

FERTILITY TRANSITION AND SOCIO-ECONOMIC CHANGE IN WESTERN KENYA

Juha I. UITTO
The United Nations University

ABSTRACT This article attempts to analyze and explain the differences in fertility between the various regions of Kenya. Until recently, the country has experienced some of the highest fertility levels in the world, but lately the overall fertility has been declining fairly rapidly, especially in the central parts of the country. Kisii District in western Kenya has been selected for an in-depth analysis of the persistence of high fertility and its relationship with the socio-economic characteristics of the area. Demographic transition theory assumes that fertility transition is determined by the economic rationality of having children. This rationality is expressed in the direction of the intergenerational wealth flow, which, in traditional societies, is normally from the younger generation to the older, whereas the direction is reversed with economic development and Westernization. Of particular importance are the introduction of a monetary economy and the spread of education. The study finds fertility transition in process at different stages in the different regions of Kenya, depending on the particular socio-economic situation, but these differences are likely to even out in the future.

Key Words: Kenya; Kisii; Population; Fertility Determinants; Socio-Economic Change; Rural Development.

INTRODUCTION

The rapid increase in human populations experienced in the developing world is one of the underlying forces that threatens the stability of the natural ecosystems as well as that of political and economic development. In Africa, population growth puts pressure on arable land. The fragmentation of holdings and increasing population pressure force farmers to cultivate the ecologically vulnerable and marginal lands, causing environmental degradation in the form of erosion and desertification. Other pressures on land resources are the increasing rural landlessness due to uncontrolled urbanization. The increasing number of people, especially children, strains the institutions providing services, such as education and health. The young are poorly educated and in poor health, which make their contribution to the development of the society meager. Furthermore, the stagnating economies are unable to employ all the new entrants into the labor force.

In eastern Africa, high fertility is the dominant reason for population increase today, when mortality comes down and international migration is not significant. The determinants of fertility are mainly economic and social, although cultural values play an important role. Individual families make their fertility decisions on the basis of perceived economic rationality. This rationality changes in time and

space as the social and economic conditions vary between different geographical places and historical situations.

The aim of this paper is to discuss the regional variations in fertility within an African country. The central premise is based on the demographic transition theory where it is assumed that the transition proceeds according to the social and economic rationality for having children. The country in question is Kenya, located on the East African coast on the equator. It is a country where fertility is amongst the highest in the world, but where a rapid socio-economic transition is taking place. However, this socio-economic transition has penetrated the various regions of the country in an unbalanced way, manifesting itself simultaneously in different types of reproductive behavior in different parts of the country. As a case study, the paper examines a densely populated smallholder district in western Kenya, Kisii, where fertility is particularly high.

The paper is based on statistical data published mainly by Kenyan government sources, including a recent major survey, the Demographic and Health Survey (KDHS) of 1989 (Republic of Kenya, 1989), as well as a number of detailed case studies carried out in recent years.

POPULATION OF KENYA

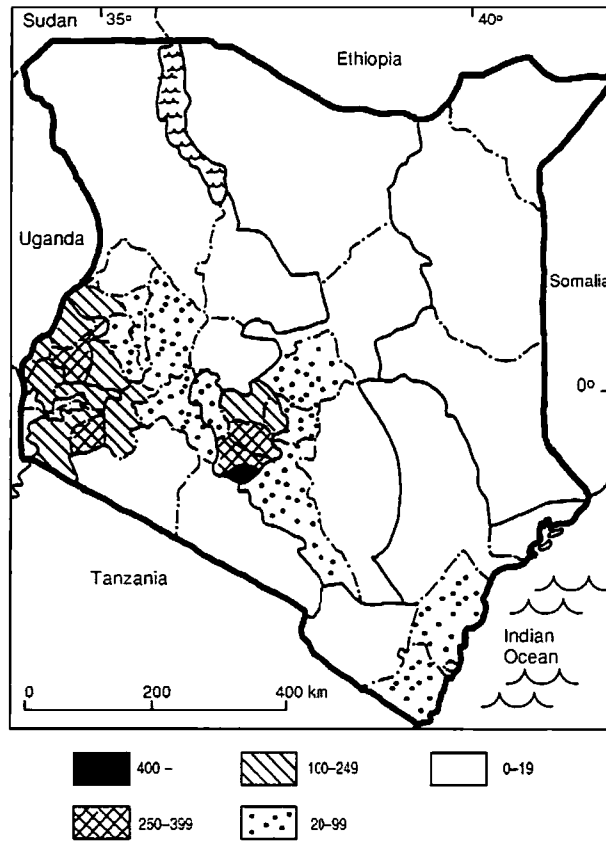
According to the population census of 1979, Kenya had a total population of 16.1 million (Republic of Kenya, 1989)⁽¹⁾. At that time the population was estimated to be growing at a rate of approximately 3.8 percent annually, which would lead to a population of 35 million by the year 2000.

