.8	40.2	106.7		
1978	100	69.7	74.2	54.6	31.7	86.2	
1979	100	113.9	85.9	86.7	56.0	31.5	90.9

PROVINCIAL COHORT ENROLMENT CONTD.

TABLE 2.2g FOR RIFT VALLEY PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	123.7					
1975	100	72.0	118.6				
1976	100	82.1	61.8	109.9			
1977	100	81.3	77.3	52.9	95.7		
1978	100	77.4	75.2	69.9	43.5	86.2	
1979	100	113.9	85.9	86.7	56.0	31.5	90.9

TABLE 2.2h FOR WESTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	126.5					
1975	100	75.7	123				
1976	100	83.8	64.2	116.3			
1977	100	81.9	77.3	53.9	100.2		
1978	100	72.8	70.6	65.3	42.6	78.9	
1979	100	99.7	82.2	110.8	64.2	40.6	69.3

TABLES SHOWING PROVINCIAL COHORT ENROLMENT FOR BOYS BY STD., 1973 - 79 (IN %)

TABLE 2.2.1a FOR CENTRAL PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	92.7				
1976	100	92.7	-	87.5			
1977	100	93.7	89.7	-	81.7		
1978	100	91.9	92.3	87.6	-	78.9	
1979	100	91.7	89.3	92.9	85.5	-	73.3

TABLE 2.2.1b FOR COAST PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	91.4				
1976	100	85.0	-	82.0			
1977	100	82.5	78.3	-	74.1		
1978	100	79.3	78.2	72.6	-	67.8	

PROVINCIAL COHORT ENROLMENT CONTD.

TABLE 2.2.1c FOR EASTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	96.2				
1976	100	80.9	-	84.0			
1977	100	87.3	76.9	-	74.9		
1978	100	82.6	83.0	71.3	-	69.3	
1979	100	92.3	82.5	84.0	66.2	-	68.5

TABLE 2.2.1d FOR NAIROBI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	99.6				
1976	100	98.6	-	93.6			
1977	100	98.4	98.9	-	91.1		
1978	100	100.9	99.0	98.3	-	92.2	
1979	100	99.3	98.9	97.7	96.4	-	81.9

PROVINCIAL COHORT ENROLMENT CONTD

TABLE 2.2.1e FOR NORTH EASTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	67.5				
1976	100	90.4	-	59.2			
1977	100	93.4	88.7	-	54.3		
1978	100	68.9	80.8	79.9	-	51.3	
1979	100	75.6	53.9	74.2	75.6	-	49.9

TABLE 2.2.1f FOR NYANZA PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1975	100	-					
1976	100	141.9					
1977	100	84.1	62.5	-	104.8		
1978	100	70.3	75.1	53.9	-	87.4	
1979	100	111.0	85.2	86.5	55.4	-	100.5

TABLE 2.2.1g FOR RIFT VALLEY PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	115.0				
1976	100	81.1	-	107.0			
1977	100	81.2	76.1	-	93.4		
1978	100	76.8	74.7	68.3	-	87.0	
1979	100	90.8	79.3	77.4	63.0	-	85.1

PROVINCIAL COHORT ENROLMENT CONTD.

TABLE 2.2.1h FOR WESTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	122.8				
1976	100	85.0	-	117.0			
1977	100	82.1	78.0	-	100.8		
1978	100	72.3	70.3	65.6	-	80.5	
1979	100	100.5	81.9	78.1	64.3	-	73.9

TABLES SHOWING PROVINCIAL COHORT ENROLMENT FOR GIRLS, 1973 - 79 (IN %).

TABLE 2.2.2a FOR CENTRAL PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	94.6				
1976	100	93.9	-	91.9			
1977	100	94.5	93.4	-	85.1		
1978	100	90.7	95.5	93.5	-	84.0	
1979	100	92.7	91.6	99.5	93.1	-	71.5

PROVINCIAL ENROLMENT CONTD

TABLE 2.2.2b FOR COAST PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	93.6				
1976	100	81.6	-	84.6			
1977	100	83.0	74.8	-	76.3		
1978	100	81.0	80.4	69.7	-	72.1	
1979	100	90.5	80.9	79.5	65.3	-	65.5

TABLE 2.2.2c FOR EASTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	100.5				
1976	100	81.8	-	90.3			
1977	100	87.3	77.5	-	79.5		
1978	100	82.3	82.1	72.5	-	71.7	
1979	100	92.6	82.2	85.4	67.7	-	64.1

PROVINCIAL ENROLMENT CONTD

TABLE 2.2.2d FOR NAIROBI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	96.8				
1976	100	96.4	-	93.5			
1977	100	98.9	95.9	-	90.4		
1978	100	102.1	99.3	97.8	-	91.5	
1979	100	96.7	98.4	97.1	92.2	-	79.4

TABLE 2.2.2e FOR NORTH EASTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	59.4				
1976	100	79.1	-	54.6			
1977	100	80.8	75.9	-	55.5		
1978	100	62.8	58.2	53.2	-	43.6	
1979	100	62.0	49.3	62.3	65.6	-	41.8

TABLE 2.2.2f FOR NYANZA PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	156.8				
1976	100	72.0	-	131.6			
1977	100	83.5	65.3	-	109.2		
1978	100	69.1	73.3	55.4	-	84.6	
1979	100	117.2	86.6	87.0	56.7	-	77.8

TALBE 2.2.2g FOR RIFT VALLEY PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	122.9				
1976	100	83.2	-	113.8			
1977	100	81.5	78.6	-	85.2		
1978	100	78.0	75.8	71.8	-	85.2	
1979	100	91.8	81.8	79.1	65.1	-	69.3

TABLE 2.2.2h FOR WESTERN PROVINCE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	123.3				
1976	100	82.5	-	115.5			
1977	100	81.6	76.6	-	99.5		
1978	100	73.2	70.9	65.0	-	77.1	
1979	100	98.9	82.6	78.3	64.0	-	64.1

TABLES SHOWING DISTRICT ENROLMENT ANALYSIS FOR BOYS, 1973 - 79, (IN %)

TABLE 2.2.3.1 FOR KIAMBU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	90.3				
1976	100	91.6	-	86.9			
1977	100	93.1	87.8	-	83.2		
1978	100	87.8	89.4	83.4	-	82.1	
1979	100	89.9	85.0	89.9	83.0	-	76.5

TABLE 2.2.3.2 FOR KIRINYAGA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	94.1				
1976	100	91.2	-	87.3			
1977	100	91.3	85.8	-	78.4		
1979	100	94.6	99.3	99.7	86.4	-	76.0

TABLE 2.2.3.3 FOR MURANG'A

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	93.6				
1976	100	94.2	-	88.0			
1977	100	95.9	93.0	-	82.7		
1978	100	93.0	94.4	92.6	-	76.4	
1979	100	90.1	88.9	95.2	89.2	-	67.0

TABLE 2.2.3.4 FOR NYANDARUA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	98.0				
1976	100	101.1	-	92.1			
1977	100	98.1	98.1	-	80.8		
1978	100	97.2	102.8	100.7	-	77.3	
1979	100	100.8	102.4	107.1	98.2	-	80.8

TABLE 2.2.3.5 FOR NYERI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	90.4				
1976	100	89.5	-	85.2			
1977	100	91.8	86.6	-	81.0		
1978	100	88.5	88.7	80.8	-	78.1	
1979	100	91.0	86.1	86.4	79.1	-	72.4

TABLE 2.2.3.6 FOR KILIFI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	87.2				
1976	100	86.1	-	77.2			
1977	100	73.6	76.3	-	65.5		
1978	100	72.6	63.8	68.2	-	56.3	
1979	100	95.3	77.6	64.2	65.0	-	60.0

TABLE 2.2.3.7 FOR KWALE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	208.2				
1976	100	81.9	-	163.8			
1977	100	81.2	75.4	-	131.2		
1978	100	73.6	76.5	64.5	-	104.0	
1979	100	91.0	77.3	74.0	61.3	-	97.1

TABLE 2.2.3.8 FOR LAMU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	81.7				
1976	100	57.9	-	75.7			
1977	100	86.9	59.8	-	62.9		
1978	100	71.1	76.0	56.2	-	60.6	
1979	100	66.6	66.9	73.6	51.2	-	55.4

TABLE 2.2.3.9 FOR MOMBASA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	97.4				
1976	100	99.9	-	94.1			
1977	100	105.5	101.8	-	98.4		
1978	100	100.3	114.5	103.2	-	91.1	
1979	100	99.6	104.3	117.4	106.3	-	97.9

TABLE 2.2.3.10 FOR TAITA - TAVETA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	88.5				
1976	100	89.4	-	80.3			
1977	100	95.8	83.3	-	73.3		
1978	100	97.9	98.2	86.2	-	71.6	
1979	100	98.1	108.1	107.3	85.0	-	99.6

TABLE 2.2.3.11 FOR TANA RIVER

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	130.9				
1976	100	68.5	-	113.1			
1977	100	65.7	51.9	-	91.8		
1978	100	58.7	60.8	42.1	-	96.7	
1979	100	66.5	54.2	55.9	37.1	-	100

TABLE 2.2.3.12 FOR EMBU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	90.8				
1976	100	86.9	-	81.6			
1977	100	86.8	86.5	-	75.5		
1978	100	86.1	86.6	82.0	-	75.0	
1979	100	94.9	86.2	86.6	78.0	-	72.4

TABLE 2.2.3.13 FOR ISIOLO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	64.4				
1976	100	85.7	-	67.0			
1977	100	63.7	74.6	-	59.6		
1978	100	79.1	54.4	64.7	-	59.3	
1979	100	83.4	71.9	51.5	56.1	-	62.6

TABLE 2.2.3.14 FOR KITUI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	92.2				
1976	100	86.0	-	78.4			
1977	100	92.3	81.5	-	69.5		
1978	100	82.8	92.3	76.5	-	63.7	
1979	100	93.6	82.3	93.3	72.0	-	65.5

TABLE 2.2.3.15 FOR MARSABIT

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	118.1				
1976	100	82.2	-	87.7			
1977	100	83.2	76.5	-	81.9		
1978	100	84.2	75.9	71.5	-	80.1	
1979	100	85.1	74.1	65.9	62.3	-	71.3

TABLE 2.2.3.16 FOR MACHAKOS

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	104.7				
1976	100	83.5	-	91.3			
1977	100	85.6	77.0	-	79.5		
1978	100	84.2	80.8	70.2	-	72.8	
1979	100	93.0	85.2	80.4	65.1	-	70.3

TABLE 2.2.3.17 FOR MERU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	89.0				
1976	100	72.1	-	78.4			
1977	100	85.6	77.0	-	79.5		
1978	100	84.2	80.8	70.2	-	72.8	
1979	100	93.0	85.2	80.4	65.1	-	70.3

TABLE 2.2.3.18 FOR NAIROBI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	99.6				
1976	100	98.6	-	93.6			
1977	100	98.4	98.9	-	91.1		
1978	100	100.9	99.0	98.3	-	92.2	
1979	100	99.3	98.9	97.7	96.4	-	81.9

TABLE 2.2.3.19 FOR GARISSA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	78.0				
1976	100	79.2	-	64.3			
1977	100	75.2	67.3	-	54.9		
1978	100	70.7	72.0	61.3	-	54.7	
1979	100	85.6	71.2.	62.0	58.88	-	52.8

TABLE 2.2.3.20 FOR MANDERA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	64.7				
1976	100	81.9	-	55.6			
1977	100	80.7	80.5	-	46.5		
1978	100	59.6	60.0	75.1	-	44.6	
1979	100	78.0	48.5	53.3	64.1	-	45.0

TABLE 2.2.3.21 FOR WAJIR

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	61.0				
1976	100	122.9	-	58.3			
1977	100	149.8	138.6	-	61.8		
1978	100	75.0	136.2	119.5	-	55.8	
1979	100	68.9	49.8	135.8	122.0	-	52.2

TABLE 2.2.3.22 FOR KISII

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	131.2				
1976	100	72.4	-	116.0			
1977	100	74.8	58.2	-	95.9		
1978	100	67.8	64.5	50.0	-	76.0	
1979	100	110.9	82.0	75.9	51.5	-	78.6

TABLE 2.2.3.23 FOR KISUMU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	151.1				
1976	100	61.0	-	125.8			
1977	100	92.3	58.9	-	108.9		
1978	100	85.3	92.0	58.9	-	100.1	
1979	100	101.3	96.3	97.9	54.6	-	122.1

TABLE 2.2.3.24 FOR SIAYA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	129.8				
1976	100	80.9	-	109.7			
1977	100	85.4	75.0	-	93.6		
1978	100	71.2	75.2	61.4	-	80.1	
1979	100	108.3	86.4	87.6	62.3	-	92.0

TABLE 2.2.3.25 FOR SOUTH NYANZA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	169.2				
1976	100	61.1	-	141.2			
1977	100	91.7	62.0	-	129.2		
1978	100	64.2	80.5	53.3	-	106.4	
1979	100	119.1	81.9	94.1	55.8	-	134.7

TABLE 2.2.3.26 FOR BARINGO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	133.8				
1976	100	71.2	-	115.0			
1977	100	82.6	71.3	-	108.4		
1978	100	59.1	63.2	53.9	-	95.3	
1979	100	86.19	60.6	62.1	49.4	-	88.0

TABLE 2.2.3.27 FOR NAKURU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	114.9				
1976	100	89.5	-	110.2			
1977	100	90.2	85.2	-	97.7		
1978	100	87.9	87.2	80.1	-	96.2	
1979	100	96.2	89.5	90.3	73.7	-	87.2

TABLE 2.2.3.28 FOR KERICHO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	113.3				
1976	100	89.5	-	116.4			
1977	100	77.3	80.6	-	97.2		
1978	100	79.1	71.6	76.0	-	92.0	
1979	100	100.7	79.7	79.6	71.3	-	103.8

TABLE 2.2.3.29 FOR LAIKIPIA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	95.72				
1976	100	96.2	-	92.90			
1977	100	96.3	93.5	-	87.8		
1978	100	97.2	106.5	91.0	-	80.3	
1979	100	94.1	100.5	114.0	93.8	-	81.3

TABLE 2.2.3.30 FOR NAROK

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	103.4				
1976	100	69.2	-	93.7			
1977	100	79.1	61.1	-	76.5		
1978	100	82.0	75.7	53.8	-	76.6	
1979	100	80.6	79.1	72.6	48.3	-	78.7

TABLE 2.2.3.31 FOR KAJIADO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	90.6				
1976	100	77.3	-	83.10			
1977	100	90.0	79.8	-	72.0		
1978	100	75.4	85.6	74.2	-	69.4	
1979	100	77.3	71.3	78.7	61.5	-	62.0

TABLE 2.2.3.32 FOR SAMBURU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	74.4				
1976	100	67.9	-	71.6			
1977	100	57.1	64.1	-	60.0		
1978	100	57.1	51.0	51.2	-	61.6	
1979	100	83.1	53.7	46.6	49.6	-	61.6

TABLE 2.2.3.33 FOR ELGEYO MARAKWET

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	124.7				
1976	100	74.4	-	116.6			
1977	100	69.1	65.1	-	91.8		
1978	100	71.3	62.1	57.9	-	88.2	
1979	100	75.3	69.4	61.1	47.6	-	88.2

TABLE 2.2.3.34 FOR NANDI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	107.3				
1976	100	69.5	-	94.0			
1977	100	69.5	65.2	-	79.1		
1978	100	63.7	58.1	51.2	-	63.7	
1979	100	92.4	69.9	59.1	45.6	-	61.4

TABLE 2.2.3.35 FOR TRANS NZOIA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	168.6				
1976	100	75.2	-	141.3			
1977	100	88.6	75.3	-	125.6		
1978	100	81.2	85.9	70.3	-	127.8	
1979	100	114.0	95.9	68.4	-	98.3	

TABLE. 2.2.3.36 FOR UASIN GISHU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	144.5				
1976	100	85.5	-	126.7			
1977	100	87.8	81.8	-	116.0		
1978	100	84.0	86.3	74.1	-	104.9	
1979	100	95.3	89.6	85.5	67.5	-	100.3

TABLE 2.2.3.37 FOR WEST POKOT

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	90.3				
1976	100	76.7	-	87.5			
1977	100	74.1	72.1	-	82.8		
1978	100	61.4	61.6	62.1	-	72.8	
1979	100	88.29	66.0	65.1	63.1	-	72.6

TABLE 2.2.3.38 FOR TURKANA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	54.5				
1976	100	76.9	-	34.9			
1977	100	69.4	52.3	-	28.2		
1978	100	66.0	69.4	48.6	-	33.0	
1979	100	66.5	50.1	51.1	42.0	-	24.9

TABLE 2.2.3.39 FOR BUNGOMA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	122.5				
1976	100	76.1	-	117.0			
1977	100	79.8	71.1	-	105.6		
1978	100	74.4	72.1	65.9	-	94.4	
1979	100	86.4	72.8	78.5	64.4	-	95.3

TABLE 2.2.3.40 FOR BUSIA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	119.2				
1976	100	75.6	-	115.2			
1977	100	75.7	70.3	-	97.2		
1978	100	67.2	70.0	63.1	-	83.8	
1979	100	96.6	80.2	79.1	60.9	-	76.3

