

Land, Intergenerational Transfers, and Fertility in Nyeri, Kenya

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ABSTRACT

The current study presents a qualitative insight into the processes that connect diminishing land availability and farm size on declining fertility in rural Kenya. Our goal is to contribute to the current understanding of the land-fertility relationship by using focus group discussions and individual interviews to demonstrate how rural Kenyans perceive the importance of land to their own fertility behaviors. Results from focus group discussions and in-depth interviews suggest that decisions regarding the number of children to have stemmed primarily from the resources that parents believe they will be able to provide and pass down through inheritance. Declines in land availability and farm size were among the primary reasons that respondents reported deciding to limit their fertility. Although discussants stated that the high costs of education impacted fertility decisions, they reported that this was because education has become a substitute for land inheritance.

The current study presents a qualitative insight into the processes that connect diminishing land availability and farm size on declining fertility in rural Kenya. Numerous researchers have examined the impact of land availability and/or farm size on fertility behavior (Cain 1985; Clay and Johnson 1992; Easterlin 1976; Hawley 1955; Merrick 1978; Schutjer, Stokes, and Poindexter 1983; Stokes and Schutjer 1984; VanLandingham and Hirschman 2001), but these studies have been limited to largely historical and quantitative data. While appropriate for indicating trends over time, such data do not explicitly clarify the pathways and processes linking land to fertility decline. Our goal is to contribute to the current understanding of the land-fertility relationship by using focus group discussions and individual interviews to demonstrate how rural Kenyans perceive the importance of land to their own fertility behaviors. Our data help clarify the reasoning and experiences of those who actually contributed to the Kenyan fertility decline, as well as assess the viability of causal explanations implicit in the land-fertility relationship.

Rural Kenya is particularly interesting to the study of fertility decline for several reasons. First, Kenya was among the earliest sub-Saharan African countries to experience fertility decline, which occurred earlier than expected (Garenne and Joseph 2002). Various theories exist regarding why the unexpected occurred, ranging from family planning program explanations (Robinson 1992) to those positing a change in the direction of wealth flows, making children an economic burden rather than a benefit (Caldwell 1982). Second, the fertility decline was not uniform across the country. While, in 1978, Central Province had a total fertility rate (TFR) of 8.4 and Nyanza Province had a TFR of 8.0, by 1998 the TFR for Central Province had declined to 3.7 (66%), whereas the TFR for Nyanza Province only fell to 5.0 (37.5%) (APHRC 1998). A third reason this study of rural Kenya is interesting is that although it remains predominantly an

agricultural country, the rapid population growth that has occurred because of declining mortality rates has resulted in a scarcity of land (Oucho 2000; Ovuka 2000). Although fertility is declining, the population continues to grow at a rapid pace. With the current total fertility rate at 5 children per woman and the attendant growth rate slowed to 2.3 percent, the projection is that more than seven million people will be added to the current population of 32.4 million over the next 15 years (Population Reference Bureau 2004). Over 90 percent of Kenya's population resides on the 18 percent of land area suitable for agriculture, and there has been a serious decline in that land over the last half century (APPRC 1998). For the country as a whole, the amount of available agricultural land per person decreased by 64 percent (from 0.98 hectares in 1969 to 0.35 hectares in 1993). In the Central Province, the availability of arable land per person declined from 0.58 hectares in 1969 to 0.19 in 1993, a loss of 67 percent. The last, and perhaps most salient, reason that Kenyan rural fertility decline should be examined has to do with the recency of the demographic transition in sub-Saharan Africa; researchers have a unique opportunity to examine the transition from the perspectives of those who actually induced the decline.

Background

Despite the global fertility transition of the last century, much of sub-Saharan Africa continues to have high fertility. Many theories exist to explain or predict fertility decline. Prevalent theories are largely economical and situated in the belief that fertility decline occurs with modernization (Caldwell 2001). Perhaps the most well-known of these is the demographic transition theory (Davis 1945; Notestein 1953). It states that industrialization or modernization first brings about a decline in mortality, followed by a fertility decline as child survival rates increase. Some doubt exists about whether the fertility theories initially developed to explain

transition in 19th century Europe are applicable to developing countries today. The reasons include the developing world's relatively rapid pace of mortality decline, high levels of pre-transition fertility, option of international migration as a population pressure valve, and fewer opportunities for female labor force participation (Teitelbaum 1975).