The population is distributed unevenly across the different regions of the country (Fig. 1). As a predominantly rural country, with some 85 percent of the population living in rural areas, Kenya is highly reliant on domestic agriculture. Only 11.9 percent of the total land area is classified as high-potential agricultural land, and most of the country is only sparsely populated, with an agro-pastoralist mode of production dominating. The main limiting factor is rainfall; most of the permanent settlements correspond to the isohyet of 500 mm of annual rainfall (Ominde, 1974).

Most of the best agricultural land is located in the western parts of the country, around the Lake Victoria basin, and in the central highlands north of the capital. The Lake Victoria basin forms the largest of the three main population clusters, with about 40 percent of the country's population. The second main population cluster is found in the central part of the country, with Nairobi on its southern fringe. This is one of the most densely settled parts of rural Africa. These two clusters are linked by a moderately populated passage consisting of the Central Rift. The third population cluster is situated in the coastal area of the Indian Ocean, with the second largest city of Kenya, Mombasa, as its center.

Since the Second World War, Kenya has experienced unprecedented population growth with a declining mortality and constantly rising fertility levels until fairly recent leveling off (Table 1). The rising trend in fertility can be attributed to the improved socio-economic conditions and the effects of Westernization.

The various censuses and surveys, including the Demographic and Health



Source: Utito, 1989: 35

Fig. 1. Population density of Kenya (pers./km²).

Table 1. Total Fertility Rate (TFR) of Kenya 1962-1989.

Year/Survey	TFR
1962 Census	5.3
1969 Census	6.6
1977/78 KFS	7.9
1979 Census	7.9
1984 KCPS	7.7
1989 KDHS	6.7

Source: Republic of Kenya, 1989.

Survey of 1989, show a consistent differentiation of fertility rates between the socio-economic variables and regions in the country (Table 2 & 3). In the central areas, with the highest urbanization rate and commercialization of the economy,

Table 2. Fertility by Province.

Province	Total Fertility Rate		
	KFS 1977/78*	KCPS 1984	KDHS 1989**
Nairobi	6.1	5.6	4.2
Central	8.6	7.8	6.0
Coast	7.2	6.7	5.4
Nyanza	8.0	8.2	6.9
Rift Valley	8.7	8.6	7.0
Eastern	8.2	8.0	7.2
Western	8.2	6.3	8.1

* Estimated 5-year average TFR.

** Based on women 15-49, from 1989 to the time of interview.

Sources: Republic of Kenya, 1980; 1984; 1989.

Table 3. Percentage Distribution of GDP (1976): A, Per Capita Income Relative to Nairobi (1976): B, and Share of Population (1979): C by Province, %.

Province	A	B	C
Nairobi	31.8	100.0	5.4
Central	16.3	17.7	15.3
Coast	11.9	22.8	8.8
Nyanza	10.0	8.1	17.2
Rift Valley	15.5	13.6	21.1
Eastern	9.6	9.6	17.7
Western	4.6	6.1	12.0
North Eastern	0.4	3.2	2.4

Sources: Bigsten, 1981: 181-182; Uitto, 1989: 28.

the fertility rate has recently started to decline quite rapidly, which can be seen from the successive data from the Kenya Fertility Survey (KFS) of 1977/78 through the Kenya Contraceptive Prevalence Survey (KCPS) of 1984, to the KDHS of 1989. This decline is most prominent in the Nairobi capital region which has the lowest fertility in the country. For the same reasons, Coast Province has also experienced a decline in fertility. It could thus be claimed that the fertility transition has proceeded furthest in these areas.

In the main traditional smallholder areas the trend is not as visible, if indeed at all. The Western Province provides the most striking example of the persistence of high fertility, but also Nyanza, Rift Valley and Eastern Provinces belong to this category.