TABLE 2.2.3.41 FOR KAKAMEGA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	123.6				
1976	100	92.2	-	117.4			
1977	100	84.8	83.6	-	99.5		
1978	100	72.6	69.5	-	74.0		
1979	100	110.2	87.2	77.6	65.2	-	64.3

TABLES SHOWING DISTRICT ENROLMENT ANALYSIS FOR GIRLS, 1973-1979, (IN %)

TABLE 2.2.4.1 FOR KIAMBU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	91.5				
1976	100	91.7	-	87.9			
1977	100	94.4	91.5	-	84.1		
1978	100	83.4	91.8	89.1	-	85.1	
1979	100	92.7	88.4	93.6	89.1	-	72.4

TABLE 2.2.4.2 FOR KIRINYAGA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	98.7				
1976	100	91.8	-	95.3			
1977	100	92.0	89.0	-	83.7		
1978	100	98.8	99.9	93.4	-	86.1	
1979	100	97.6	99.3	105.6	93.8	-	77.9

TABLE 2.2.4.3 FOR MURANGA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	97.1				
1976	100	96.4	-	93.1			
1977	100	95.5	98.3	-	86.5		
1978	100	92.2	97.9	99.0	-	83.5	
1979	100	89.4	91.4	108.6	98.5	-	66.4

TABLE 2.2.4.4 FOR NYANDARUA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	97.8				
1976	100	102.0	-	94.0			
1977	100	96.8	96.4	-	81.9		
1978	100	103.2	105.3	101.8	-	78.0	
1979	100	105.3	101.5	111.5	101.6	-	71.9

TABLE 2.2.4.5 FOR NYERI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	92.5				
1976	100	91.1	-	92.8			
1977	100	93.9	91.2	-	86.8		
1978	100	89.7	92.7	89.7	-	85.4	
1979	100	91.4	89.0	97.1	88.3	-	73.3

TABLE 2.2.4.6 FOR KILIFI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	84.3				
1976	100	77.5	-	76.0			
1977	100	71.3	69.2	-	63.1		
1978	100	70.0	67.5	60.8	-	54.5	
1979	100	85.2	71.5	64.8	55.0	-	52.4

TABLE 2.2.4.7 FOR KWALE

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	92.7				
1976	100	79.2	-	79.80			
1977	100	78.4	70.2	-	71.3		
1978	100	73.2	73.3	62.4	-	60.8	
1979	100	86.9	75.2	71.2	53.9	-	54.4

TABLE 2.2.4.8 FOR LAMU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	95.8				
1976	100	56.9	-	106.9			
1977	100	74.3	58.1	-	82.0		
1978	100	64.2	70.2	48.7	-	72.4	
1979	100	64.3	57.9	62.0	37.9	-	53.3

TABLE 2.2.4.9 FOR MOMBASA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	94.3				
1976	100	90.3	-	86.5			
1977	100	107.0	89.0	-	85.3		
1978	100	99.5	104.5	90.7	-	88.5	
1979	100	102.5	99.5	110.3	90.3	-	77.5

TABLE 2.2.4.10 FOR TAITA TAVETA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	97.7				
1976	100	91.7	-	88.1			
1977	100	94.7	86.5	-	80.0		
1978	100	94.6	95.0	84.0	-	77.0	
1979	100	102.2	94.3	96.1	83.9	-	73.3

TABLE 2.2.4.11 FOR TANA RIVER

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	117.0				
1976	100	64.4	-	102.8			
1977	100	64.7	44.4	-	78.3		
1978	100	61.7	55.3	35.4	-	71.2	
1979	100	64.2	54.4	46.7	29.9	-	59.4

TABLE 2.2.4.12 FOR EMBU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	94.7				
1976	100	89.0	-	90.0			
1977	100	92.3	88.1	-	86.3		
1978	100	87.4	88.8	86.4	-	81.8	
1979	100	96.0	89.2	95.1	83.2	-	74.4

TABLE 2.2.4.13 FOR ISIOLO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	56.7				
1976	100	64.0	-	49.0			
1977	100	65.5	49.1	-	47.1		
1978	100	62.2	47.0	45.7	-	44.3	
1979	100	78.8	55.5	40.8	46.6	-	48.7

TABLE 2.2.4.14 FOR KITUI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	94.1				
1976	100	86.9	-	83.4			
1977	100	88.2	83.7	-	73.6		
1978	100	81.1	85.3	77.0	-	66.0	
1979	100	93.0	80.9	88.4	72.4	-	60.2

TABLE 2.2.4.15 FOR MARASABIT

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	103.8				
1976	100	89.5	-	73.90			
1977	100	86.3	76.4	-	53.1		
1978	100	79.5	81.9	63.8	-	52.1	
1979	100	81.9	62.8	68.9	49.3	-	37.0

TABLE 2.2.4.16 FOR MACHAKOS

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	107.9				
1976	100	85.0	-	95.50			
1977	100	86.1	78.4	-	80.6		
1978	100	84.5	81.2	72.2	-	70.5	
1979	100	94.7	85.7	83.6	66.1	-	57.9

TABLE 2.2.4.17 FOR MERU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	95.7				
1976	100	72.1	-	87.2			
1977	100	87.6	70.2	-	79.2		
1978	100	78.5	80.5	67.1	-	73.4	
1979	100	89.0	76.6	85.0	63.7	-	72.5

TABLE 2.2.4.18 FOR NAIROBI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	96.8				
1976	100	96.4	-	93.5			
1977	100	98.9	95.9	-	90.4		
1978	100	102.1	99.3	98.5	-	91.5	
1979	100	96.7	98.4	97.1	92.2	-	79.4

TABLE 2.2.4.19 FOR GARISSA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	54.5				
1976	100	79.4	-	54.0			
1977	100	62.1	69.0	-	45.5		
1978	100	78.3	45.1	52.3	-	39.8	
1979	100	72.7	76.4	51.0	65.2	-	42.6

TABLE 2.2.4.20 FOR MANDERA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	67.4				
1976	100	54.8	-	54.7			
1977	100	56.8	45.2	-	55.8		
1978	100	35.7	33.5	33.0	-	46.3	
1979	100	60.9	32.4	24.5	36.5	-	37.9

TABLE 2.2.4.21 FOR WAJIR

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	60.6				
1976	100	95.8	-	55.1			
1977	100	141.9	103.6	-	65.9		
1978	100	68.3	110.5	68.1	-	46.1	
1979	100	56.7	46.7	128.2	86.1	-	43.1

TABLE 2.2.4.22 FOR KISII

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	149.0				
1976	100	74.8	-	133.2			
1977	100	75.2	61.2	-	106.5		
1978	100	66.1	63.2	52.7	-	80.3	
1979	100	115.6	81.9	79.2	54.7	-	69.7

TABLE 2.2.4.23 FOR KISUMU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	163.8				
1976	100	63.7	-	125.8			
1977	100	92.6	64.0	-	106.4		
1978	100	84.0	91.3	57.0	-	86.3	
1979	100	1049	97.8	100.4	56.2	-	84.5

TABLE 2.2.4.24 FOR SIAYA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	144.1				
1976	100	82.7	-	118.9			
1977	100	84.9	76.9	-	99.1		
1978	100	70.7	75.8	62.7	-	81.7	
1979	100	116.0	90.2	87.1	63.5	-	72.5

TABLE 2.2.4.25 FOR SOUTH NYANZA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	188.3				
1976	100	64.2	-	150.9			
1977	100	91.3	64.4	-	131.2		
1978	100	62.6	77.1	52.5	-	95.2	
1979	100	130.5	83.2	91.9	54.0	-	96.8

TABLE 2.2.4.26 FOR BARINGO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	133.8				
1976	100	77.5	-	117.1			
1977	100	82.2	76.6	-	111.6		
1978	100	64.5	63.7	60.8	-	86.0	
1979	100	88.2	64.4	62.1	52.3	-	75.8

TABLE 2.2.4.27 FOR NAKURU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	111.9				
1976	100	92.2	-	110.0			
1977	100	99.1	94.4	-	107.4		
1978	100	80.0	89.9	82.1	-	82.4	
1979	100	95.4	84.1	91.7	77.7	-	70.1

TABLE 2.2.4.25 FOR SOUTH NYANZA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	188.3				
1976	100	64.2	-	150.9			
1977	100	91.3	64.4	-	131.2		
1978	100	62.6	77.1	52.5	-	95.2	
1979	100	130.5	83.2	91.9	54.0	-	96.8

TABLE 2.2.4.26 FOR BARINGO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	133.8				
1976	100	77.5	-	117.1			
1977	100	82.2	76.6	-	111.6		
1978	100	64.5	63.7	60.8	-	86.0	
1979	100	88.2	64.4	62.1	52.3	-	75.8

TABLE 2.2.4.27 FOR NAKURU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	111.9				
1976	100	92.2	-	110.0			
1977	100	99.1	94.4	-	107.4		
1978	100	80.0	89.9	82.1	-	82.4	
1979	100	95.4	84.1	91.7	77.7	-	70.1

TABLE 2.2.4.28 FOR KERICHO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	118.7				
1976	100	91.0	-	120.8			
1977	100	77.8	82.2	-	100.8		
1978	100	80.2	73.2	78.6	-	89.0	
1979	100	86.0	81.0	80.0	71.6	-	72.6

TABLE 2.2.4.29 FOR LAIKIPIA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	168.9				
1976	100	93.6	-	153.0			
1977	100	94.3	96.2	-	143.0		
1978	100	90.3	102.3	94.8	-	127.7	
1979	100	94.2	97.3	110.6	91.4	-	114.6

TABLE 2.2.4.30 FOR NAROK

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	103.3				
1976	100	66.7	-	87.4			
1977	100	74.2	59.9	-	70.9		
1978	100	78.6	69.6	51.0	-	66.5	
1979	100	82.3	74.1	66.2	41.8	-	55.9

TABLE 2.2.4.31 FOR KAJIADO

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	98.4				
1976	100	78.7	-	95.2			
1977	100	92.4	82.6	-	89.8		
1978	100	80.5	89.1	79.1	-	80.0	
1979	100	82.4	78.0	84.3	76.6	-	75.2

TABLE 2.2.4.32 FOR SAMBURU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	56.7				
1976	100	80.6	-	46.6			
1977	100	55.9	72.5	-	42.6		
1978	100	59.8	54.3	62.4	-	46.0	
1979	100	77.1	48.9	55.9	48.3	-	34.6

TABLE 2.2.4.33 FOR ELGEYO MARAKWET

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	141.5				
1976	100	74.8	-	121.7			
1977	100	72.1	71.2	-	98.4		
1978	100	72.2	64.1	64.7	-	91.9	
1979	100	76.6	73.3	64.8	52.7	-	69.4

TABLE 2.2.4.34 FOR NANDI

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	125.4				
1976	100	70.9	-	110.1			
1977	100	72.5	65.1	-	87.6		
1978	100	65.7	61.4	52.4	-	66.2	
1979	100	89.5	72.8	64.9	45.0	-	49.5

TABLE 2.2.4.35 FOR TRANS NZOIA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	172.3				
1976	100	81.5	-	141.2			
1977	100	85.3	80.1	-	131.2		
1978	100	80.9	87.3	74.1	-	104.3	
1979	100	117.9	97.1	94.8	70.8	-	79.8

TABLE 2.2.4.36 FOR UASIN GISHU

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	158.8				
1976	100	84.1	-	142.7			
1977	100	85.7	80.5	-	123.2		
1978	100	80.5	82.0	76.9	-	110.6	
1979	100	100.9	91.4	66.1	69.7	-	85.9

TABLE 2.2.4.37 FOR WEST POKOT

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	116.0				
1976	100	68.6	-	101.8			
1977	100	73.7	66.2	-	114.6		
1978	100	66.6	60.5	64.2	-	85.9	
1979	100	86.6	62.9	65.0	61.2	-	67.6

TABLE 2.2.4.38 FOR TURKANA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	55.4				
1976	100	57.3	-	31.6			
1977	100	59.2	50.5	-	31.6		
1978	100	56.8	54.7	40.7	-	24.9	
1979	100	69.3	36.2	47.7	32.9	-	22.2

TABLE 2.2.4.39 FOR BUNGOMA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	123.6				
1976	100	71.4	-	114.8			
1977	100	83.4	67.3	-	101.7		
1978	100	76.3	75.8	62.7	-	86.4	
1979	100	85.3	75.7	81.8	61.1	-	74.9

TABLE 2.2.4.40 FOR BUSIA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	114.2				
1976	100	72.0	-	100.1			
1977	100	69.6	-	87.4			
1978	100	64.9	62.6	59.5	-	71.9	
1979	100	96.9	75.9	72.3	58.9	-	58.6

TABLE 2.2.4.41 FOR KAKAMEGA

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1973	100						
1974	100	-					
1975	100	-	124.8				
1976	100	90.9	-	118.5			
1977	100	83.5	83.9	-	100.8		
1978	100	73.8	70.5	67.6	-	74.2	
1979	100	107.6	87.9	78.1	66.7	-	60.7

2.4 PRESENT SITUATION OF EDUCATION IN KENYA

This section examines the present situation of primary education in Kenya by looking at schools, pupils and teachers. It also examines secondary school education by considering the enrolment and accessibility to form one places. The period 1984 to 1987 is taken to highlight the state of enrolment in schools in the 1980s.

2.4.1 PATTERN OF DISTRIBUTION OF SCHOOLS

The total number of schools in the country stood at 13849 in 1987, an increase of about ten per cent from a figure of 12539 in 1984. An analysis of the distribution of primary schools by district shows that Machakos district had the highest number of schools in 1987 followed closely by South Nyanza district; while the districts of North Eastern province had the lowest number of schools numbering just under 50 per district.

The Number of Primary Schools by 1987

Between 50 and 99, out of 13849 of primary school we have Mombasa, Turkana and Samburu. Between 100 and 299, out of 13849 primary schools we have Kirinyaga, Nyandarua, Kilifi, Kwale Taita Taveta, Tana River, Embu, Nairobi and Laikipia. Between 300 and 999 we have Kiambu, Muranga, Nyeri, Kitui, Meru, Kisii, Kisumu, Siaya, Baringo, Nakuru, Kericho, Nandi, Bungoma, Busia and Kakamega.

The details of the number of schools by district from 1984 to 1987 are provided in table 2.4a. It is clear from this table that the arid and semi-arid districts have so far fewer primary schools compared with the agriculturally well endowed districts. However, the expansion of educational opportunities has continued even in the arid and semi-arid districts. Despite all efforts to balance the distribution of schools by district, it still coincides with the focus of missionary activities such that districts with the history of missionary activities have more schools.

TABLE 2.4a: NUMBER OF PRIMARY SCHOOLS BY DISTRICT 1984, 1986 AND 1987

DISTRICT	1984	1986	1987
KIAMBU	322	335	341
KIRINYAGA	165	170	173
MURANGA	360	384	393
NYANDARUA	178	192	198
NYERI	329	337	341
KILIFI	259	286	288
KWALE	210	220	228
LAMU	39	45	45
MOMBASA	71	76	81
TANA RIVER	82	99	105
TAITA TAVETA	135	145	151
EMBU	202	228	221
ISOLO	29	37	38
KITUI	549	575	622
MARSABIT	35	45	47
MACHAKOS	1183	1234	1272
MERU	730	768	808
GARISSA	22	36	44
MANDERA	20	35	36
WAJIR	25	30	37
KISII	871	892	915
KISUMU	504	549	562
SIAYA	525	546	557

TABLE 2.4a CONTD.

SOUTH NYANZA	1056	1225	1244
BARINGO	353	373	379
NAKURU	333	356	368
KERICHO	505	358	558
LAIKIPIA	148	150	163
NAROK	164	191	191
KAJIADO	124	132	138
SAMBURU	70	75	75
EGEYO MARAKWET	210	236	244
NANDI	330	353	357
TRANS NZOIA	178	168	170
UASIN GISHU	244	270	285
WEST POKOT	191	196	232
TURKANA	67	94	95
BUNGOMA	444	463	465
BUSIA	295	300	300
KAKAMEGA	836	868	888
NAIROBI	144	156	194
TOTAL	12539	12554	13849

Source: Ministry of Education, Statistics Unit.

2.4.2 ENROLMENT IN PRIMARY SCHOOLS

Enrolment in primary schools in Kenya has increased rapidly over the last decade to register a figure of five million by 1987. In the period 1984 to 1987, enrolment increased by about 14 per cent from 4.4 million to 5.0 million. A number of districts currently enrol over half a million children in primary schools. These districts include Nyeri, Machakos, Meru, Kisii, South Nyanza and Kakamega.

However, at the other extreme, total enrolment in a number of districts is less than 15000. These districts include Lamu, Isiolo, Marsabit, Samburu and all the districts in North Eastern province.

Primary school enrolment by district ranged from 7773 pupils in Wajir district (1987) to 376684 in Kakamega district during the same year. The details of total enrolment in primary schools are shown in table 2.4b.

An analysis of primary school enrolment by sex reveals that at the national level, boys are the majority, constituting about 52 per cent of the total enrolment. However, there is already a clear trend towards equality in status. A large number of districts are now enrolling just about equal sexes in primary schools. From table 2.4c it is noted that from 1984 to 1987, Nyeri, Kirinyaga, Muranga, Embu, Machakos, Meru and Kakamega have achieved a 1:1 sex ratio in primary school enrolment. On the other hand, there are some districts where enrolment ratio is very much in favour of boys. These again include the entire

North Eastern province and the districts of Turkana, Marsabit and Samburu. On the whole, the trend is towards equality in enrolment in both sexes.

2.4.3 ENROLMENT IN STANDARD ONE

Standard one pupils formed the largest proportion of total primary school enrolment in any one single year, averaging about 18 per cent. In every succeeding class upwards, the proportion of girls in total enrolment declined modestly.

Total enrolment of pupils in standard one reached a figure of 918339 by 1987. This figure represented an increase of about 1 per cent over the previous year's standard one enrolment. Between 1984, Kakamega district has been enrolling over 60 thousand pupils in standard one every year. It is followed by South Nyanza and Kisii in that order. At the other extreme, Mandera and Wajir districts enrolled about 2 thousand pupils each.

TABLE 2.4b: NUMBER OF PRIMARY SCHOOL ENROLMENT BY DISTRICT

DISTRICT	1984	1985	1986	1987
KIAMBU	198657	233352	214999	219938
KIRINYAGA	89893	97104	98869	102743
MURANGA	219381	236405	243683	254666
NYANDARUA	79080	84818	85651	89793
NYERI	163362	176631	179508	180843
KILIFI	94016	102803	110307	112142
KWALE	63227	63601	68110	70587
LAMU	10453	10946	11756	12361
MOMBASA	49555	55733	56063	57816
TANA RIVER	17341	19048	21705	23876
TAITA TAVETA	48274	52072	53643	54789
EMBU	81736	87724	92588	93791
ISIOLO	7342	9008	9875	10524
KITUI	148283	153112	164111	168799
MARSABIT	9071	10958	12544	13104
MACHAKOS	343758	352743	372949	390033
MERU	222561	233712	249501	255376
GARISSA	5660	7318	9442	11540
MANDERA	5861	6761	8165	8988
WAJIR	5284	5853	5853	7773
KISII	269860	285099	294973	302577
KISUMU	155382	159806	162177	169359
SIAYA	158435	193636	179242	5185526

TABLE 2.4b CONTD.

SOUTH NYANZA	249390	269049	275413	298454
BARINGO	66497	65701	71771	72798
NAKURU	175539	185593	185075	197903
KERICHO	200805	220666	231091	238721
LAIKIPIA	40933	44219	44219	49753
NAROK	42751	49484	54009	54009
KAJIADO	31006	31132	35093	37066
SAMBURU	11744	12806	14145	14145
EGEYO MARAKWET	53261	61165	59977	62805
NANDI	98348	105566	109448	115155
TRANS NZOIA	93129	90461	92677	95217
UASIN GISHU	94277	102488	105123	109111
WEST POKOT	32587	33263	33263	40359
TURKANA	19160	21072	25830	24268
BUNGOMA	184865	196613	203614	208934
BUSIA	93012	95588	101916	105230
KAKAMEGA	337366	361738	367617	376684
NAIROBI	110901	123570	127507	133794
TOTAL	4380232	4702414	4844432	5031340

Source: Ministry of Education, Statistics Unit.

TABLE 2.4c: PERCENTAGE OF FEMALE CHILDREN ENROLLED BY DISTRICT 1984-1987.

DISTRICT	1984	1985	1986	1987
KIAMBU	48	53	49	47
KIRINYAGA	49	50	50	50
MURANG'A	49	49	50	50
NYANDARUA	49	50	50	50
NYERI	50	50	50	50
KILIFI	38	38	40	40
KWALE	43	43	42	42
LAMU	47	45	46	46
MOMBASA	48	49	47	48
TANA RIVER	42	42	42	42
TAITA TAVETA	49	49	49	49
EMBU	50	50	50	50
ISIOLO	46	42	42	43
KITUI	48	48	49	48
MARSABIT	35	35	36	36
MACHAKOS	50	50	50	50
MERU	50	50	50	50
GARISSA	32	30	29	29
MANDERA	22	22	21	24
WAJIR	33	32	32	30
KISII	49	49	50	50
KISUMU	48	48	48	48
SIAYA	48	48	47	48
SOUTH NYANZA	45	45	46	47

TABLE 2.4c CONTD.

BARINGO	48	48	48	48
NAKURU	49	48	49	49
KERICHO	48	48	48	48
LAIKIPIA	48	48	48	48
NAROK	42	42	43	43
KAJIADO	42	44	42	43
ELGEYO MARAKWET	48	49	48	49
NANDI	49	49	49	49
TRANS NZOIA	48	51	48	49
UASIN GISHU	50	49	49	49
WEST POKOT	40	40	40	39
TURKANA	35	33	35	34
BUNGOMA	51	49	50	49
BUSIA	47	46	47	47
KAKAMEGA	50	50	50	50
NAIROBI	49	49	49	49
TOTAL	48	48	48	48

SOURCE: Ministry of Education, Statistics Unit.

TABLE 2.4d: ENROLMENT IN STANDARD ONE BY DISTRICT, 1984 - 1987

DISTRICT	1984	1985	1986	1987
KIAMBU	32285	32588	33109	33947
KIRINYAGA	15258	15157	15434	16827
MURANG'A	39982	40291	40748	44133
NYANDARUA	12524	13477	13892	15252
NYERI	26379	25843	26713	27167
KILIFI	20334	20860	23116	14033
KWALE	13129	13446	13514	23189
LAMU	2520	2086	2377	2662
MOMBASA	7083	6687	7300	8315
TANA RIVER	5095	4435	6816	6601
TAITA TAVETA	8061	8134	8815	9002
EMBU	13492	14126	15882	16100
ISIOLO	1745	1860	2089	2147
KITUI	23648	24336	28995	30487
MARSABIT	1970	2823	3186	2835
MACHAKOS	61692	57359	66198	72053
MERU	45377	45449	5237	57346
GARISSA	1019	2124	2870	3508
MANDERA	1568	1724	2083	1865
WAJIR	1377	1254	1433	2075
KISII	59948	58074	60077	61626
KISUMU	32184	30760	30825	33014
SIAYA	32848	33348	35677	38807
SOUTH NYANZA	65429	64709	61350	64072

TABLE 2.4d CONTD.

BARINGO	16678	13790	13943	13845
NAKURU	28855	30073	31791	33091
KERICHO	39431	41783	43865	43664
LAIKIPIA	7356	7168	7168	8669
NAROK	10686	11631	13028	13028
KAJIADO	5847	5729	6866	7226
SAMBURU	2646	3003	3373	3373
ELGEYO MARAKWET	11947	12383	12135	12480
NANDI	20997	22282	22084	22750
TRANS NZOIA	17705	16394	16892	16660
UASIN GISHU	17623	17671	18721	19042
WEST POKOT	7147	7333	7283	8463
TURKANA	7442	7664	10353	7272
BUNGOMA	40174	38508	39765	14289
KAKAMEGA	62030	60222	62019	65026
BUSIA	22970	20106	22871	22391
NAIROBI	18178	18316	19070	20305
TOTAL	864593	848576	911949	918339

SOURCE: Ministry of Education, Statistics Unit.

2.4.4 PUPILS PER TEACHER RATIO AND ENROLMENT PER CLASS BY DISTRICT

One of the factors that determine the quality of education in primary schools is the ratio between pupils and teachers. Teachers pay closer attention to their pupils if a class is small. A low pupil/teacher ratio indicates an advancement and above average investment in education. In 1974 - 1978, the ratio was set at 40:1 in the development plans. By 1984, the average number of pupils per teacher in Kenya was approximately 36:1 and in 1987 it was 34:1

On the district level basis, Garissa and Marsabit experienced very high pupil/teacher ratios. The plausible explanation to this would be due to the lack of teachers rather than too many children per class In total, two out of every five districts had well above average pupil/teacher ratio in 1987, a situation which could be attributed to a large number of primary school age children in many parts of the country enrolled in school. These districts include Muranga, Kilifi and Siaya. There were some districts such as West Pokot and Wajir had pupil/teacher ratios below the national average. This could be due to the low enrolment of school age children in these districts.

About 34 pupils were enrolled per class in primary schools in Kenya in 1987. This figure varied from one district to another. Baringo district registered 24 pupils per class which was the lowest in the country. The highest number of pupils per class was 43 recorded in Uasin Gishu district. The districts which recorded the highest number of pupils per class include Mandera and Kajiado whose large class sizes may perhaps be due to the limited number of schools available in these districts. The distribution of enrolment per class is shown in table 2.4e.

TABLE 2.4e: ENROLMENT/CLASS BY DISTRICT, 1978

DISTRICT	ENROLMENT	NO. OF CLASSES	ENROLMENT/ CLASS
KIAMBU	219938	5887	37
KIRINYAGA	102743	2764	37
MURANG'A	254666	6545	39
NYANDARUA	89783	2639	34
NYERI	180843	4968	36
KILIFI	112142	3112	36
KWALE	70587	2162	33
LAMU	12361	445	28
MOMBASA	57816	1428	40
TANA RIVER	23876	900	26
TAITA TAVETA	24789	1553	35
EMBU	93791	2570	36
ISIOLO	10526	316	33
KITUI	168799	5322	33
MARSABIT	13104	379	35
MACHAKOS	390033	12121	32
MERU	255376	8496	30
GARISSA	11540	331	35

TABLE 2.4e CONTD.

MANDERA	8988	225	40
WAJIR	7773	277	28
KISII	302577	9544	32
KISUMU	169459	5184	33
SIAYA	185526	5562	33
SOUTH NYANZA	298454	10237	29
BARINGO	72798	3009	24
NAKURU	197903	5091	39
KERICHO	238721	1672	36
LAIKIPIA	497533	1602	31
NAROK	54009	1659	33
KAJIADO	37066	928	40
SAMBURU	14145	491	29
ELGEYO MARAKWET	62805	2097	30
NANDI	115153	3601	32
TRANS NZOIA	95217	2464	39
UASIN GISHU	109111	2553	43
WEST POKOT	40359	1594	25
TURKANA	24268	879	28
BUNGOMA	208934	6337	33
BUSIA	105320	3089	34
KAKAMEGA	376684	10479	36
NAIROBI	133794	3401	39
TOTAL	5031340	149363	34

SOURCE : Ministry of Education, Statistic Unit.

2.4.5. SECONDARY SCHOOL ENROLLMENT

Table 2.4f shows secondary school enrolment by province in 1985. We notice that about half a million Kenyan children were in secondary schools. When the school going population in each province is compared with the total population in each province, Central province is the best. It had 15 per cent of the Kenyan population but 22 per cent of the secondary school population. Other provinces that have done well are Nairobi (Comparable percentages are 5 and 7) and Western (comparable percentages are 12 and 13). The North - Eastern province with 2.4 per cent of the Kenyan population but only 0.4 per cent of the school population is ranked last. Coast province is also a problem area with 9 per cent of the country's population but only 6 per cent of the school population.

We note however that this information gives a general view of the state of secondary school enrolment. This is because the actual population in 1985 is not known and hence the 1979 Census data is used for the regional comparisons.

Secondary school enrolment ratios in Kenya are low because there are not enough secondary schools in Kenya. Table 2.4g shows that in 1983, 50 per cent of primary school leavers did not get admission into a secondary school. The situation since then has deteriorated. The districts that are hard hit are Kilifi (64 per cent without admisssion), Tana River (70 per cent), Mandera (60 per cent), Laikipia (59 per cent), Narok (62 per cent) and Turkana (75 per cent).

TABLE 2.4f : SECONDARY SCHOOL ENROLMENT BY PROVINCE, 1985

PROVINCE	ENROLMENT	POPULATION (1979 Census)
NAIROBI	31000 (7%)	828000 (5.4%)
COAST	27600 (6%)	1343000 (8.8)
NORTH EASTERN	1900 (0.4%)	374000 (2.4%)
EASTERN	75900 (17%)	272000 (17.7%)
CENTRAL	101700 (22%)	2346000 (15.3%)
RIFT VALLEY	89000 (9%)	3240000 (21.1%)
NYANZA	72100 (16%)	2644000 (17.3%)
WESTERN	59500 (13%)	1833000 (12%)
TOTAL	458700 (100%)	15327000 (100%)

SOURCE: STATISTICAL ABSTRACT, 1987.

TABLE 2.4g : ACCESS TO FORM ONE PLACES IN 1982 (%) BY DISTRICT.

PROVINCE/ DISTRICT	NO. ADMISSION	GOVT.SEC.	HARAMBEE	OTHERS
CENTRAL	50	13	30	7
KIAMBU	47	15	29	9
KIRINYAGA	51	13	29	7
MURANG'A	49	15	32	4
NYANDARUA	35	33	31	1
NYERI	50	8	35	7
COAST	59	18	15	8
KILIFI	64	16	171	3
KWALE	55	17	19	9

TABLE 2.4g CONTD.

LAMU	50	33	15	2
MOMBASA	56	22	4	18
TAITA-TAVETA	54	17	26	3
TANA-RIVER	70	25	3	2
EASTERN	51	13	27	9
EMBU	53	20	19	8
ISIOLO	53	24	16	7
KITUI	59	13	18	10
MACHAKOS	45	11	33	11
MARSABIT	49	34	7	10
MERU	55	11	28	6
NORTH EASTERN	53	46	-	1
GARISSA	46	54	-	0
MANDERA	60	39	1	0
WAJIR	55	45	-	0
NYANZA	49	19	10	22
KISII	40	11	10	39
KISUMU	47	20	12	21
SIAYA	46	20	10	24
SOUTH NYANZA	54	13	7	26
RIFT VALLEY	54	16	23	7
BARINGO	54	22	22	2
ELGEYO MARAKWET	57	15	26	2
KAJIADO	53	18	8	21
KERICHO	55	16	26	3

TABLE 2.4g CONTD

LAIKIPIA	59	14	18	9
NAKURU	55	15	20	10
NANDI	53	15	28	4
NAROK	62	15	17	6
SAMBURU	50	38	4	8
TRANS NZOIA	49	14	23	14
TURKANA	75	17	4	4
UASIN GISHU	51	17	25	7
WEST POKOT	63	17	10	10
WESTERN	43	19	29	9
BUNGOMA	44	19	29	8
BUSIA	42	34	20	10
KAKAMEGA	44	16	31	10
NAIROBI	44	36	10	10
TOTAL	50	16	26	8

SOURCE: I.L.O, 1983

2.5 ATTRITION LEVELS IN PRIMARY SCHOOLS BY STD., 1975 - 1982

From table 2.5a the attrition ratios indicate that the children promoted from standard one to standard two were consistently fewer than those promoted to other classes. Pupils who join standard two and other classes seem to be considerably higher above 80 per cent for all the years studied except 1980 when it was 77.54 per cent in standard two. However, the same can not be said of pupils in standard six because except for 1975, all those promoted to standard seven the following year were below 80 per cent. Therefore, high drop-out rates are usually witnessed in standards one and six.

The situation in standard one could be explained in two ways. Baby-sitting and looking after livestock to enable their parents to work on the farms, as Kenya is basically an agricultural country, is the major reason. Since the majority of Kenya's population is in the rural areas, there is laxity on the part of the parents to compel their children to go to school. At standard one level, children do not really know why they should go to school, so there is need to force them to go to school. It is when they are of school age that they are able to effectively do some domestic chores such as baby-sitting.

At standard six level, it could be due to child labour. Pupils drop-out to work on farms and girls who are of age in some areas such as Coast province and parts of the Rift Valley such as Narok are married off. It is also evident that in some rural areas, children are not motivated to proceed to standard seven with a view to joining form one. This is because there are no models to emulate as young people who complete their studies migrate to towns in search of jobs.

For both standard one and standard two, it is clear that the proportion of repeaters is quite high. In the former it is because of the entering behaviour which may be lacking. The children take time to learn how to read and write. Those who do not show progress are given a second or even a third chance in the same class. In standard six, repetition was intended to provide them with a strong enough foundation which would help them pass the standard seven examination in the 7 - 4 - 2 - 3 system of education. It can be envisaged that unless the Ministry of Education makes a clear policy on repetition, the same trend will continuously occur in standard seven in the 8 - 4 - 4 system of education.

In standard five, drop-out levels are consistently low. Infact in some cases, there is over-enrolment. In the rest of the classes, no clear trend is observable, but it is evident that promotion is consistently high.