DETERMINANTS OF HIGH FERTILITY: THE CASE OF KISII, WESTERN KENYA

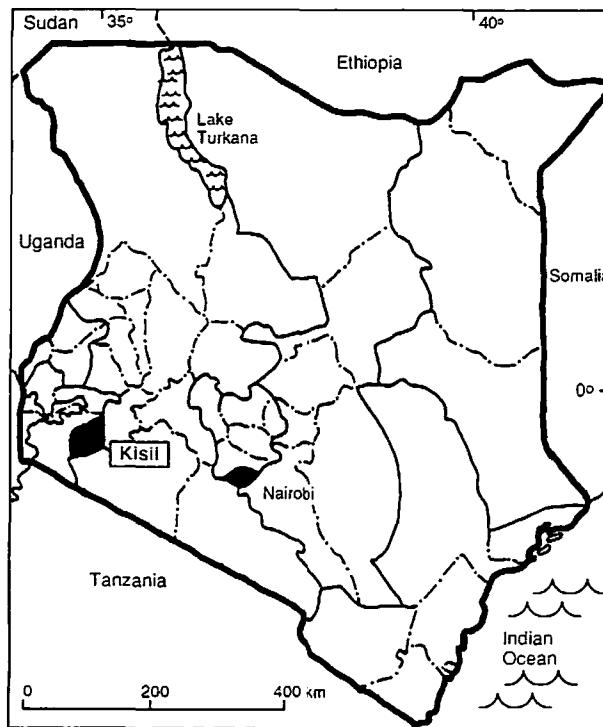
I. Background

In order to investigate the impact of the penetration of a market economy and Westernization in general on the reproductive behavior of Kenyan women, it is necessary to compare results from a number of detailed micro-level studies. For this

purpose, one district, Kisii, in Nyanza Province, has been selected to illustrate the transitional social and economic situation producing the prerequisites for an exceptionally high fertility (Fig. 2). In the analysis, reference is made to the situation prevailing in the central smallholder areas, where fertility has already started to decline. To the extent possible, a comparative perspective is utilized to highlight the varying socio-economic situations determining the rationality of the reproductive behavior in each specific context.

The selection of Kisii for a close examination can be justified for a number of reasons. The district is located in a major smallholder area in western Kenya and can be seen as representative of the situation at large in the region. Agro-ecologically, the area is categorized by the government as a relatively high-potential location, but the high population growth is rapidly undermining the basis for agricultural production. The district fertility is far above the average for the country, even when compared with the other densely populated smallholder areas.

Several detailed studies have been carried out in Kisii in recent years, concentrating on the various aspects of development in the area, including labor relations, social reproduction, cooperative development, the farming practices, as well as the changing social and economic conditions in general (Bager, 1980; Carlsen, 1980;



Source: Utito, 1989: 25

Fig. 2. The administrative structure of Kenya and the location of Kisii district.

Gyllström, 1975; Håkansson, 1988; Kongstad & Mönsted, 1980; Ongaro, 1988; Orvis, 1988). I have analyzed these studies for the basic information on the socio-economic and agricultural conditions in the area. For a comparative perspective, studies concerned with areas in the Central Province were consulted. I enumerate possible explanations for the exceptionally high fertility on the basis of the findings. Of particular interest here are the factors affecting the rationality of a large family and the direction of the inter-generational wealth flow. These factors include, specifically, women's role and status, as well as the extent and spread of and education.

II. Physical and Human Geographical Characteristics of Kisii

Kisii District is located in western Kenya close to Lake Victoria, but has no shoreline. It covers some of the best agricultural land in the country: all of its 2,196 square kilometers is classified as high-potential land according to the official Kenyan classification (Republic of Kenya, 1982). This classification does not, however, take into consideration the rather rugged land form in the district. Kisii is in the highest part of the South Nyanza highlands and lies mainly between 1,200 and 1,800 meters above sea level. It is characterized by rounded, steep-sided hills and narrow valleys. Its soils are mainly red laterized volcanic soils (Carlsen, 1980; Gyllström, 1975). The district usually receives a sufficient amount of rain throughout the year, with a peak in April-May. During the period 1974-1981, the annual mean rainfall was 2,378.5 mm (Republic of Kenya, 1982). Drought is practically unknown in the area.

Kisii District is a predominantly rural area. The only center of any importance is Kisii township, which had about 29,700 inhabitants in 1979, i.e., roughly 3.4 percent of the total population of the district.

Agriculture is the backbone of the economy. Cash crops were introduced early in the area. Kisii benefitted from the expansion of coffee, tea and pyrethrum production as early as the 1950s, and since then the district has been among the foremost producers of these commodities in the country (Bager, 1980; Carlsen, 1980). The most important food crops are maize, beans, local vegetables, sweet potatoes, millet and bananas. In addition, a variety of fruits as well as sugarcane is produced in the area (Bager, 1980). High-yielding varieties (HYVs) of maize were introduced in the area in the late 1960s, and today practically all the farmers plant hybrid seeds (Ongaro, 1988).