TABLE 2.5a: ATTRITION RATIOS IN PRIMARY SCHOOLS BY STD. (IN %)

1975				1976			
STD.	REAP.	DROP-OUT	PROM.	STD.	REAP.	DROP-OUT	PROM.
I	4.67	17.00	78.33	I	5.99	13.86	80.45
II	3.06	16.69	80.25	II	5.47	4.88	89.65
III	4.27	8.38	87.35	III	4.00	13.87	82.13
IV	4.75	10.75	84.5	IV	5.32	10.06	84.62
V	5.73	10.03	84.24	V	4.98	6.74	88.28
VI	6.81	5.98	87.21	VI	6.42	13.88	79.70
VII	15.61	-	-	VI	14.5	-	-
		MEAN = 11.47				MEAN = 10.55	

1977

STD.	REAP.	DROP-OUT	PROM.
I	5.80	19.66	74.54
II	6.06	7.05	86.89
III	5.80	8.61	85.59
IV	4.70	13.91	81.39
V	5.21	11.09	83.70
VI	6.56	9.67	83.77
VII	9.52	-	-

MEAN = 11.665

1978

STD.	REAP.	DROP-OUT	PROM.
I	6.17	-	75.57
II	5.94	-5.75	99.81
III	6.57	-6.30	-
IV	5.96	2.14	91.90
V	5.03	4.00	90.97
VI	7.55	9.74	82.71
VI	12.32	-	-

MEAN = 3.68

1979

STD.	REAP.	DROP-OUT	PROM.
I	6.81	24.54	68.65
II	8.84	4.87	86.29
III	9.39	2.12	88.49
IV	9.63	4.12	86.25
V	8.85	0.66	90.49
VI	9.17	16.11	74.71
VII	14.04	-	-

MEAN = 8.74

1980

STD.	REAP.	DROP-OUT	PROM.
I	14.18	16.64	69.18
II	10.82	11.64	77.54
III	12.05	5.44	82.51
IV	12.84	6.12	81.04
V	12.92	0.78	86.30
VI	14.79	12.65	72.56
VI	12.70	-	-

MEAN = 8.878

1981				1982			
STD.	REAP.	DROP-OUT	PROM.	STD.	REAP.	DROP-OUT	PROM.
I	14.57	13.65	71.78	I	14.51	18.18	67.21
II.	12.63	4.89	82.48	II	14.61	18.18	67.21
III	12.24	6.59	82.17	III	12.47	4.087	83.45
IV	12.49	4.99	82.52	IV	13.30	7.16	80.54
V	13.89	-4.03	91.14	V	13.47	-3.79	82.74
VI	15.31	14.09	70.6	VI	16.86	13.93	69.21
VII	12.67	-	-	VI	12.32	-	-
		MEAN = 6.697				MEAN = 9.6	

therefore the average $\bar{M}$ = 8.9%

TABLE 2.5b: PRIMARY SCHOOL REPETITION LEVEL, 1975 - 1982

YEAR	PRIMARY ENROL.	REPEATERS	PROP.	% OF REPEATERS
1975	2881155	150919	0.5237	5.2
1976	2894617	175053	0.0605	6
1977	2974849	176913	0.0595	6
1978	2994894	198324	0.0662	7
1979	3698246	329702	0.0892	9
1980	3926629	505959	0.1289	13
1981	391162	523472	0.1315	13
1982	4184602	571115	0.1365	14
				MEAN = 9.2

The average percentage value of the drop-outs is 8.9 while that of the repetition was 9.2.

CHAPTER THREE

CONSTRUCTION OF KENYA'S LIFE TABLE USING THE FOUR - PARAMETER LOGIT LIFE TABLE SYSTEM.

In this chapter, we shall use a logit method of constructing Kenya's life table. The purpose of this life table is to define a relevant mortality situation which is required for projecting Kenya's population as a whole and then identifying the school age and school going populations which are also projected. The method used here is the four-parameter logit life table system which has two further parameters as compared to the two-parameter logit life table system. The extra parameters are used to adjust the patterns of mortality in infancy and old age. It is hoped that this method will offer further degrees of flexibility as opposed to the two -parameter logit life table system.

A relational model which is required to effect the four-parameter logit life table system is of the form:

$$l_n(x) = l_s(x) + \psi k(x) + \chi t(x) \text{ ---------------------------------- (i)}$$

where $l_n(x)$ is the derived survivorship values of age x from $l_s(x)$ which is the Brass's general standard survivorship values of age x. ψ and χ are the two additional parameters. $k(x)$ and $t(x)$ are schedules of deviations from Brass's general standard life table since the life table function $1 - l(x)$ is interpreted as the cumulative distribution function for the probability of dying by age x. Hence Brass conceived the problem of finding suitable functions to represent k(x) and t(x) as the theoretical equivalent of finding functions which alter " tails" of a probability distribution without affecting the "middle" of the distribution too much. The magnitudes of the k(x) and t(x) deviations in infancy and old age are broadly similar but they are opposite in direction in infancy and have the same direction in old age. On the whole, the effects of k(x) deviations, the magnitude of which is determined by the parameter, will be to "curve" the mortality pattern of the Brass's general standard life table, in the same direction in old age as in infancy (that is, either decrease mortality at both ends of the age scale, or increase it at both ends). On the other hand, the effects of the t(x) deviations as controlled by the parameter, will be to " twist" the mortality pattern in opposite directions at the extreme ends of the age scale.

It is by subjecting the derived survivorship values of age x, $l_n(x)$, to a logit transformation $Y_n(x) = (1/2)(\log((1-l_n(x))/l_n(x))$--(ii) and effecting a linear transformation of these logits that the other two parameters a and b, which so far are implicitly expressed in (i), are clearly seen to be connected to the two additional parameters ψ and χ. The explicit expression of the parameter a and b is found by linking Y(x) and $Y_n(x)$. Thus the relation by linear transformation is

$Y(x) = a + b\,Y_n(x)$ --(iii)

where $Y_n(x)$ is caculated from (ii).

In this chapter, we shall therefore find the appropriate values for the parameter a, b, ψ and λ which will enable us to construct the required Kenya's life table that will consequently generate the population projections under the four parameter logit life table system. The 1979 Census data is to be used for the purposes of comparison with the work done at the Central Bureau of Statistics (CBS, vol.2 analytical report, 1979). ψ and λ are determined first followed by a and b as the latter are more implicit in (i).

We divide the mortality situation into two components for each sex: infant and child mortality up to the age of 10 and the mortality of persons aged 10 and over. This is because the tenth year seems to be a convenient dividing line between childhood and adolescence through to adulthood. We then estimate the infant and childhood mortality from data on proportions of chidren dying by age of mother. For adolescence and adulthood we estimate the mortality from orphanhood data. The two components of mortality are then defined in terms of the first parameter, a, of the logit life table system. The second parameter, b, is fixed at 1 while the other two parameters are each equated to zero. The reason for defining the two components of mortality for each sex in terms of a basically two - parameter logit system as the third and fourth parameters are zero is to construct a Hybrid life table model which is suitable to the Kenyan census data and which can further be fitted to the Brass's general standard logit life table system.

To determine mortality in the first component, a method developed by Trussell is used (CBS, analytical report vol.2, 1979, p.91). The Trussell method uses different age patterns implied by the vaious "families" of the Coale -Demeny model life tables. The Proportions of children dying for each age group of mother are converted into probabilities of dying by different ages by means of regression equations; each estimate can then be related to an equivalent mortality "level" of the model life table system. The estimates of propotions dying in the first five years of life are found to be 161 per thousand for males and 151 per thousand for females.

3.1 CONSTRUCTION OF HYBRID MODEL LIFE TABLES

In this section we shall construct the hybrid model life table for both sexes based on the previous premise that the mortality of the two components be equated to the first parameter, a, while the second parameter, b, is fixed at 1 as the third and fourth parameters are each equated to zero. The relational model is then basically a two - parameter logit life table system of the form $Y(x) = a + b\ Y_S(x)$, where $Y_S(x)$ is the logit of the Brass's general standard survivorship values and $Y(x)$ is the logit of the constructed hybrid data.

From section 3.0 the proportion dying in the first five years of life is 161 per thousand for males and 151 per thousand for females. By considering the proportion of survivorship values, $l(x)$, for males and females is simply found by subtracting each of the values 0.161 and 0.151 from 1 .and their corresponding logits are computed from Y(x) = (1/2)(log1-1(x))/ l(x). The resulting logits at age five are -0.8254031 and -0.8633896 for males and females respectively. From the Brass's general life table survivorship, the logits at age five are -0.6015 and 0.0771. By substituting for the values of Y(x) and $Y_s(x)$ in the relational model (iii) and given that the parameter, b, is fixed at 1, the values are found to be -0.22 and -0.26 for males and females respectively.

At age five , the relational model for males gives Y(5) = -0.8215 whose anti - logit yields a survivorship value of 0.837927 or that the number of survivors is 8379.

Age ten is a dividing line between the two components of mortality and therefore there is discontinuity. In order to avoid this discontinuity between the infant and child mortality and adolescence through to adulthood mortality, the logit at age ten with a = -0.22 for males is found to be -0.7698; from which survivorship value is 0.8234065 or that the number of survivors is 8234. The parameter,a. for the second mortality component is given as -0.36 for males (CBS, analytical report vol.2, 1979, p.127) which gives a corresponding logit of -0.9098 so that the survivorship value is 0.8605181 and the number of survivors becomes 8605. The two numbers of survivors at age ten gives a ratio of 8234 to 8605 which is used as a multiplying factor for the survivors from ages 15 to 95. The resulting hybrid life table model for males is as shown in table 3.1a. A similar approach is adopted for the construction of the hybrid model for females. The parameter, a, for the two components of mortality for the female population are -0.26 and -0.51 respectively and the resulting model is as shown in table 3.1b.

TABLE 3.1a : HYBRID MODEL FOR KENYA'S MALE POPULATION.

AGE	HYBRID MODEL
0	10000
1	8979
5	8379
10	8234
15	8147
20	8001
25	7803
30	7599
35	7386
40	7149
45	6870
50	6525
55	6081
60	5497
65	4726
70	3740
75	2576
80	1411
85	536
90	117
95	11

TABLE 3.1b: HYBRID MODEL LIFE TABLE FOR KENYA'S FEMALE POPULATION.

AGE	HYBRID MODEL
0	10000
1	9050
5	8485
10	8347
15	8280
20	8165
25	8007
30	7843
35	7671
40	7475
45	7243
50	6948
55	6561
60	6037
65	5315
70	4340
75	3105
80	1769
85	693
90	153
95	15

3.2 FITTING THE HYBRID MODEL TO THE FOUR -PARAMETER MODEL LIFE TABLE

Having constructed the hybrid model life table which is suitable for the Kenyan data, it is now required to fit this to the four -parameter logit life table. In this section therefore, a method describing how the fitting is done is explained and the 1979 Census data is used to determine the values of the parameters relevant the Kenyan mortality situation.

A linear transformation of logits of a hybrid life table is transformed into the same general form as a model table from new standard life tables , that is, having its median age at 51 and a difference in survivorship ratios at ages 25 and 65 of -0.3616. In order to visualize this transformation we use two steps: we shall translate the logits of the hybrid model life table by bringing its median to equalize the range.

If the logits of the hybrid life table are denoted by Y(x) and those of Brass's general standard by Y(x) then the logits of the transformed life table are given by Y(x) ; whereupon

$\bar{Y}(x) = p(\emptyset + Y(x))$--------------------------------------(iv).

where $\emptyset = Y_s(51) - Y(51) = - Y(51)$, because $Y_s(51)$ =log 1/2 =0,

and $p = (Y_s(65) - Y_s(25))/ (Y(65) - Y(25))$----------------(v)

The survivorship value at age 51, l(51), and hence its logit at the same age, Y(51), are not available directly. A good estimate of

$\emptyset$ is therefore given by

$\emptyset = (Y_s(50)Y(55)-Y_s(55)Y(50))/(Y_s(55)-Y_s(50))$--(vi)

If the transformed hybrid life table is denoted by $\bar{l}(x)$, its logits, logit $\bar{l}(x) = \bar{Y}(x)$. It is by using two values of the survivorship value of $\bar{l}(x)$ at extreme ages that estimates of the parameters ψ and χ are obtained. In this section the extreme ages to be used will be 1 and 75 because at these ages estimation of ψ and χ have given consistently good results when used with data for other countries. Thus fits were produced which were a considerable improvement on those obtained by using the two - parameter system. and which were pretty close to the 'best possible' fits identified by the computerized searching procedure both in terms of parameter values and fitting criteria. A further explanation to the choice of ages 1 and 75 as the most appropriate extreme ages is that at these ages the mortality deviations k(x) and t(x) have their maximum absolute values; and that the fits obtainable from the two - parameter logit system perform poorly.

Substituting for age x by 1 and 75 in (i) we get the following: $\bar{l}(1) = l_s(1) + \psi k(1) + \chi t(1)$ --------------------(vii)

and $\bar{l}(75) = l_s(75) + \psi k(75) + \chi t(75)$----------------------(viii)

The survivorship values at ages 1 and 75 and the general standard life table happen to be related by the approximation:

$l_s(1) \simeq 1 - l_s(75)$:

which then allows use of approximations: $k(75) \simeq k(1)$ and $t(1) \simeq - t(75)$. From which $= (\bar{l}(1) + \bar{l}(75) - 1)/(2k(1))$---(ix)

$= (\bar{l}(1) - \bar{l}(75) + 1 - 2\, l_s(1))/(2t(1))$------------------(x)

The values of ψ and χ in (ix) and (x) are obtained by substituting for k(75) and t(1) in (vii) and (viii) respectively and then solving the resulting simultaneous equations.

In view of the fact that the relationships between $l_s(x)$, k(x) and t(x) at ages 1 and 75 are approximated, the resulting model life tables are bound to fit better at ages 1 and 75 rather than any other ages. To reduce this anomally, which may adversely affect the use of ψ and χ as being applicable to the entire population, average values of k(1) and k(75), t(1) and t(75) are used. The values of ψ and χ in in (ix) and (x) then become

$\psi = (\bar{l}(1)+\bar{l}(75)-l_s(1)-l_s(75))/(k(1)+k(75))$ --(xi)

and $\chi = (\bar{l}(75) - \bar{l}(1) + l_s(75) - l_s(1))/(t(75) - t(1))$ ------(xii)

From the hybrid life table 3.1a, the survivorship values at ages 50 and 55 are 0.6525 and 0.6081. From the definition of logit, the corresponding logits at ages 50 and 55 are -0.3150232 and -0.2196663. On the other hand, the logits of the survivorship values at ages 50 and 55 according to the Brass's general standard life table are -0.0212 and 0.0821. By substituting these values in (vi) we get the value of ϕ to be 0.295453.

Similarly, the survivorship values at ages 25 and 65 from the hybrid life table 3.1a are 0.7803and 0.4726; with their corresponding logits calculated to be -0.6337077 and 0.0548549. The Brass's general standard life table shows that at ages 25 and 65 their respective logits are -0.3829 and 0.3721. Through substitution of the given values in (v), p becomes 1.0964871.

From table 3.1a. the survivorship values of males at ages 1 and 75 are 0.8979 and 0.2576; and from the definition of logit. their logits accordingly become -1.087053 and 0.52924. By replacing p, α, Y(x) with the computed values in (iv) ,transformed logits at ages 1 and 75 become -0.8679791 and 0.9042652. Their anti - logits then give the transformed survivorship values of 0.8501729 and 0.1408158. The general standard life table shows survivorship values of 0.8499 and 0.1521 at ages 1 and 75 . Since the deviations from the general standard life table are approximately related as k(1) being equal to k(75) and t(1) being equal to -t(75) appendix 4 shows that k(1) is 0.0937 while the value of t(1) is 0.0954. Substituting for the values of k(1), k(75), t(1) and t(75) in (xi) and (xii) we get the values of ψ and χ as -0.0587 and -0.0606 respectively.

From the Brass's general standard life table, the survivorship value at age five is 0.7691; the computed values of and according to the Kenya's 1979 Census data are -0.0587 and -0.0606 respectively; the deviations from the Brass's general standard life table, k(x), and t(x) at age five are 0.0771 and -0.0458. By substituting these values in (i) the fitted survivorship value at age five then becomes 0.7673496. At age 60. the survivorship value from the general standard life table is 0.3965 ,k(x) is 0.0154 and t(x)is -0.013. A similar calculation to that of age five is carried out to give the fitted survivorship value, at age 60, of 0.3963838. The corresponding logits to the survivorship values at ages 5 and 60 then become -0.5967028 and 0.2102778.

The hybrid life table 3.1a shows survivorship values of 0.8379 and 0.5497 for ages 5 and 60 in that order, and by computing their logits we get -0.8213426 and -0.0997293. By solving the simultaneous equations of the logits of the hybrid life table and the fitted life table in the relational model as shown in (xiii), values of a and b are obtained. Thus if we consider the logit of the hybrid life table to be $Y_H(x)$ and that of the fitted life table by $Y_N(x)$ then the resulting simultaneous equations at ages 5 and 60 are:

$Y_H(5) = a + b\ Y_N(5)$ and $Y_H(60) = a + b\ Y_N(60)$-------------(xiii)

By substitution for the logits at ages 5 and 60 and solving the simultaneous equations the parameters a and b are found to be -0.2878 and 0.8942 respectively.

In order to construct the four - parameter model for Kenya's males, the computed values of ψ and χ the survivorship values of the Brass's general standard life table and their deviations k(x) and t(x) values shown in appendix 4 are substituted in (i); then a logit transformation got from (ii) and a linear transformation is carried out by making use of the computed values of a and b. The anti - logit of the linear transformation gives the survivorship values of the four - parameter life table model. For example, at age 1 the survivorship value is 0.8499, ψ is - 0.0587, k(1) is 0.0937, χ is -0.0606 and t(1) is -0.0964. When these values are substituted in (i), the transformed survivorship value at age 1 becomes 0.8502416 whose logit is -0.8682487. From the relatonal model a and b were found to be -0.2878 and 0.8942. The logit of the transformed hybrid model at age 1 becomes -

1.064188: whose anti - logit is found to be 0.8936. This survivorship value implies the number of survivors to be 8936. The rest of the values are similarly computed and the results are shown in table 3.2a.