The area is dominated by smallholder agriculture. Farm size varies mainly between 0.11 to 2.2 ha. (Håkansson, 1988). All of the farms are owner-operated, and there is no plantation type of agriculture in the district (Ongaro, 1988). The rapid population growth is increasing the pressure on land. Virtually all cultivable land is already in use, and the increase in population is leading to quickly decreasing amounts of land available to each family.

The farming methods are predominantly traditional, and the farming system can be described as mixed farming. Maize is the staple, and it is mostly intercropped with other food crops, especially beans. This is done partly in order to minimize the risk of crop failure, and partly to cover a potential food shortage period prior

to maize harvest with the early maturing beans. Also, the leguminous bean plants benefit the other plants through nitrogen fixation (Ongaro, 1988). In his study areas, Ongaro reports that food crops accounted for between 52 and 61 percent of the total cultivated area. The proportion of land under maize and beans correlates positively with decreasing farm size. In one of the areas, farmers with less than two hectares devoted 78 percent of their farm land to maize and beans only (Ongaro, 1988). The potential for expanding the food crop area is quite limited due to the pressure on land. To increase production, I propose multicropping, the use of modern farm inputs and more efficient farming practices.

The case studies show that land preparation is done mainly by hoe. Tractors and ox-plough are used only in areas where the landscape is relatively flat. In most parts of the district, the hilly relief, together with the small farm size, hinder mechanical land preparation (Bager, 1980; Ongaro 1988). Ongaro found in his sample that tractors were used for land preparation by only 11.6 percent of the farmers with farm sizes of two or more hectares (Ongaro, 1988). Weeding is done usually by hoe and by hand, which is a very labor-intensive process.

Similarly, modern farm inputs are used sparingly. Most of the farmers have adopted improved maize varieties in place of the local maize, but these are planted largely without the use of chemical fertilizers, pesticides or insecticides. In the Kisii sample, 69.3 percent of the maize farmers used fertilizers and only 32.0 percent used insecticides and pesticides (Ongaro, 1988). The main constraints for the use of modern inputs seem to be the lack of farm credit, as well as the desire of farmers to minimize the monetary risks involved in high-investment farming.

Kisii belongs to the most densely populated part of Kenya. In 1979, there were about 869,500 inhabitants and 141,600 households in the district (Republic of Kenya, 1981). The average population density is thus 395 persons per square kilometer. This average was, however, grossly exceeded in several rural locations. On the average, the above population density would result in 0.25 ha. of land per capita, or 1.55 ha. per household (Table 4). With population growth, the situation has of course deteriorated rapidly since the time of the census.

Table 4. Population and land availability in Kisii District as compared with Kenya totals (1979).

	Population (\times 1,000)	Population density (pers./km ²)	High potential agricultural land (ha./pers.)
Kisii	869.5	395	0.25
Kenya	16,100.0	28	0.46

Land scarcity, together with population growth, can be seen as the main developmental constraint in Kisii. This combined with the traditional inheritance system, which requires that each son receive a piece of his father's land, leads to the continuous fragmentation of farm land into smaller, today often unviable, units. A simple calculation shows that if a man has 2.2 ha of land and three sons, the amount of land that each son will get is only 0.7 ha. (Bager, 1980).

III. Fertility and its Determinants

The pace of population growth in the area is largely due to the extraordinarily high fertility. The KCPS of 1984 reports a Total Fertility Rate (TFR) of 8.2 for Nyanza Province, as compared with 7.7 for the whole country. This means that only the Rift Valley Province as a whole had a higher TFR than Nyanza. Furthermore, the survey results indicate a slight rise in fertility from the time of the 1977/78 KFS, when Nyanza reportedly had a TFR of 8.0 (Republic of Kenya, 1986). An overwhelming majority (about 98 percent from the latest census) of the population in the district belong to the Bantu-speaking Kisii (also known as Gusii) group. This ethnic group had a five-year average TFR of 8.67 (Republic of Kenya, 1980). Consequently, Kisii has a young age structure: in 1979, more than 53 percent of the population was under 15 years of age.

The high fertility is related to the socio-economic and cultural characteristics of Kisii society. The large family size among the Kisii population is a matter of conscious choice. The average total number of children desired by currently married Kisii women under 25 years of age at the time of the KFS was 6.9. At the same time, only 6 percent of currently married and fecund women were using any contraception, and only 23 percent had ever used it (Republic of Kenya, 1980).