From the hybrid life table model, as shown in table 3.2b. the survivorship value at age 50 is 0.6948 whose logit becomes -0.4113283 and from the Brass's general standard life table the the survivorship value at the same age has logit of -0.0212. From the same hybrid life table, the survivorship value at age 55 is 0.6561 and its logit is -.3229811. The corresponding survivorship value from the general standard life table has logit of 0.0821. By substituting these values in (vi) the computed value of 0 for female population becomes 0.393197. The calculation of the value of p for the female population follows from a hybrid life table survivorship of 0.8007 at age 25 and whose logit is therefore -0.6953375. Further more. the survivorship at age 65 is given as 0.0630835. The corresponding general standard life table values of logits at ages 25 and 65 are -0.3829 and 0.3721. The computed value of p of 1.1941403 is obtained from substituting the logits at ages 25 and 65 in (v).

The hybrid life table survivorship values for females of 0.9050 at age 1 whose logit of -1.127029 lends to the calculation of the transformed logit value at age 1 whose value then becomes -0.8762984. Similarly, the survivorship value at age 75 of 0.3105 whose logit is 0.3988914 leads to a transformed logit of 0.9458646. The anti - logits of the transformed values at ages 1 and 75 are 0.8522801 and 0.1310474. Substitution of the computed values in (xi) and (xii) leads to -0.097864 and -0.1228 for ψ and χ respectively.

From the general standard life table by Brass, survivorship values of 0.7691 and 0.3965 for ages 5 and 60 are obtained. The k(x) and t(x) tables give the values of the deviations as 0.0771, -0.0458 and 0.0154, -0.013 for ages 5 and 60 respectively. These values along with ψ and χ for females when substituted in (i) give the transformed survivorship values at ages 5 and 60 as 0.767189 and 0.3965893. It is by the substitution of the corresponding logits of the transformed and hybrid survivorship values at ages 5 and 60 in (xiii) and solving the simultaneous equations that the a and b values become -0.3799 and 0.8076 respectively. The four - parameter life table for the female population is obtained in a similar manner to that of the male population and the results are as shown in table 3.2b.

TABLE 3.2a: FOUR - PARAMETER LOGIT LIFE TABLE MODEL FOR KENYA'S MALE POPULATION IN 1979

AGE	FOUR - PARAMETER MODEL
0	10000
1	8936
5	8379
10	8248
15	8150
20	7988
25	7773
30	7558
35	7339
40	7099
45	6823
50	6486
55	6058
60	5497
65	4751
70	3777
75	2608
80	1438
85	573
90	143
95	18

TABLE 3.2b: FOUR - PARAMETER LOGIT LIFE TABLE MODEL FOR KENYA'S FEMALE POPULATION IN 1979

AGE	FOUR - PARAMETER MODEL
0	10000
1	8981
5	8485
10	8370
15	8285
20	8145
25	7962
30	7780
35	7597
40	7396
45	7166
50	6885
55	6523
60	6037
65	5360
70	4412
75	3172
80	1817
85	757
90	209
95	33

3.3 KENYA'S POPULATION PROJECTIONS USING THE FOUR - PARAMETER MODEL LIFETABLE

In this section we shall project the whole population, the school age population and the school going population. The results of the projected numbers are shown in tables 3.3a and 3.3b. The five year age groups are then transformed into single years of age by using the Sprague multipliers. The results obtained are shown in tables 3.3c and 3.3d.

TABLE 3.3a: PROJECTED MALE POPULATION IN FIVE YEAR AGE -GROUPS (IN 000'S) --- PROJECTION ONE

AGE	1979	1984	1989	1994	1999	2004
0-4	1735	1157	1418	1842	2462	3023
5-9	1364	2730	1821	2231	2898	3874
10-14	1091	1345	2692	1796	2200	2858
15-19	821	1074	1324	2649	1767	2165
20-24	649	802	1049	1293	2587	1726
25-29	513	631	780	1020	1258	2516
30-34	416	498	613	758	991	1222
35-39	340	403	483	594	735	960
40-44	276	328	389	466	573	709
45-49	225	264	314	372	445	548
50-54	178	212	249	292	351	419
55-59	139	164	195	229	273	323
60-64	105	123	145	173	203	242
65-69	75	87	102	121	144	169
70-74	46	56	65	76	91	108
75-79	41	29	35	41	48	58
Total	7984	9903	11674	13953	17026	20920

TABLE 3.3b: PROJECTED FEMALE POPULATION IN FIVE YEAR AGE GROUPS. (IN 000'S) --- PROJECTION ONE

AGE	1979	1984	1989	1994	1999	2004
0-4	1690	1105	1354	1759	2351	2887
5-9	1338	2712	1773	2173	2823	3773
10-14	1083	1322	2680	1752	2147	2789
15-19	823	1068	1304	2644	1728	2118
20-24	661	807	1045	1278	2592	1694
25-29	538	646	789	1021	1249	2533
30-34	439	526	631	771	997	1220
35-39	360	428	513	615	752	972
40-44	294	350	416	498	597	730
45-49	245	284	338	401	481	576
50-55	192	234	271	323	383	459
55-59	151	180	219	254	303	359
60-64	117	137	163	199	230	275
65-69	84	100	117	140	171	197
70-74	55	65	78	91	109	133
75-79	52	36	43	51	60	72
Total	8122	10000	11734	13970	16973	20787

From table 3.3a and 3.3b the total population for males in each year take the following values in successive five year intervals from 1979: 8014000, 9903000, 11674000, 13953000, 17026000 and by the year 2004, the population would be 20,920,000. The corresponding values for females ar 8122000, 10.000.000, 11734000, 13970000, 16973000 and by the year 2004, the whole female population would be 20787000.

From 1979 to the year 2004, the increase in male population is close to twice the value it was originally; while the increase in the female population in the year 2004 was close to three times what it was in 1979.

TABLE 3.3c: PROJECTED SCHOOL AGE FEMALE POPULATION IN SINGLE YEARS (IN 000'S) --- PROJECTION ONE

AGE	1979	1984	1989	1994	1999	2004
5	291	569	266	459	584	775
6	279	583	304	455	585	782
7	267	566	372	441	574	770
8	256	526	401	421	554	743
9	246	468	451	397	527	704
10	236	390	506	364	495	654
11	227	292	572	317	459	593
12	218	222	594	304	425	541
13	207	204	548	347	396	510
14	195	216	460	422	372	491
15	183	219	377	488	346	470
16	172	223	287	561	311	451
17	163	222	223	588	306	429
18	155	211	204	543	348	400
19	149	192	213	453	417	369
Total for ages 6-13 years	1936	3251	3748	3046	4015	5297

TABLE 3.3d: PROJECTED SCHOOL AGE MALE POPULATION IN SINGLE YEARS

(IN 000'S) --- PROJECTION ONE.

AGE	1979	1984	1989	1994	1999	2004
5	298	573	278	472	601	798
6	285	587	315	467	601	803
7	272	570	360	453	589	790
8	260	529	409	432	568	761
9	249	471	458	407	540	722
10	238	394	511	374	507	670
11	230	297	574	327	470	608
12	219	227	595	313	435	555
13	208	207	549	354	406	519
14	195	220	462	428	382	503
15	184	222	380	493	355	481
16	172	225	292	564	320	461
17	162	223	228	591	315	438
18	154	211	208	546	355	408
19	148	194	216	455	421	377
Total 6-13 years	1961	3282	3771	3127	4116	5428

From the total projected population in each year in 3.3c and 3.3d for females and males aged 6-13 years respectively starting from 1979 to 2004, increasing in five year intervals are as follows: 1936000, 3251000, 3748000, 4015000 and 5297000 for females and for males, we have 1961000, 3282000, 3771000, 3127000, 4116000, 5428000. The tables also give the females and males aged 14-19 years together whose population is: 2032000, 2579000, 355000, 6132000, 4248000 and 528000 by the year 2004. In the former case, the population of school age 6-13 increases by about five times from the year 1979 to the year 2004; while in the latter case, the increase is correspondingly close to three times..

TABLE 3.3e : PROJECTED MALE POPULATION IN FIVE YEAR AGE GROUPS (IN 000'S) --- PROJECTION TWO

AGE	1979	1984	1989	1994	1999	2004
0-4	1735	1980	2976	4038	5544	7283
5-9	1364	1624	1541	1982	2350	2796
10-14	1091	1345	1602	1520	1955	2318
15-19	821	1074	1324	1577	1496	1924
20-24	649	802	1049	1293	1540	1461
25-29	513	631	780	1020	1258	1498
30-34	416	498	613	758	991	1222
35-39	340	403	483	594	735	960
40-44	276	328	389	466	573	709
45-49	225	264	314	372	445	548
50-54	178	212	249	296	351	419
55-59	139	164	195	229	273	323
60-64	105	123	145	173	203	242
65-69	75	87	105	121	144	169
70-74	46	56	65	76	91	108
75-79	41	29	35	41	48	58
TOTAL	8014	9620	11865	14556	17997	20038

TABLE 3.3f: PROJECTED FEMALE POPULATION IN FIVE YEAR AGE GROUPS (IN 000'S) ---PROJECTION TWO

AGE	1979	1984	1989	1994	1999	2004
0-4	1690	4751	3267	6294	8485	9963
5-9	1338	934	1551	1977	2331	2831
10-14	1083	1322	923	1533	1953	2303
15-19	823	1068	1304	911	1512	1927
20-24	661	807	1047	1278	893	1482
25-29	538	646	789	1024	1250	873
30-34	439	526	631	771	1000	1221
35-39	360	428	513	615	752	975
40-44	294	350	416	498	597	730
45-49	245	284	338	401	481	576
50-54	192	234	271	323	383	459
55-59	151	180	219	254	303	359
60-64	117	137	163	199	230	275
65-69	84	100	117	140	171	197
70-74	55	65	78	91	109	133
Total	8070	11832	13616	16309	20450	24304

The tables 3.3e and 3.3f show male and female population. Their total projected estimates in each year listed above from 1979 to the year 2004 in five year intervals respectively are: 8014000. 9620000. 11865000, 14556000, 17997000 and by the year 2004 it will be 22038000. Similarly, for females we have: 8070000. 11832000, 13616000, 16309000. 2045000 and 24304000.

This is also a clear indication of an upsurge in population since from 1979, the male population would increase by just two times and the female population would increase by three times in the year 2004.

TABLE 3.3g: PROJECTED SCHOOL AGE FEMALE POPULATION IN SINGLE YEARS (IN 000'S) ---PROJECTION TWO

AGE	1979	1984	1989	1994	1999	2004
5	291	238	461	572	690	833
6	279	188	364	443	527	641
7	267	165	290	364	420	513
8	256	164	236	317	359	438
9	246	179	200	294	335	240
10	236	212	180	298	348	409
11	227	263	172	330	397	466
12	218	295	176	341	428	499
13	207	266	188	310	415	484
14	195	283	206	254	368	346
15	183	242	231	213	344	415
16	172	226	262	175	332	401
17	163	210	281	157	312	387
18	155	199	275	168	281	371
19	149	191	255	199	244	354
Total for age 6-13 years	1936	1732	1806	2697	3229	3690

TABLE 3.3h: PROJECTED SCHOOL AGE MALE POPULATION IN SINGLE YEARS (IN 000'S) --- PROJECTION TWO

AGE	1979	1984	1989	1994	1999	2004
5	298	350	349	494	595	733
6	285	337	315	432	508	611
7	272	324	296	384	448	527
8	260	312	289	348	410	475
9	249	301	292	324	390	449
10	238	290	303	309	396	449
11	230	280	325	316	407	474
12	219	269	337	301	378	552
13	208	258	329	302	392	471
14	195	326	308	305	354	438
15	184	237	291	311	326	417
16	172	226	276	322	359	406
17	162	216	263	326	286	390
18	154	204	252	317	242	368
19	148	192	142	300	296	343
Total for Ages 6-13 years	1961	2371	2486	2716	3329	4008

Tables 3.3g and 3.3h give the following total population estimates in each year listed above from 1979 and increasing in five year intervals for those females and males aged 6-13 years respectively: 1936000, 1732000, 1806000, 2697000, 3229000, 3690000; while for the males we would have: 1305000, 1961000, 2371000, 2486000, 2716000, 3329000, 4008000. Similarly, the 14-

19 olds in the same order, but this time for both females and males we have: 2032000, 2752000, 3142000, 3357000, 3744000 and 4636000. In all the cases, the original population estimates in 1979 will have increased close to twice by the year 2004.

TABLE 3.3i: PROJECTED MALE POPULATION IN FIVE YEAR AGE GROUPS (IN 000'S) ---PROJECTION THREE

AGE	1979	1984	1989	1994	1999	2004
0-4	1735	1908	2761	3632	4781	5945
5-9	1364	1624	1485	1839	2114	2471
10-14	1091	1345	1602	1465	1814	2085
15-19	821	1074	1324	1577	1442	1785
20-24	649	802	1049	1293	1540	1408
25-29	513	631	780	1020	1258	1498
30-34	416	498	613	758	991	1222
35-39	340	403	483	594	735	960
40-44	276	328	389	466	573	709
45-49	225	264	314	372	445	548
50-54	178	212	249	296	351	419
55-59	139	164	195	229	273	323
60-64	105	123	145	173	203	242
65-69	75	87	102	121	144	169
70-74	46	56	65	76	91	108
75-79	41	29	35	41	48	58
Total	8014	9548	11556	13962	16803	19950

TABLE 3.3j: PROJECTED FEMALE POPULATION IN FIVE YEAR AGE GROUPS (IN 000'S) ---PROJECTION THREE

AGE	1979	1984	1989	1994	1999	2004
0-4	1690	3148	4408	5660	7317	8968
5-9	1338	934	1494	1834	2096	2442
10-14	1083	1322	923	1476	1812	2071
15-19	823	1068	1304	911	1456	1788
20-24	661	807	1047	1278	893	1427
25-29	538	646	789	1024	1250	873
30-34	439	526	631	771	1000	1221
35-39	360	428	513	615	752	975
40-44	294	350	416	498	597	730
45-49	245	284	338	401	481	576
50-54	192	234	271	323	383	459
55-59	151	180	219	254	303	359
60-64	117	137	163	199	230	275
65-69	84	100	117	140	171	197
70-74	55	65	78	91	109	133
Total	8070	10229	12711	15475	18850	22494

From tables 3.3i and 3.3j the male and female population estimates in five year intervals starting from 1979 through to the year 2004 respectively are: 8014000, 9548000, 11556000, 13962000, 16803000, and 19950000 in the year 2004. For females we have: 8070000, 10229000, 12711000, 15475000, 18850000 and 22494000. The male population increases by close to 2 times from 1979 to the year 2004 while the female population will have gone up by about 3 times its original value in the year 2004.

TABLE 3.3k: PROJECTED SCHOOL AGE FEMALE POPULATION IN SINGLE YEARS (IN YEARS 000'S) ---PROJECTION THREE

AGE	1979	1984	1989	1994	1999	2004
5	291	234	437	509	607	726
6	279	187	348	407	469	553
7	267	166	280	339	380	439
8	256	166	231	299	329	374
9	246	181	198	280	311	349
10	236	213	179	285	323	363
11	227	263	186	316	367	416
12	218	294	176	328	394	451
13	207	289	188	299	382	440
14	195	262	228	248	346	401
15	183	242	231	257	326	380
16	172	226	262	174	317	370
17	163	210	280	172	301	359
18	155	199	275	170	273	346
19	149	191	255	200	239	333
Total for Age 6-13 Years	1936	1759	1789	2553	2955	

TABLE 3.31: PROJECTED SCHOOL AGE MALE POPULATION IN SINGLE YEARS (IN 000'S) ---PROJECTION THREE

AGE	1979	1984	1989	1994	1999	2004
5	298	347	329	452	525	630
.6	285	336	300	398	453	535
7	272	325	286	356	404	469
8	260	313	218	326	374	429
9	249	301	288	306	358	419
10	238	291	301	294	359	406
11	230	280	325	289	376	425
12	219	269	338	289	382	434
13	208	258	330	294	364	422
14	195	247	309	299	332	397
15	184	237	292	308	309	382
16	172	226	277	322	345	374
17	162	216	262	327	276	362
18	154	204	251	319	279	344
19	148	192	242	302	291	323
Total for Age 6-13 Years	1961	2373	2386	2552	3050	3539

Tables 3.3k and 3.31 give the following estimates from 1979 and increasing in five year intervals for those females and males aged 6-13 years respectively: 1936000, 1759000, 1789000, 2553000, 2955000, 3385000. For males we would have: 1961000, 2373000, 2386000, 2552000, 3050000 and 3539000. It is clear that the 6-13 year olds in their sex groups will increase by about 3 times in the year 2004 compared to the value it was in 1979.

TABLE 3.3.1a: PRIMARY SCHOOL ENROLMENT/INTAKE RATES-PROJECTION ONE
GIRLS

YEAR (1)	ENROL. POP. (2)	FEM. SCH. AGE POP.6-13YRS. (3)	INTAKE RATE (2) / (3)
1969	519470	1240000	0.42
1979	1744896	1936000	0.90
1984	2110992	3251000	0.65

BOYS

YEAR (1)	ENROL. POP. (2)	MALE SCH. AGE POP. 6-13 YRS. (3)	INTAKE RATE (2) / (3)
1969	762827	1305000	0.58
1979	1953350	1961000	1.00
1984	2269240	3282000	0.69

TABLE 3.3.1b: SECONDARY ENROLMENT/INTAKE RATES-PROJECTION ONE.