Of interest here are the possible explanations for the rationality of a large family among the Kisii population and the conditions where Kisii differs from other areas in Kenya with lower fertility. Particular attention should be paid to the division of labor within the family, the spread of education, as well as women's status. The impact of the aforementioned factors on the direction of the intergenerational wealth flow shall be analyzed.

Most of the farm work is done by family labor. The smallest farmers depend totally on family labor, and even among the wealthier farmers the use of wage labor is very limited. Areas of land where family labor does not suffice tend to be left uncultivated, rather than to hire wage labor (Bager, 1980; Kongstad & Mönsted, 1980).

In traditional Kisii society, labor was organized on the basis of age and gender. The importance of age as a determinant of the division of labor has decreased, but gender still remains today an important factor in explaining the division of labor within a household. Traditionally, men's responsibilities included those tasks in agriculture that required physical strength during peak periods. Furthermore, they were responsible for building houses, livestock rearing, hunting and the defense of the local community or homestead. They were also the ones to make all the important political and economic decisions (Kongstad & Mönsted, 1980).

Women were responsible for all of the daily work in agriculture; they did the planting, weeding and harvesting as a part of their responsibility for feeding the family. They were also in charge of fetching firewood and water as well as all the other household chores (Kongstad & Mönsted, 1980). For these tasks, women relied very much on their children's labor contribution.

These traditional labor divisions are changing over time, however, as a part of the general socio-economic changes resulting from increasing population pressure and the penetration of the capitalist economy in the area. More of the tasks that

have traditionally been the responsibility of the men are being transferred to women (Kongstad & Mönsted, 1980). The women have become solely responsible for farm production and taking care of the household.

This situation is mainly due to the engagement of men in off-farm employment and their frequent migration to urban areas or other rural areas where wage labor is available. It has been suggested that there is a mode of social reproduction of peasant households that is particularly dominant in Kisii. The mode is referred to as "straddling" (Orvis, 1988). Straddling is characterized by the combination of a male-controlled nonagricultural income and the persistence of economically significant agricultural production within each household. It is seen as a result of the historical process of the integration of a precapitalist society into market economy that had begun early during colonial rule. The development of straddling has been further enhanced by population pressure, which has forced young men to move away from the farm land of their fathers. Today, straddling is seen as the only way to economic progress by nearly all households.

Straddling also has strong implications for the relative positions of men and women within households and repercussions on the status and role of women, as they are the ones to provide the bulk of labor in the household and agricultural production while the men are engaged in off-farm work. Investment in household agriculture is only one of the options for men in investing the money gained through off-farm work. The men tend to try to maximize family agricultural productivity with minimum monetary investment. This increases the pressure on women's labor, and, as they have only very limited economic opportunities beyond the household economy, women become almost completely dependent on the farm, and the investments in agricultural production by their husbands (Orvis, 1988). Additionally, the women, especially poor women, often work in the communal Harambee⁽²⁾ groups. Strong social and political pressure is placed on women to participate, and the compensation is very small, but in many cases it is the only available source of cash income for women (Bager, 1980; Kongstad & Mönsted, 1980).

A woman in Kisii society remains a legal minor throughout her life and must be attached to a man (Håkansson, 1988). According to Kisii customary law, women cannot own property and must have a male guardian. Their opportunities for acquiring economic or political status are still practically nonexistent. Therefore, the only feasible way for a woman to accumulate wealth is through her children, especially her sons. It is as mothers of sons that women can control property and gain prestige and influence. Without sons, a Kisii woman has no property and will face old age without economic support or prospect (Håkansson, 1988).

In a situation such as this, it is obvious that high fertility would be rational from the point of view of the women. The children, while young, will provide a woman with help that will enable her to manage the labor requirements on the farm. Similarly, being a mother will bring her respect in the society; almost the only means for a woman in the traditional context. Later, the children will take care of her and provide the old-age security she needs. Clearly, in this situation the direction of intergenerational wealth flow is from the children to the mother.

There are, however, several factors in the modernization process that are work-

ing in the opposite direction. With the heavy population pressure and the subsequent land fragmentation, it is becoming increasingly difficult for a large family to survive on agriculture. Straddling has become a means of providing extra resources to the household. The poorest households are those that have the least possibility for successful straddling; often these are female-headed households. In this situation, young adults are frequently forced to leave the homestead and to seek employment outside of agriculture, which means that the benefits from their labor contribution are no longer available on the farm.