BOYS AND GIRLS

YEAR (1)	ENROL. POP. (2)	SCHOOL AGE POP. 14-19 YRS. (3)	INTAKE RATE (2) / (3)
1969	115246	1354000	0.90
1979	384389	2032000	0.19
1984	510943	2579000	0.20

Tables 3.3.1a and 3.3.1b show the computed intake rates, which are then plotted against time in years to give the estimated intake rates by using the method of least squares.

The best line of fit for the enrolment of girls under projection one is found to be $a = 0.048t + 0.42$. The corresponding estimated intake rates for every successive five year intervals are 0.42, 0.90, 1.14, 1.38, 1.62, 1.86 and 2.10. The projected female population enrolled in school would then be obtainable from the product between the estimated intake rates and the corresponding school age female population. The results for the computation are shown in table 3.3.1c.

The best line of fit for the enrolment of boys under projection one is a = 0.0214t + 0.58. The estimated intake rates are then 0.58, 0.794, 0.901, 1.008, 1.115, 1.222 and 2.329. The computed projections of enrolment of boys in the period between 1969 and 2004 is shown in table 3.3.1d.

Starting with about 800 thousand boys in 1969, we would have the enrolment approximation of boys in subsequent five year intervals as: 1.6 millions, 3.0 millions, 3.8 millions, 3.5 millions, 5.0 millions and 7.0 millions . This means that we would have a rapid increase by the turn of the century.

On the other hand, if the 8.9 percent drop-out value is used the estimates for boys reduce to the following: 0.7 million, 1.4 million, 2.7 million, 3.5 million, 3.2 million, 4.6 million, 6.6 million in the five year intervals through to the year 2004. In the last ten years, we would have a rapid increase of 1.4 million and 2.0 million respectively.

TABLE 3.3.1d: THE PROJECTED NUMBER OF MALE ENROLMENTS IN PRIMARY SCHOOL ---PROJECTION ONE.

YEAR	MALE POP. AGED 6-13 YRS.	EST.INTAKE RATE	PROJ.NO. OF ENROLMENT
(1)	(2)	(3)	(2) x (3)
1969	1305000	0.58	756900
1979	1961000	0.794	1557034
1984	3282000	0.901	2957082
1989	3771000	1.008	3801168
1994	3127000	1.115	3486605
1999	4116000	1.222	5029752
2004	5428000	1.329	7213812

The best line of fit for secondary school boys and girls enrolling under projection one is a = 0.0084t + 0.09. This gives the following intake rates: 0.09, 0.174, 0.216, 0.258, 0.3, 0.342, 0.384. The resulting projections of the number of the boys and girls that would be enrolled in secondary schools is shown in table 3.3.1e.

TABLE 3.3.1e: THE PROJECTED NUMBER OF ENROLMENTS IN SECONDARY SCHOOL -- PROJECTION ONE.

YEAR (1)	POP.AGED 14-19 YRS. (2)	EST.INTAKE RATE (3)	PROJ. NO. OF ENROL. (2) x (3)
1969	1354000	0.090	122860
1979	2032000	0.174	353568
1984	2579000	0.216	557064
1989	3550000	0.258	915900
1994	6132000	0.300	1839600
1999	4248000	0.342	1452816
2004	5278000	0.384	2026752

In approximate terms, if we started with 100 thousand boys and and girls enrolling in secondary schools, the other figures of enrolments in subsequent five year intervals would be 350 thousands, 560 thousands, 920 thousands, 1.8 millions, 1 million and 2 millions. This means that there would be gradual increase in the enrolment of the school age population at the secondary school level.

TABLE 3.3.2a: PRIMARY SCHOOL ENROLMENT/INTAKE RATES-PROJECTION TWO.

GIRLS

YEAR (1)	ENROL.POP. (2)	FEM. SCH.AGE 6-13 YRS. (3)	INTAKE RATE (2) / (3)
1969	519470	1240000	0.42
1979	1744896	1936000	0.90
1984	2110992	1732000	1.22

BOYS

YEAR (1)	ENROL. POP. (2)	MALE AGE POP. 6-13 YRS. (3)	INTAKE RATE (2) / (3)
1969	762827	1305000	0.58
1979	1953350	1961000	1.00
1984	2269240	2371000	0.96

TABLE 3.3.2b: SECONDARY SCHOOL ENROLMENT INTAKE RATES-PROJECTION TWO.

YEAR (1)	ENROL . POP. (2)	FEM. SCH. AGE 6-13 YRS. (3)	INTAKE RATE (2) / (3)
1969	115246	1354000	0.09
1979	384389	2032000	0.19
1984	510943	2752000	0.19

Tables 3.3.2a and 3.3.2b show the computed intake rates which are then plotted against time in years to give the estimated intake rates by using the method of least squares.

The best line of fit for girls under projection 2 is a = 0.051t + 0.42. The estimated intake rates are then given as: 0.42, 0.93, 1.185, 1.44, 1.695, 1.95, 2.205. Using these intake rates, we would have the resulting projected enrolments as shown in table 3.3.2c.

TABLE 3.3.2c: PROJECTED NUMBER OF GIRLS IN PRIMARY SCHOOLS -- PROJECTION TWO.

YEAR (1)	FEM. POP. AGED 6-13 YRS (2)	EST. INTAKE RATE (3)	PROJ.NO. OF ENROL (2) x(3)
1969	1240000	0.42	520800
1979	1936000	0.93	1800480
1984	1732000	1.185	2052420
1989	1806000	1.44	2600640
1994	2697000	1.695	4571415
1999	3229000	1.95	6296550
2004	3690000	2.205	8136450

Table 3.3.2c shows that the approximate projected number of girls in the respective years would be 500 thousands. 1.8 millions. 2.1 millions, 2.6 millions, 4.6 millions, 6.3 millions and 8.1 millions. This would mean a rapid increase in the enrolments of girls towards the end of the twentieth century.

The best line of fit for the enrolment of boys under projections 2 and 3 is a = 0.042t + 0.58. The estimated intake rates are then as follows: 0.58, 1.00 1.21, 1.42, 1.63, 1.84 and 2.05. The corresponding projected numbers of boys enrolled in primary schools are computed and listed in tables 3.3.2d and 3.3.2e.

TABLE 3.3.2d: PROJECTED NUMBER OF BOYS IN PRIMARY SCHOOLS - PROJECTION TWO

YEAR	MALE POP. AGED 6-13 YRS.	EST. INTAKE RATE	PROJ. NO. OF ENROLMEMT
(1)	(2)	(3)	(2) / (3)
1969	1305000	0.58	756900
1979	1961000	1.00	1961000
1984	2371000	1.21	2868910
1989	2486000	1.42	3530120
1994	2716000	1.63	4427080
1999	3329000	1.84	6125360
2004	4008000	2.05	821640

TABLE 3.3.2e : PROJECTED NUMBER OF BOYS IN PRIMARY SCHOOLS - PROJECTION THREE

YEAR	MALE POP. AGED 6-13 YRS.	EST. INTAKE RATE	PROJ. NO. OF ENROL.
(1)	(2)	(3)	(2) x (3)
1969	1305000	0.58	756900
1979	1961000	1.00	1961000
1984	2373000	1.21	2871330
1989	2386000	1.42	3388125
1994	2552000	1.63	4159760
1999	3070000	1.84	5648800
2004	3539000	2.05	7254950

Under projection 2. the projected enrolments for boys would be as follows: 1.2 millions, 2.9 millions, 3.5 millions, 4.4 millions, 6.1 millions and 8.2 millions. On the other hand, the projected enrolments for boys under projection 3 would be 2 millions. 2.9 millions. 3.4 millions. 4.2 millions. 5.6 millions and 7.3 millions. It is clear here that there is apparent indication of a rapid increase in the enrolment of boys in primary schools whichever assumption is used.

If a drop-out value of 8.9 percent is used, then the following estimates correspondingly for females and males aged 6-13 years are: 0.5 million, 1.6 million, 1.9 million, 2.4 million, 4.2 million. 5.7 million and 7.4 million. For boys we have: 0.7 million, 1.8 million, 2.6 million. 3.2 million, 4.0 million. 5.6 million. 7.5 million. Thus. in the last ten years we would have an increase of 1.5 million. 1.7 million for females and 1.6 million. 1.9 million for males.

TABLE 3.3.3a: PRIMARY SCHOOL ENROLMENT/INTAKE RATES

PROJECTION THREE.

GIRLS

YEAR (1)	ENROL. POP. (2)	FEM. SCH. AGE 6-13 YRS. (3)	INTAKE RATE (2) / (3)
1969	519470	1240000	0.42
1979	1744896	1936000	0.90
1984	2110992	1759000	1.20

BOYS

YEAR (1)	ENROL. POP. (2)	MALE SCH. AGE POP. 6-13 YRS. (3)	INTAKE RATE (2) / (3)
1969	762827	1305000	0.58
1979	1953350	1961000	1.00
1984	2269240	2373000	0.96

TABLE 3.3.3b : SECONDARY SCHOOL ENROLMENT - PROJECTION THREE

YEAR	ENROL. POP.	SCHOOL AGE 6-13 YRS.	INTAKE RATE
1969	115246	1354000	0.09
1979	384389	2032000	0.19
1984	510943	2652000	0.19

Tables 3.3.3a and 3.3.3b show the computed intake rates, which are then plotted against time in years to give the estimated intake rates by using the method of least square.

The best line of fit for girls under projection 3 is given by a = 0.05t + 0.42. The estimated intake rates are then as follows: 0.42, 0.92, 1.17, 1.42, 1.67, 1.92, 2.17. The projected number of girls would be as shown in table 3.3.3c.

Starting with a population of about 500 thousand girls in 1969, the figure would subsequently increase to the following values 1.8 millions, 2.1 millions, 2.5 millions, 4.2 millions, 5.7 millions and by the year 2004, it is would be expected to be about 7.3 millions. This points to a rapid increase in enrolment of girls in primary schools at the beginning of the twenty first century.

TABLE 3.3.3c: PROJECTED NUMBER OF GIRLS IN PRIMARY SCHOOL-
PROJECTION THREE.

YEAR	FEM. POP. AGED 6 -13 YRS.	EST. INTAKE RATES	PROJ. ENROL.
1969	1240000	0.42	520800
1979	1936000	0.92	1781120
1984	1759000	1.17	2058030
1989	1789000	1.42	2540380
1994	2553000	1.67	4263510
1999	2955000	1.92	5673600
2004	3385000	2.17	7345450

The best line of fit for boys and girls in secondary school under projections 2 and 3 is a = 0.01t + 0.09. The estimated intake rates are then 0.09, 0.19. 0.24. 0.29. 0.34, 0.39 and 0.44. The projected numbers of boys and girls that would be enrolled in secondary schools are as shown in tables 3.3.3d and 3.3.3e.

From tables 3.3.3d and 3.3.3e, it is clear that whether projection 2 or projection 3 fertility and mortality schedules are followed there, is hardly any significant contribution to the students enrolling in secondary school. In other words, for both projections, the number that would enrol by the year 2004 would be just about 2 millions in either case.

If a drop-out value of 8.9 percent is used, then the following estimates correspondingly to females and males aged 6-13 years increasing in five year intervals to the year 2004 are respectively 0.5 million, 1.6 million 1.9 million, 2.3 million, 3.9 million, 5.2 million, 6.7 million and for males we have: 0.7 million, 1.8 million, 2.6 million, 3.1 million, 3.8 million, 5.2 million, 6.6 million.

The increase in the last ten years is as follows: 1.3 million, 1.5 million and 1.4 million, 1.4 million. There would be a gradual increase of an average of 1.4 million for both girls and boys in primary school.

TABLE 3.3.3d: PROJECTED NUMBER OF BOYS AND GIRLS IN SECONDARY SCHOOL -PROJECTION TWO.

YEAR	POP. AGED 14 -19 YRS.	EST. INTAKE RATES	PROJ. ENROL
1969	1354000	0.09	121860
1979	2032000	0.19	386080
1984	2752000	0.24	660480
1989	3142000	0.29	911180
1994	3357000	0.34	1141380
1999	3744000	0.39	1460160
2004	4636000	0.44	2039840

TABLE 3.3.3c : PROJECTED NUMBER OF BOYS AND GIRLS IN SECONDARY SCHOOL - PROJECTION THREE.

YEAR	POP. AGED 14-19 YRS.	EST. INTAKE RATES	PROJ. ENROL.
1969	1354000	0.09	121860
1979	2032000	0.19	386080
1984	2652000	0.24	636480
1989	3164000	0.29	917560
1994	3098000	0.34	1053320
1999	3634000	0.39	1417260
2004	4371000	0.44	1923240

3.4.0 MINIMIZATION OF INCIDENTAL INFLUX IN SCHOOL ENROLMENT IN PRIMARY SCHOOLS

Serious incidental influx in enrolment subsequent drop-outs were witnessed just in and after 1963, 1974 and 1978 due to political agitation for manpower training from the grassroots; abolition of fees in lower primary, and the introduction of the milk scheme in respective years. Heavy drop-outs came into being due to increased levies such as school building fund.

It has therefore become necessary to look at the trend of enrolment especially in primary school when these incidental cases are reduced through further interpolatory and extrapolational techniques. The period 1969 and 1973 was identified as the most stable (Ministry of Education Annual Reports, 1973 and 1984, see Appendix 3). For boys, the formula

$$Pi = 762827 + (ti - 1969)\frac{[1025113 - 762827]}{(1973 - 1969)}$$

which transformed the values 762827 in 1969, 1953350 in 1979 and 2269240 in 1984 to 762827 in 1969, 1418582 and 1746400 in 1984.

Similarly, the formula for girls which was

$$Pi = 519470 + (ti - 1969)\frac{[790904 - 519470]}{(1973 - 1969)}$$

which then gave the values as 519470 for 1969, 1198055 in 1979 and 1537348 in 1984.

By using the above values and using the best line of fit which is through the median of the distance between the upper two values from the intial point since we are using a minimal number of points, the resulting equation for boys under projection one is:

$a = 0.58 + 0.0041t.$

The estimated intake rates from 1969 in five year intervals through to the year 2004 are 0.58, 0.60, 0.62, 0.64, 0.66, 0.68, 0.80 and 0.72. The resulting projected values then become 756900, 1215820, 2100480, 248860, 2126360, 2881200 and 3908160. In approximate terms in millions, these values are 0.8 million, 1.2 million, 2.1 million, 2.5 million, 2.1 million, 2.9 million and 3.9 million (table 3.4a). The increase in the last ten years then become 0.8 million and 1.0 million.

If a drop-out percentage of 8.9 is used, then the projected values reduce further to: 0.7 million, 1.1 million, 1.9 million, 2.3 million, 1.9 million, 2.6 million and 3.6 million.

. Under projection two, the boys enrolment estiamtes from the equation a = 0.58 + 0.012t and the corresponding estimated intake rates were: 0.8 million, 1.4 million, 1.8 million, 2.0 million, 2.4 million, 3.1 million and 4.0 million (see table 3.4b). A further decrease to the following values if a drop-out of 8.9 percent is used: 0.7 million, 1.3 million, 1.6 million, 1.9 million, 2.2 million, 2.9 million and 3.7 million.

Finally, under projection three, the following equation a = 0.58 + 0.012t which led to the following estimates for boys aged 6-13 years: 0.8 million, 1.4 million, 1.8 million, 2.0 million, 2.2 million, 2.9 million and 3.5 million (see table 3.4c).

When drop-outs of 8.9 percent are considered, then we have 0.7 million, 1.7 million, 1.8 million, 2.0 million, 2.6 million, and 3.2 million.

Under projection one, the estimates for girls in primary school from

a = 0.42 + 0.0091t are: 0.5 million, 1.0 million, 1.8 million, 2.2 million, 2.0 million 2.8 million, 3.9 million. If a drop-out percentage of 8.9 percent is used, then we have: 0.5 million, 0.9 million, 1.7 million, 2.0 million, 1.8 million, 2.5 million and 3.6 million.

Under projection two, the estimates for girls in primary school from

$a = 0.42 + 0.025t$,

which would lead to the following estimates: 0.5 million, 1.3 million, 1.4 million, 1.7 million, 2.9 million, 3.9 million and by the year 2004, it will be 4.9 million. The 8.9 percent drop-out will reduce the estimates to 0.5 million, 1.2 million, 1.3 million, 1.5 million, 2.6 million and 3.4 million.

Under projection three, the estimates for girls in primary school from

$a = 0.42 + 0.026t$ which would lead to the following estimates: 0.5 million, 1.3 million, 1.4 million, 1.6 million, 2.6 million, 3.4 million and 4.4 million. When a drop-out percentage of 8.9 percent is used, the estimates accordingly reduce to 0.5 million, 1.2 million, 1.3 million, 1.5 million, 2.4 million 3.1 million and by the year 2004, it will be 4.0 million.