It has been shown that one of the major investment objects for the off-farm income collected through straddling is the education of the children (Orvis, 1988). Education is seen as a route to prosperity and respect in the Kisii society. In reality, education does indeed form a basis for socio-economic stratification that has replaced the traditional lineage ties (Håkansson, 1988). The life-style of the young educated elite is different from the traditional Kisii life-style: Western values are widespread among these individuals, they use English as a means of communication, and they are most often Christians.

The above processes will gradually change the rationality for having many children and, consequently, the direction of the intergenerational wealth flow. The lack of available farm land decreases the need for manpower to work on the family farm; simultaneously, it becomes harder to feed the family from the reduced amount of land per capita.

The expansion of education is an important factor in changing the direction of the intergenerational wealth flow. While at school, the children consume family resources at the same time that they are removed from production. The parents can only afford to educate a limited number of children. However, the perceived benefits from schooling are attractive enough for the parents to value education. At the same time, remittances from children working outside the homestead still form an important source of income for the parents, and the children frequently investing a considerable share of their income into the family farm. They are also expected to provide for the old-age security of their parents even if they no longer live on the farm.

The Westernization process has not yet penetrated deep into Kisii society. Most families still live in the traditional socio-economic setting. The modern elites with small families form a very small portion of the population.

IV. Kisii vs. Central Province: A Comparison

In another major smallholder area, Central Province, the fertility levels are lower, especially in the younger age groups. The KCPS of 1984 found that the TFR within Central Province was 7.8, while it was 8.2 in Nyanza Province and 8.6 in Rift Valley Province (Republic of Kenya, 1984).

Kisii differs from the districts in Central Province in a variety of ways that all may contribute towards the differing reproductive patterns in the two areas. Both Kisii and Central Province are smallholder areas where access to land is limited. The production relations and the degree of the penetration of a market economy make their situations quite different. A crucial factor here is that there has been an

almost complete commercialization of agricultural production (Christiansson et al., 1987; Hedlund, 1986). This fact, together with the relative proximity to Nairobi, is responsible for the transformation of production and labor relations within the household. Additionally, the predominantly Kikuyu population in this province has had the longest contact with the Western life-style of the Kenyan tribes.

Several authors have attempted to explain the dynamics and the relative development of the smallholder areas in Central Province. The explanations include good ecological conditions, good communications and access to large agricultural markets, which have created conditions for intensive agriculture; proximity to Nairobi, which is seen as the core area of the modernization process; and the cultural background of early contacts by the Kikuyu with white settlers (Hedlund, 1986; Naidu, 1974; Soja, 1968). Certainly, all of these factors contribute to the fact that Central Province has become the most successful area when it comes to agricultural and general economic development in the country.

It has been shown that, while the average farm size in Central and Nyanza Provinces is more or less the same, the mean income for the inhabitants in Central Province is almost 20 percent higher than that for those living in Nyanza Province (Collier & Lal, 1984). The difference is particularly large when comparing the sources of income: whereas the average farm income for households in Nyanza Province is higher than that in Central Province, the off-farm income is only about 53 percent of that in Central Province (Collier & Lal, 1984).

Central Province has a higher-than-average proportion of female-headed households. Of all households in Murang'a, 44.5 percent are female-headed; the corresponding figure for Nyeri is 41.3 percent, for Kiambu 32.7 percent, and for Kirinyaga 32.0 percent (Ayiemba, 1988). This high prevalence of female-headed households has been explained by the proximity of Nairobi and the resulting modernization (Ayiemba, 1988). Because of this, men frequently migrate to towns in order to find employment. However, this migration shows a somewhat different character from those in the other parts of the country. The absence of men from the farms is not as long-lasting as in the more remote areas as they travel between the urban and rural sectors frequently. There is a constant flow of resources between the two.

This can be seen as a result of two separate factors. First, there are several reasonably large urban centers in Central Province that can provide services and employment opportunities for the inhabitants within the region. Towns such as Thika, Nyeri and Murang'a are powerful local centers that create a market for products from the area. In 1979, there were 13 towns in Central Province with a total of over 125,000 inhabitants (Obudho, 1984).

Second, and more importantly, the proximity of Nairobi allows men to lead a sort of double life: at the same time as they are employed in Nairobi they are still able to take responsibility for their home farm (*shamba*) in the countryside. Depending on the distance to the city, the men return to their home area once a month or even as often as once a week. The situation considered as the ideal is where the husband has a steady job in Nairobi, from where he returns home weekly, and the wife stays in the home area where she takes care of the *shamba* and the family

(Svensson, 1986). This ideal is achieved by only a small number of households due to the difficult employment situation, but many households are able to combine the rural and urban modes of life.