PROJECTION ONE

TABLE 3.4a:

YEAR	SCHOOL GOING POP. UNADJUSTED FOR INCIDENTAL INFLUX		SCHOOL GOING POP. ADJUSTED FOR INCIDENTAL INFLUX	
	MALE (IN MILLION)	FEMALE IN MILLION)	MALE (IN MILLION)	FEMALE IN MILLION)
1979	1.6	1.7	1.2	1.0
1984	3.0	3.7	2.1	1.8
1989	3.8	5.2	2.5	2.2
1994	3.5	4.9	2.1	2.0
1999	5.0	7.5	2.9	2.8
2004	7.0	11.1	3.9	3.9

PROJECTION TWO

TABLE 3.4b:

YEAR	SCHOOL GOING POP. UNADJUSTED FOR INCIDENTAL INFLUX		SCHOOL GOING POP. ADJUSTED FOR INCIDENTAL INFLUX	
	MALE (IN MILLION)	FEMALE IN MILLION)	MALE (IN MILLION)	FEMALE IN MILLION)
1979	2.0	1.8	1.4	1.3
1984	2.9	2.1	1.8	1.4
1989	3.5	2.6	2.0	1.7
1994	4.4	4.6	2.4	2.9
1999	6.1	6.3	3.1	3.9
2004	8.2	8.1	4.0	4.9

PROJECTION THREE

TABLE 3.4c:

	SCHOOL GOING POP. UNADJUSTED FOR INCIDENTAL INFLUX		SCHOOL GOING POP. ADJUSTED FOR INCIDENTAL INFLUX	
YEAR	MALE (IN MILLION)	FEMALE IN MILLION)	MALE (IN MILLION)	FEMALE IN MILLION)
1979	2.0	1.8	1.4	1.3
1984	2.9	2.1	1.8	1.4
1989	3.4	2.5	2.0	1.6
1994	4.2	4.2	2.2	2.6
1999	5.6	5.7	2.9	3.4
2004	7.3	7.3	3.5	4.4

CHAPTER FOUR

CONCLUSION

In this chapter a brief summary of the major findings is done. The implications of each of the findings to education planning is dealt with. Some recommendations and suggestions for further reseach are given.

4.1 MAJOR FINDINGS

The 'cohort' analysis has shown that there is differential enrolment at the National, Provincial and District levels for all the grade 'cohorts'. At the National level, the 1963 'cohort' showed over-enrolment in standard two. In the succeeding years, however, the 'cohorts' continued to realise considerable drop-outs. For example, in the 1964, 1965 and 1966 'cohorts' enrolments at form six were less than 3 per cent of the original 'cohorts'. The 1971, 1972 and 1973 cohorts show that at form six, the enrolments were slightly higher (between 3 and 4 per cent). There was an enrolment of 1.8 per cent at form six in the 1974 'cohort'.

Some Provinces showed a consistently high retention rate while others performed very poorly. Central and Nairobi are among those Provinces with the highest cohort enrolments. All cohorts showed retention rate of over 90 per cent in all grades for Nairobi. North Eastern Province enrolment figures were markedly low in all grades.

There were cases of cohort over-enrolment in some Provinces. In the 1973 'cohort', Coast Province recorded the highest level of over-enrolment (308.6 per cent at the standard two level). The 1973 cohort also showed over-enrolment in Rift valley and Western Provinces for both boys and girls. In 1979, we had over enroment in Nyanza Province (111 per cent and 117.2 per cent) for both boys and girls respectively.

Kiambu, Mombasa, Embu, Kericho and Nakuru districts had retention of over 70 per cent for both boys and girls. Moderate cohort retention rate of just over 50 per cent were recorded in Kitui, Kisii, Siaya, Kisumu, South Nyanza, Machakos, Marsabit, Meru, Kajiado, Trans Nzoia, Laikipia, Uasin Gishu, Kakamega, Busia, West Pokot and Bungoma. Enrolment of as low as 20 per cent were observed in Tana River, Taita Taveta, Kwale, Kilifi, Lamu, Isiolo, Garissa, Wajir, Samburu and Turkana districts.

From the 4 - parameter logit sysem and the intake rates, it shows that under constant mortality and constant fertility schedules, there will be an increase in the population estimates. As was hypothesized, our findings show that starting with a whole male population of 8 million in 1979 and with a corresponding school going age of 1.6 million boys. We would have a whole male population of 9.9 million giving rise to a school going population of 3 million in 1984.

In 1989, a whole male population of 11.7 million would give rise to a school going population of 3.8 million boys. Five years later, a male population of 14 million will give rise to 3.5 million boys in school. In 1999, a whole male population of 17 million will result in 5 million school going population. In the year 2004, from a whole male population of 22 million, we would have 7.2 million. If a drop-out percentage of 8.9 is considered, then the school going population correspondingly reduces to the following: 1.4 million, 2.7 million, 3.5 million, 3.2 million, 4.6 million and 6.6 million by the year 2004. If minimization of the influx incidents is done, then the corresponding values reduce even much further to: 1.2 million, 2.1 million, 2.5 million, 2.1 million, 2.9 million and by the year 2004 they would be 3.9 million. Applying the 8.9 percent drop-out makes the estimates for the boys to be 1.1 million, 1.9 million, 2.3 million, 1.9 million, 2.6 million and 3.6 million.

Similarly, for the female population under projection one, that is, constant mortality and fertility, we would have the following school going estimates of girls starting from 1979, 1.7 million, (from 8.1 million female population), 3.7 million (from 10 million population), 5.2 million (from 11.7 million female population), 4.9 million (from 14 million male population), 7.5 million (from 17 million female population), 11 million (from 20.8 million female population) by the year 2004. A drop-out of 8.9 percent reduces this to 1.6 million, 3.4 million, 4.7 million, 4.5 million, 6.8 million and 10 million. If minimization of the influx incidents is done, then the corresponding values reduce considerably to: 1.0 million, 1.8 million, 2.2 million, 2.0 million. 2.8 million, 3.9 million. If the drop-out value of 8.9 percent is considered, then we would have: 0.9 million, 1.7 million, 2.0 million, 1.8 million, 2.5 million and 3.6 million by the year 2004.

Under projection two, that is, declining mortality and increasing fertility we would have the following estimates for school going population of boys aged 6-13 years with corresponding male population written in brackets: 2.0 million primary school boys (8.0 million) in 1979; 2.9 million (9.6 million male population) in 1984; 3.4 million (11.9 million male population) in 1989; 4.2 million (from 14.6 million male population); 5.6 million (18 million male population); 7.3 million (22.0 million male population). If a drop-out percent of 8.9 is used, then correspondingly we have 1.8 million, 2.6 million, 3.2 million, 4.0 million, 5.6 million and 7.5 million school going boys going to school by the year 2004 with the same male population values as above in brackets.

If minimization of the influx incidents is done, then we would have the following estimates of school boys aged 6-13 years in a similar manner: 1.4 million. 1.8 million, 2.0 million. 2.4 million, 3.1 million and 4.0 million school going population of boys by the year 2004. If we use a percentage drop of 8.9, then the following values will result: 1.3 million, 2.1 million, 1.6 million, 1.9 million, 2.2 million, 2.9 million and 3.7 million.

On the other hand, under the same projection the school going population of girls will be denoted alongside with their corresponding female population in brackets from 1979 to the year 2004 as follows: 1.3 million (8 million of female population); 2.1 million (11.8 million of female population); 2.6 million (13.6 million of female population); 4.6 million (16.3 million of female population; 6.3 million (20.5 million of female population); 8.1 million (24.3 million female population). The corresponding estimates of the girls going to school in the same period after using the drop-out percentage of 8.9, would be: 1.6 million, 1.9 million, 2.4 million, 4.2 million, 5.7 million and 7.4 million.

However, when minimization of the influx of incidents that influence enrolment is considered, we have 1.3 million, 1.4 million, 1.7 million, 2.9 million, 3.9 million and by the year 2004 it will be 4.9 million. Inclusion of drop-out value of 8.9 percent will lead correspondingly to: 1.2 million, 1.3 million, 1.5 million, 2.6 million, and 3.5 million.

Under projection three, in which we have declining mortality and fertility, the estimates for the school going boys would be 2 million (from 8 million male population) in 1979; 2.9 million (9.5 million male population) in 1984; 3.4 million (11.6 million male population) in 1989, 4.2 (14 million) in 1994; 5.6 million (18 million) in 1999 and 7.3 school going boys out of 20 million male population by the year 2004.

If 8.9 percent drop-out is used, then the corresponding estimates for the school going boys become: 1.8 million, 2.6 million, 3.8 million, 5.2 million, and 6.2 million. If the minimization of the influx incidents are considered, then the values certainly become: 1.4 million, 1.8 million, 2.0 million, 2.2 million, 2.9 million, and 3.5 million. When the 8.9 percent drop-out is used, then we have the estimates of the school boys as 1.3 million, 1.7 million. 1.8 million, 2.0 million, 2.6 million, and 3.2 million.

Similarly, the values of the estimates of the girls going to school vis-a-vis the female population in 1979 to 2004 are 1.8 million (from 8 million female population) in 1979; 2.1 million (10.2 million female population) in 1989; 4.3 million (15.4 million female population) in 1994; 5.7 million (18.9 million female population) in 1999; and 7.3 million school girls (from 22.5 million female population) in the year 2004. If drop-out is considered. the estimates of the school going girls correspondingly change to 1.6 million. 1.9 million, 2.3 million. 3.9 million. 5.2 million. and 6.7 million.

On the other hand, if minimization of the influx incidents is done, the estimates become 1.3 million, 1.4 million, 1.6 million, 3.5 million and 4.4 million. When the drop-out percentage of 8.9 is included, then the values correspondingly are: 1.2 million, 1.3 million, 1.5 million, 2.4 million, 3.1 million, and by the year 2004, the school going girls would be 4.0 million.

It is clear from these results that incidental decrees and policies such as the abolition of fees in 1974 and the milk scheme in 1978, may influence the projections such that some exaggeration of the numbers is inevitable. Even after minimizing, however, it is also clear that there will be increase in enrolment whether rapid or gradual for all the cases considered. But there was gradual increase in secondary school population. This is mainly due to the fact that the net effect of the population dynamics do not immediately show their impact on the population at secondary school level. This can be seen for example in constant fertility and declining mortality where starting with 100 thousand boys and girls, we had 350 thousands, 560 thousands, 920 thousands, 1.8 million, 1.4 million and 2 million in the five year successive years to the year 2004.

In a nutshell, from the year 1979, the whole population rose close to 3 times by the year 2004. This population was clearly lower for every projection than the rise in the school going estimates.

4.2 MAJOR IMPLICATIONS TO EDUCATION PLANNING

The findings cited in the previous section have implications for the education planners in policy making, programme design and resource allocations. It is clear that incidental Presidential or government policies such as abolition of fees are likely to considerably influence the trend of enrolment. Any tendency for the policy makers to lessen the burden of fees payment by parents is to be met with high influx of enrolment in schools. As schools increase in enrolment, the chances of drop - outs and repetition are higher. For the case of drop - outs, it casts doubt on the system of education adopted by the policy makers. Proper records keeping in schools and, which are constantly inspected by the relevant officials, and a clear policy on repetition would lessen the problem of repetition.

X Differential enrolment on regional and district basis implies that the education planners have to shift their attention to district - oriented planning. The district focus policy is a step in the right direction. Some districts with the very high enrolments such as the Central and Nairobi provinces will require paying attention to the rapid expansion in the basic facilities such as school buildings, school equipment and teachers. Some districts with moderate enrolment could be either due to the fact that they are economically poorly endowed, therefore cannot support a higher enrolment in school, or the parents have a poor attitude towards their children being in school.

In some places, such as the North Eastern Province, where enrolment is extremely low, it is due to either their culture or religious beliefs. The nomadic way of life of the people in North Eastern Province encourages children to accompany their parents to look for pasture and water in the dry spell instead of being in school. The people at the Coast still believe in early marriages due to their culture and the fact that the majority of the them are moslems, a religion which encourages polygamy.

Generally, over - enrolment being a salient feature in the primary schools implies that there is need for expansion in the basic amenities. It is clear that the government has been, and still is, training and posting teachers to schools (appendix 5 and 6). But appendix 6 also shows that primary, secondary and teacher training institutions have been increasing gradually (in 1967 there were 5959 primary schools, 542 secondary schools and 28 teacher training intitutions; while by 1979 there were only 9622 primary schools, 1721 secondary schools and the number of teacher training colleges had dropped to 20. There is therefore need for the education planners to allocate more funds to build more institutions, especially the teacher training colleges. The additional ten training colleges currently under construction is a step in the right direction. The other option available is that the existing institutions could be expanded to accomodate more learners. This could be done by increasing the number of streams in each institution. But this move could lead to congestion if some facilities such as laboratories, dormitories for boarding schools are not expanded accordingly. The funds allocation (appendix 5) by the government on primary and secondary school facilities is consistently low.

The government has responded to the problem of financing schools by introducing the Cost - Sharing policy. The burden of building workshops, classrooms and providing school equipment such as stationery and text books is the responsibility of parents. This is a clear indication that more economically rich areas stand to benefit much more as they will have the ability to provide the basic facilities. Even if there is equitable supply of teachers as this would be the sole responsibility of the government, if the basic facilities such as text books are lacking in some areas, the pupils in such areas are unlikely to benefit much.

4.3 <u>RECOMMENDATIONS</u>

The Cost - Sharing system should be treated with caution so that communities that are poor are not disadvantaged. The government should help more such areas for their faster educational development.

We recommend that education planners should be prepared to plan for a primary school going population of boys and girls of between 7.9 million and 14.6 million by the year 2004 depending on whether there is checked incidental influx or not; under the conditions of mortality and fertility decline (see table.3.4c). This increase is nearly 2.96 times what it was in 1979. If the demographic path of declining mortality and increasing fertility is followed, then we would have a school going population in primary school of between 8.9 million and 16.3 million (see table

3.4b). The aggregate numbers may be reduced by about 8.9 percent to allow for drop-outs. This would be an increase of slightly above three times what the situation was in 1979. We are rather silent on the possibility of mortality and fertility remaining constant due to changing attitudes of people towards family planning and the improved medical technology as well as nutritional status.

On the whole, the education planners should be warry of policies that will generate an uncontrollable school enrolment. This is because the free primary education policy in 1974 and free milk scheme in 1978 encouraged far too many pupils to get enrolled in school and any projections based on such numbers would certainly be exaggerated. Planning for education services cannot therefore be effectively done for education services.

4.4 SUGGESTIONS FOR FURTHER RESEARCH

This was a deterministic rather than a probabilistic study. The data on enrolment was taken as it was without recourse to very rigorous smoothing as this would introduce the element of probability which was not our main concern. We recommend a study into a situation where the incidental cases are completely eliminated through other smoothing methods since interpolatory methods used here assume a linear growth.

This study was also more concerned with the enrolments rather than the socio - economic reasons for the disparity in enrolment. A study should be undertaken to provide figures to show the economic ability of the various regions vis-a- vis the enrolment levels be undertaken.

It is noteworthy to mention that fertility and mortality affect more the enrolment at primary school levels than the secondary school level. We recommend that a study into the factors that would lead to the increase in secondary school enrolment levels be undertaken.

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APPENDIX 1

ENROLMENT IN PRIMARY AND SECONDARY SCHOOLS BY GRADE, 1963-78.
PRIMARY SCHOOLS

YEAR	STD1	STD2	STD3	STD4	STD5	STD6	STD7
1963	137220	138678	143907	140005	124644	112836	62510
1964	180290	144786	139727	145004	134031	122603	114408
1965	195733	165754	139285	135124	126428	122517	121269
1966	193909	166110	152919	130282	120850	132714	14192
1967	228769	183634	165640	146912	123832	136848	147544
1968	250757	207755	178537	158899	132701	134247	146784
1969	253298	2246645	197669	171573	142680	141785	150647
1970	296459	241458	221235	191901	158082	154603	163851
1971	306896	261660	230998	207711	177547	167536	173150
1972	357366	279696	256870	220994	192329	192010	183240
1973	379370	316936	274081	244324	206558	199873	194875
1974	956844	435256	356498	297485	227033	218490	214272
1975	668166	722333	419638	341927	264650	237002	227439
1976	571872	545406	597690	382735	300670	253030	243214
1977	603259	489888	512830	511239	338841	281643	237140
1978	599058	479338	455209	466970	433726	30288	258505

APPENDIX 1 CONTD.

SECONDARY

YEAR	F1	F2	F3	F4	F5	F6
1963	11214	8174	5829	4791	667	445
1964	12712	9122	7035	5625	864	563
1965	18978	12536	7760	6849	1130	721
1966	24108	18503	11209	7068	1356	948
1967	31805	26592	16880	10756	1622	1124
1968	35624	28467	19547	14565	1769	1389
1969	39836	33824	20637	17279	2068	1602
1970	41043	37339	24540	19317	2606	2010
1971	46246	37423	28378	23103	3014	2558
1972	53480	43878	30993	26869	3688	3002
1973	58693	46782	34021	280094	3596	3581
1974	64966	52107	38373	31537	4724	4072
1975	73690	62585	45652	35970	4792	4146
1976	94834	75318	54788	45617	5208	4623
1977	106413	89892	60695	52568	5240	5174
1978	50755	53823	45691	39759	5714	5040

Source: 1. Ministry of Education. Annual Reports, 1984 p. 52.

2. Ministry of Education: Statistics Unit

APPENDIX 2

INTERPOLATION COEFFICIENTS BASED ON THE SPRAGUE FORMULA

FOR SUBDIVISION OF GROUPS INTO FIFTHS

Interpolation Subgroup	Coefficients to be applied to:-				
	G_1	G_2	G_3	G_4	G_5
	First Panel				
First fifth of G_1	+0.3616	-.2768	+.1488	-.0336	
Second fifth of G_1	+0.2640	-.0960	+.0400	-.0080	
Third fifth of G_1	+0.1640	+.0400	-.0320	+.0080	
Fourth fifth of G_1	+0.1200	+.1360	-.0720	+.0160	
Last fifth of G_1	+0.0704	+.1968	-.0848	+.0176	
	Next to First Panel				
First fifth of G_2	+0.0336	+.2272	-.0752	+.0144	
Second fifth of G_2	+0.0080	+.2320	-.0480	+.0080	
Third fifth of G_2	-0.0080	+.2160	-.0080	.0000	
Fourth fifth of G_2	-0.0160	+.1840	+.0400	-.0080	
Last fifth of G_2	-0.0176	+.1408	+.0912	-.0144	
	Middle Panel				
First fifth of G_3	-0.0128	+.0848	+.1504	-.0240	+.0016
Second fifth of G_3	-0.0016	+.0144	+.2224	-.0416	+.0064
Third fifth of G_3	+0.0064	-.0336	+.2544	-.0336	+.0064
Fourth fifth of G_3	+0.0064	-.0416	+.2224	+.0144	-.0016
Last fifth of G_3	+0.0016	-.0240	+.1504	+.0848	-.0128

Next to Last Panel

First fifth of G_4	-.0144	+.0912	+.1408	-.0176
Second fifth of G_4	-.0080	-.0400	+.1540	-.0160
Third fifth of G_4	.0000	-.0080	+.2160	-.0080
Fourth fifth of G_4	+.0080	-.0480	+.2320	+.0080
Last fifth of G_4	+.0144	-.0752	+.2272	+.0336

Last Panel

First fifth of G_5	+.0176	-.0848	+.1968	+.0704
Second fifth of G_5	+.0160	-.0720	+.1360	+.1200
Third fifth of G_5	+.0080	-.0320	+.0400	+.1840
Fourth fifth of G_5	-.0080	+.0400	-.0960	+.2640
Last fifth of G_5	-.0336	+.1488	-.2768	+.3616

Source: Syrock, <u>Methods and Materials</u>, p. 555.

[illegible]

Values of $T(l_{xs}, k, \ )$ for various of [illegible] and [illegible] (New Standard Life Table)

k for l_{xs} [illegible] 0.5 and [illegible] for l_{xs} [illegible] 0.5

[illegible]	0.[illegible]	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0	[illegible]
[illegible]	1.9439	1.7584	1.5900	1.4408	1.3085	1.1910	1.0866	0.9936	0.9107	0.8366	[illegible]
[illegible]	1.4730	1.3512	1.2416	1.1427	1.0534	0.9727	0.8996	0.8337	0.7738	0.7195	[illegible]
1.3935	1.2862	1.1835	1.0999	1.0193	0.9460	0.8783	0.8184	0.7625	0.7121	0.6658	[illegible]
[illegible]	[illegible]	1.0954	1.0151	0.9475	0.8829	0.8239	0.7697	0.7201	0.6746	0.6329	[illegible]
1.1909	1.1104	1.0339	0.9638	0.8996	0.8406	0.7865	0.7367	0.6910	0.6489	0.6101	[illegible]
0.9904	0.9291	0.8725	0.8200	0.7715	0.7265	0.6849	0.6462	0.6103	0.5771	0.5461	[illegible]
0.8934	0.8436	0.7956	0.7509	0.7093	0.6706	0.6345	0.6009	0.5696	0.5404	0.5132	[illegible]
0.7422	0.7046	0.6693	0.6362	0.6053	0.5762	0.5488	0.5232	0.4990	0.4763	0.4550	[illegible]
0.5783	0.5511	0.5283	0.5066	0.4860	0.4665	0.4480	0.4304	0.4137	0.3979	0.3829	[illegible]
0.4385	0.4239	0.4096	0.3959	0.3828	0.3703	0.3583	0.3468	0.3357	0.3252	0.3150	[illegible]
0.3203	0.3152	0.3069	0.2989	0.2911	0.2836	0.2763	0.2693	0.2626	0.2560	0.2497	[illegible]
0.2189	0.2148	0.2107	0.2067	0.2029	0.1991	0.1954	0.1918	0.1883	0.1649	0.1616	[illegible]
0.1196	0.1183	0.1170	0.1157	0.1144	0.1132	0.1119	0.1107	0.1095	0.1084	0.1072	[illegible]
0.0217	0.0216	0.0216	0.0215	0.0215	0.0214	0.0214	0.0213	0.0213	0.0212	0.0212	[illegible]
-0.0893	-0.0886	-0.0878	-0.0871	-0.0864	-0.0857	-0.0849	-0.0842	-0.0836	-0.0829	-0.0822	[illegible]
-0.2610	-0.2553	-0.2496	-0.2442	-0.2389	-0.2337	-0.2287	-0.2238	-0.2191	-0.2145	-0.2100	[illegible]
-0.5523	-0.5299	-0.5085	-0.4882	-0.4690	-0.4507	-0.4334	-0.4169	-0.4012	-0.3863	-0.3721	[illegible]
-1.1008	-1.0278	-0.9606	-0.8987	-0.8418	-0.7893	-0.7410	-0.6963	-0.6551	-0.6170	-0.5818	[illegible]
-2.2873	-2.0525	-1.8459	-1.6638	-1.5031	-1.3611	-1.2354	-1.1240	-1.0252	-0.9373	-0.8591	[illegible]
-5.4433	-4.6000	-3.9032	-3.3260	-2.8467	-2.4477	-2.1146	-1.8357	-1.6016	-1.4044	-1.2377	[illegible]

TABLE 2 CONT'D.

[illegible]	[illegible]	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-1	[illegible]
[illegible]	0.9366	0.7703	0.7110	0.6578	0.6099	0.5663	0.5280	0.4929	0.4611	0.4323	0.4062	[illegible]
[illegible]	0.7195	067010	0.6252	0.5843	0.5470	0.5130	0.4819	0.4534	0.4273	0.4034	0.3814	[illegible]
[illegible]	0.6655	0.6234	0.5845	0.5489	0.5162	0.4861	0.4585	0.4331	0.4096	0.3880	0.3680	[illegible]
[illegible]	0.6325	0.5944	0.5591	0.5266	0.4966	0.4689	0.4434	0.4198	0.3979	0.3777	0.3590	[illegible]
[illegible]	0.6101	0.5743	0.5414	0.5109	0.4827	0.4567	0.4326	0.4103	0.3895	0.3703	0.3524	[illegible]
[illegible]	0.5461	0.5173	0.4906	0.4657	0.4424	0.4208	0.4006	0.3818	0.3641	0.3477	0.3323	[illegible]
[illegible]	0.5132	0.4877	0.4639	0.4417	0.4209	0.4014	0.3832	0.3661	0.3500	0.3350	0.3208	[illegible]
[illegible]	0.4550	0.4349	0.4160	0.3982	0.3814	0.3656	0.3506	0.3365	0.3232	0.3106	0.2987	[illegible]
[illegible]	0.3829	0.3686	0.3550	0.3421	0.3298	0.3181	0.3070	0.2964	0.2863	0.2767	0.2675	[illegible]
[illegible]	0.3150	0.3050	0.2960	0.2870	0.2785	0.2702	0.2623	0.2547	0.2474	0.2404	0.2337	[illegible]
[illegible]	0.2497	0.2435	0.2376	0.2319	0.2263	0.2209	0.2157	0.2107	0.2058	0.2011	0.1965	[illegible]
[illegible]	0.1815	0.1783	0.1751	0.1720	0.1690	0.1660	0.1632	0.1603	0.1576	0.1549	0.1523	[illegible]
[illegible]	0.1072	0.1061	0.1049	0.1038	0.1027	0.1017	0.1006	0.0996	0.0985	0.0975	0.0965	[illegible]
[illegible]	0.0212	0.0212	0.0211	0.0211	0.0210	0.0210	0.0209	0.0209	0.0208	0.0208	0.0208	[illegible]
[illegible]	-0.0830	-0.0815	-0.0808	-0.0802	-0.0795	-0.0789	-0.0783	-0.0776	-0.0770	-0.0764	-0.0758	[illegible]
[illegible]	-0.2130	-0.2057	-0.2015	-0.1973	-0.1933	-0.1894	-0.1857	-0.1820	-0.1784	-0.1749	-0.1715	[illegible]
[illegible]	-0.3721	-0.3596	-0.3457	-0.3335	-0.3218	-0.3107	-0.3001	-0.2900	-0.2804	-0.2712	-0.2624	[illegible]
[illegible]	-0.5813	-0.5493	-0.5191	-0.4911	-0.4652	-0.4411	-0.4188	-0.3980	-0.3786	-0.3606	-0.3438	[illegible]
[illegible]	-0.8591	-0.7894	-0.7270	-0.6713	-0.6213	-0.5765	-0.5361	-0.4997	-0.4669	-0.4372	-0.4103	[illegible]
[illegible]	-1.2277	-1.0964	-0.9762	-0.8736	-0.7856	-0.7100	-0.6446	-0.5890	-0.5387	-0.4957	-0.4579	[illegible]

Source: Zaba et al, A Reducible Four - Parameter System of Model Lifetables, Population Studies, vol. 37 Published in Great Britain, 1983 pp. 122 - [illegible].

APPENDIX 4

The General Standard Lifetable, its Logits, and the Sets of Deviations, by Single Years of Age

x	$l_s(x)$	$Y_s(x)$	k(x)	t(x)	x	$l_s(x)$	$Y_s(x)$	k(x)	t(x)	x	$l_s(x)$	$Y_s(x)$	k(x)	t(x)	x	$l_s(x)$	$Y_s(x)$	k(x)	t(x)
1	0.8499	-0.8670	0.0937	-0.0964	26	0.6764	-0.3686	0.0409	0.0013	51	0.5010	-0.0021	0.0000	0.0002	76	0.1358	0.9253	0.0934	0.1027
2	0.8070	-0.7152	0.0881	-0.0708	27	0.6704	-0.3549	0.0385	0.0031	52	0.4912	0.0177	0.0001	-0.0017	77	0.1200	0.9962	0.0815	0.1078
3	0.7876	-0.6552	0.0830	-0.0580	28	0.6643	-0.3413	0.0361	0.0048	53	0.4809	0.0383	0.0005	-0.0037	78	0.1050	1.0714	0.0880	0.1100
4	0.7692	-0.6019	0.0772	-0.0458	29	0.6584	-0.3280	0.0338	0.0063	54	0.4701	0.0598	0.0013	-0.0056	79	0.0909	1.1513	0.0830	0.1094
5	0.7691	-0.6015	0.0771	-0.0458	30	0.6525	-0.3150	0.0316	0.0077	55	0.4590	0.0821	0.0025	-0.0075	80	0.0776	1.2377	0.0766	0.1059
6	0.7642	-0.5879	0.0755	-0.0426	31	0.6466	-0.3020	0.0295	0.0089	56	0.4474	0.1055	0.0041	-0.0093	81	0.0654	1.3298	0.0693	0.0997
7	0.7601	-0.5766	0.0740	-0.0400	32	0.6406	-0.2889	0.0273	0.0099	57	0.4354	0.1299	0.0062	-0.0108	82	0.0543	1.4287	0.0612	0.0913
8	0.7564	-0.5666	0.0727	-0.0377	33	0.6346	-0.2759	0.0252	0.0108	58	0.4229	0.1554	0.0087	-0.0120	83	0.0444	1.5346	0.0528	0.0812
9	0.7532	-0.5578	0.0715	-0.0357	34	0.6284	-0.2627	0.0231	0.0115	59	0.4099	0.1821	0.0118	-0.0128	84	0.0356	1.6469	0.0445	0.0702
10	0.7502	-0.5498	0.0704	-0.0339	35	0.6223	-0.2496	0.0211	0.0121	60	0.3965	0.2100	0.0154	-0.0130	85	0.0281	1.7717	0.0355	0.0588
11	0.7477	-0.5431	0.0694	-0.0323	36	0.6160	-0.2364	0.0191	0.0125	61	0.3825	0.2394	0.0196	-0.0125	86	0.0217	1.9043	0.0291	0.0477
12	0.7452	-0.5606	0.0685	-0.0308	37	0.6097	-0.2230	0.0172	0.0128	62	0.3681	0.2701	0.0243	-0.0111	87	0.0163	2.0501	0.0225	0.0376
13	0.7425	-0.5296	0.0675	-0.0293	38	0.6032	-0.2094	0.0153	0.0130	63	0.3532	0.3024	0.0295	-0.0088	88	0.0120	2.2054	0.0169	0.0286
14	0.7396	-0.5220	0.0663	-0.0276	39	0.5966	-0.1956	0.0135	0.0129	64	0.3379	0.3364	0.0353	-0.0054	89	0.0086	2.3737	0.0123	0.0210
15	0.7362	-0.5131	0.0650	-0.0256	40	0.5898	-0.1816	0.0117	0.0127	65	0.3221	0.3721	0.0415	-0.0008	90	0.0060	2.5550	0.0087	0.0149
16	0.7327	-0.5043	0.0636	-0.0237	41	0.5829	-0.1674	0.0100	0.0124	66	0.3059	0.4097	0.0480	0.0051	91	0.0040	2.7587	0.0059	0.0102
17	0.2287	-0.4941	0.0621	-0.0215	42	0.5759	-0.1530	0.0034	0.0119	67	0.2993	0.4494	0.0548	0.0124	92	0.0026	2.9748	0.0039	0.0067
18	0.7241	-0.4814	0.0602	-0.0190	43	0.5686	-0.1381	0.0069	0.0112	68	0.2724	0.4912	0.0616	0.0209	93	0.0016	3.2181	0.0024	0.0042
19	0.7189	-0.4694	0.0581	-0.0163	44	0.5611	-0.1229	0.0055	0.0104	69	0.2553	0.5353	0.0683	0.0306	94	0.0010	3.4534	0.0014	0.0025
20	0.7130	-0.4551	0.0557	-0.0135	45	0.5534	-0.1073	0.0042	0.0094	70	0.2380	0.5818	0.0747	0.0412	95	0.0006	3.7090	0.0008	0.0015
21	0.7069	-0.4401	0.0532	-0.0106	46	0.5454	-0.0911	0.0031	0.0082	71	0.2206	0.6311	0.0805	0.0525	96	0.0003	4.0557	0.0005	0.0008
22	0.7005	-0.4248	0.0506	-0.0078	47	0.5372	-0.0655	0.0021	0.0069	72	0.2032	0.6832	0.0856	0.0641	97	0.0002	4.2585	0.0002	0.0004
23	0.6944	-0.4103	0.0481	-0.0052	48	0.5287	-0.0574	0.0012	0.0054	73	0.1859	0.7385	0.0896	0.0755	98	0.0001	4.6051	0.0001	0.0002
24	0.6884	-0.3963	0.0457	-0.0029	49	0.5198	-0.0396	0.0006	0.0038	74	0.1688	0.7971	0.0923	0.0861	99	0.0000	5.1270	0.0001	0.0001
25	0.6826	-0.3829	0.0433	-0.0008	50	0.5106	-0.0212	0.0002	0.0021	75	0.1521	0.8591	0.0937	0.0954	100	0.0000	5.5555	0.0000	0.0000

Source: Zaba Basia, Four Parameter Logit Lifetable Systems, Population Studies, 1980 pp. 94.

APPENDIX 5

(a) TEACHERS IN SERVICE

PRIMARY				SECONDARY		
YEAR	TRAINED	UNTRAINED	TOTAL	TRAINED	UNTRAINED	TOTAL
1967	25050	10622	35672	2470	1583	4053
1968	27485	10438	37923	2743	1902	4645
1969	30001	8311	3812	3271	1996	5267
1970	32929	8550	41479	3681	2200	5881
1971	37617	11779	49396	3907	2464	6371
1972	41599	11937	53536	4469	2637	7106
1973	43925	12618	56543	4750	2638	7388
1974	52132	26208	78340	-	-	-
1975	54823	31284	86107	-	-	-
1976	56145	32929	89074	6460	4978	11438
1977	59640	30124	89764	6727	5969	12696
1978	63912	28134	92046	7399	6887	14286
1979	68361	24401	92762	7565	7336	14901

SOURCE : STATISTICAL ABSTRACTS. 1977 P.220, 1978 P.216, 1984 P.187.

(b) EXPENDITURE ON PRIMARY AND SECONDARY SCHOOL EDUCATION IN KENYA (K£ '000) .

DEVELOPMENT	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
PRI.	946	546	1428	470	450	980
SEC.	1780	2163	3257	960	1150	1740
RECURRENT						
PRI.	96717	107163	112154	127440	121180	159810
SEC.	18089	21771	24880	24760	30340	41680

Source: Ministry of Planning and National Dev., Stat. unit.

APPENDIX 6

TREND OF EDUCATIONAL INSTITUTIONS

YEAR	PRIMARY SCHOOL	SECONDARY	T.T.C's
1967	5959	542	28
1968	6135	601	28
1969	6111	694	27
1970	6123	783	27
1971	6372	809	27
1972	6657	949	21
1973	6932	964	18
1974	7706	1019	18
1975	8161	1160	19
1976	8544	1280	19
1977	8896	1473	20
1978	9349	1773	20
1979	9622	1721	20

SOURCE: CBS, STATISTICAL ABSTRACTS, 1977 p.220, 1978 p.216, 1984 p.187.