The spread of urbanization in the province, resulting from both the proximity of Nairobi and the development of smaller rural centers, together with the good communications network have facilitated the development of markets and the commercialization of production in the area. Simultaneously, this has spread the urban values and rationality. It has become natural for young men to seek employment in the modern sector in town. The contradiction between migrating to town and the life at the homestead has diminished due to the commercialization of the farm, where a large share of the income from the urban sector has been invested.

As a result, a Western style of living and the market orientation of the economy have penetrated deep into Kikuyu society in the areas surrounding Nairobi. The penetration had already commenced early in the colonial period, when the Kikuyu formed the core of the African labor force for the colony. This led simultaneously to a close contact with the missionaries, who, in addition to religious values, introduced Western education to the population. Most other ethnic groups consider the Kikuyu to be the most aggressive and entrepreneurial of all Kenyans (Miller, 1984). In any case, the earlier colonial and Christian influences have been reinforced by the later developments in the region.

The presence of urbanism augmented with a widespread appreciation of Western values in general is also reflected in the educational level of the Kikuyu. One of the main areas where families invest is the education of their children (Svensson, 1986). The high priority given to education (especially post-primary education) contributes to the modernization process, and also changes the reproductive goals of the families. The mean total number of children desired by currently married women under the age of 25 is 5.8 for the Kikuyu, as compared with 6.9 for the Kisii (Republic of Kenya, 1980).

The modernization process, including the commercialization of agriculture, the close links to the urban sector and the spread of education, has greatly affected the position of women in Central Province. In Kikuyu society, women are responsible for taking care of the family, cultivating the family's land and producing food. The woman's position has been strong because, traditionally, a man cannot acquire land before he marries and thus has a wife to cultivate the land (Svensson, 1986). Currently, with the situation where many men are temporarily away from the farm, the women are in practice responsible for agricultural production. Unlike most other areas of the country, where (de facto) female-headed households are confined to subsistence production, in Central Province they are fully involved in commercial production for the market. This is due to the fact that the farm is considered an essential part of the household production apparatus. Although absent for most of the time, the men are actively involved in developing their farms, and a significant share of their off-farm income goes to farm investments. The household economy, thus, consists of two closely integrated sides.

A consequence of the changes in the position of women, including their role in market production and increased schooling, is reflected in the changing values and views on reproduction. Several of the fertility determinants indicate that the

population in these areas is further into the demographic transition than those in the western parts of the country. Women in the young age groups especially have experienced a change in nuptiality and, consequently, in reproductive behavior. The median age at first marriage has started to rise more rapidly among the population in Central Province than in other parts of the country. A comparison of the data from Central Province with those from Nyanza Province clearly show this trend. In Central Province, 56.3 percent of women aged 15 to 49 were married at the time of the 1984 KCPS, whereas in Nyanza Province, 76.6 percent of women in the same age group were married (Ayiemba, 1988). The median age at first marriage for women aged 20 to 24 in Central Province is 19.0 years, while it is 16.6 in Nyanza Province. Similarly, median age at first birth for the same groups is 19.6 and 17.9 years, respectively. Mean births within the age group in the districts of the Central Province varies between 1.65 (Kiambu) and 1.912 (Nyandarua), whereas the corresponding figure in Kisii is 2.16 (Republic of Kenya, 1980; 1981; n.d.).

A look at the statistics by ethnic groups shows that the proportion of women never married in the age group 15–19 years were 91.9 percent and 76.1 percent for the Kikuyu and the Kisii, respectively. The corresponding figures for the age group 20–24 years were 36.7 percent for the Kikuyu and 31.4 percent for the Kisii (Ayiemba, 1988). All of the above indicate a substantially lower fertility among the young women in Central Province than in Kisii. This difference can be attributed to the degree of socio-economic development, education and participation by women in the monetary economy beyond household work.

V. Conclusion

The exceptionally high fertility in Kisii District appears to be just one reflection of the geographical location and consequently, the socio-economic structure of the district in Kenya. Despite the fairly advantageous ecological production base, Kisii and the other densely populated areas west of the Rift Valley and in the Lake Victoria Basin have lagged behind in the development process since independence, compared with the more centrally located areas of the country. Western Kenya lacks many of the prerequisites for development that are present in the districts of Central Province. Kiambu, Murang'a and Nyeri. These include, for example, a better transportation and communications network, as well as educational infrastructure and personnel, which are largely responsible for the spread of modernization and Western values in the area. Also, Central Province has been the core area of the modernization and Westernization processes since colonial times supported by education, wage labor and the missionary influence. The proximity of Nairobi has also facilitated penetration of a full-fledged market economy in this area.

It seems plausible that a successful penetration of modernization and Western values would also gradually change the fertility behavior of the people in Kisii towards favoring a smaller family size. However, it may be argued that the spatial factors of the development process in Kenya may work toward a larger regional difference in development, where the already favored central areas will develop even more at the cost of the remoter areas. One indication of this is the high fertili-

ty and resulting rapid population growth in the areas west of the Rift Valley, that hamper the development of the economy and implementation of the social services such as education.

DISCUSSION

The present analysis suggests that three separate levels of demographic regimes coexist simultaneously in Kenya. The first, the pre-transitional regime, is dominant in the mainly pastoral and agro-pastoral regions. There, fertility is lower than average but likely to increase in the future. The second and third regimes are both transitional. The second regime reflects the early transitional stage and is characterized by exceptionally high fertility. The densely populated smallholder areas in western Kenya belong to this category. In the third, the late-transitional stage, the penetration of a monetary economy and commercialization of production, as well as the dominance of modern values have started to change the rationality of reproductive behavior. Consequently, fertility has begun to decline. The major smallholder areas in Central Province represent this category.

The case of Kisii District in western Kenya was discussed to shed light on the determinants of exceptionally high fertility. The rationality for high fertility there stems from the socio-economic reality prevalent in the district. The area thrives on smallholder agriculture. The farms are owner-operated and farmers rely on traditional, labor-intensive methods. Farming is, to an increasing degree, the responsibility of women who are dependent on the labor of their children. Furthermore, in the traditional context, almost the only way for women to own property, ensure old-age security and gain prestige in general is through their sons.

The analysis supports the theory of demographic transition and the intergenerational wealth flow (Caldwell, 1976; 1978). In the context described above, the direction of the intergenerational wealth flow is from the children to their parents. The direction of the wealth flow is, however, being reversed by the ongoing societal processes in the area. Rapid population growth leads to land fragmentation, which forces young people out of agriculture. The need for and the benefits from children's labor are reduced at the same time as it becomes increasingly difficult to feed a large family. Simultaneously, schooling is seen as a route to well-being, but the costs of educating many children are high. Again, several authors argue that education is the single determinant most closely associated with declining fertility (Caldwell, 1980; Cochrane, 1979; United Nations, 1987).

In the long run, the above factors are likely to lead to a slowdown in population growth in the area. However, the position of Kisii and the rest of the western part of the country, in the Kenyan regional structure, may become largely responsible for hindering the process. As compared with the more centrally located smallholder areas of the country, the areas west of the Rift Valley have lagged in development. The western part of Kenya is poorer and more socio-economically disadvantaged when it comes to, for example, the levels of education among the population and contacts with a modern life-style. The differentiation in the position of western Kenya in relation to the central areas is further accentuated by

population growth, which aggravates to the problems faced in the provision of education and other social services.

The regional pattern of population growth in Kenya is likely to change in the future. The fastest increase in population in the future may take place in the peripheral areas as the modernization and monetarization of the economy affect the pastoral societies. However, due to the small populations in these areas, the increase in absolute numbers will remain modest.

In the central areas, population growth is likely to slow down as welfare increases. The main problem areas are those smallholder areas where fertility is currently the highest and are lagging behind in development. In these areas, the rapid population growth further aggravates the situation by hindering the development efforts that could bring forth a decline in fertility.

NOTES

(1) The total 1979 population figure of 16.1 million used in the article reflects the revised estimates on the basis of census statistics given in the KDHS report (Republic of Kenya, 1989). The figure is somewhat higher than that of 15.3 million given in the first report of the 1979 census (Republic of Kenya, 1981). This demonstrates the need for caution when interpreting Kenyan (and African, in general) population statistics.

(2) Harambee as a concept, meaning collective effort, or literally 'pull together,' is indigenous to Kenya. It embodies ideas of mutual assistance, joint effort, mutual social responsibility, and community self-reliance. Before independence, Harambee was a grassroots form of social exchange of labor and other forms of mutual assistance. The concept was introduced as a national slogan in 1963 by the first president of independent Kenya, Mzee Jomo Kenyatta. In later years, Harambee self-help projects have had substantial economic significance in the country's development efforts (Mbithi & Rasmusson, 1977).

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Author's Name and Address: Juha I. UITTO, *The United Nations University, 53-70 Jingumae 5-chome, Shibuya-ku, Tokyo 150, Japan*