Given these fertility variances between sub-Saharan Africa and the rest of the world, researchers now look beyond the demographic transition theory for plausible explanations for the recent African decline. Caldwell's theory of wealth flows (1982) states that key social and cultural forces sustain high fertility in sub-Saharan Africa, and that the timing and pace of fertility decline can be determined by monitoring continuity or change in wealth flows and family nucleation. When parents benefit economically from having many children, fertility remains high; however, social and other changes that increase the cost of children result in smaller families. Two factors that plausibly influence the direction of wealth flows are farm size and land availability.

Land and Fertility

The land availability-fertility thesis was developed by Easterlin (1976) as an explanation for why fertility rates were higher in pioneer settlements in 19th century United States than in the older regions in the East. Easterlin suggests that, where bequeathing land to children is important, the availability of land affects fertility. Microeconomic theories of fertility developed by Easterlin and Crimmins (1985) suggest that natural resources can affect fertility by increasing or reducing the demand for children. Stokes and Schutjer (1984) further posit a land-labor hypothesis asserting that owning more land drives fertility because more children potentially raises farm profits. In turn, Cain (1985) argues a negative relationship; the more landholdings a family owns, the fewer children they will have due to the security provided by the land.

Various quantitative studies have tested these theories regarding the relationship between farm size and number of children. Most frequently examined is Stokes and Schutjer's (1984) land-labor demand hypothesis that owning more land raises the demand for children. A range of studies has found a positive relationship between amount of land owned and fertility in Rwanda, the Philippines, and Lower Egypt (Clay and Johnson 1992; Hawley 1955; and Schutjer, Stokes, & Poindexter 1983).

Only a handful of studies, however, have interrogated the land availability hypothesis that, in places where farmland is scarce and expensive, the economic value of children on farms is decreased, resulting in lower fertility. Support for this theory has been found in 19th century United States and 19th century Thailand (Easterlin 1976; VanLandingham and Hirschman 2001), as well as, more recently, in Brazil (Merrick 1978). The lack of longitudinal data, however, precludes inconclusive conclusions about causality.

Building on the theory of wealth flows developed by Caldwell (1982), the current study proposes to examine the relationship between the diminishing availability of land and farm size in the Nyeri District of Kenya and fertility rates from the accounts of residents of this area, who are members of the Kikuyu ethnic group. Specifically, this research addresses the question of how residents perceive the relationship between farm size, land availability, and their fertility. Our findings should not only help clarify how public policy might relieve individual difficulties, but also grant insight into the nature of future fertility declines in rural areas.

Data and Methods

This analysis uses data from a field study conducted by the African Population and Health Research Center in Nyeri District in June, 1999. Focus group discussions and individual interviews were carried out with two female cohorts (ages 40-49 and 50-59) and two male

cohorts (ages 45-54 and 55-64) about the social and economic conditions in their lives as well as their fertility preferences and behaviors. The older cohorts of males and females were purposely selected to match the ages of those who ended their childbearing before the fertility transition began, while the younger cohorts were chosen to reflect those who began childbearing shortly before the onset of the fertility decline, which occurred around 1980. Both people who limited their family size (using modern contraception) and those who did not use family planning were included in the interviews.

The focus group discussions were held separately for men and women in each cohort, and for those who limited their fertility and those who did not, respectively. FGDs were held in both rural and urban settings for a total of sixteen groups. In addition to the FGDs, individual interviews were conducted with two people per focus group, which resulted in sixteen male and sixteen female interviews. The FGDs and interviews were tape-recorded and then transcribed in July-August 1999.

Questions were loosely structured to enable respondents make allusions to the socioeconomic and cultural factors that may have led them to limit their fertility, such as the role of land scarcity. We expect to find that land availability was important for those who participated in the fertility transition, and that declines in farm size in the region *preceded* the fertility transition. Narratives from both those who did and those who did not contribute to the fertility transition are expected to further our current understanding of the revolutionary transition from natural to limited fertility.

Findings

The Role of Land in Fertility Decline

Land Valuation

The Kenyan economy is primarily agro-based with agriculture contributing about one quarter of the gross domestic product. Ninety percent of the population living in rural areas derives its livelihood directly from the land. Agriculture is therefore regarded as the lifeline of the majority of the rural population. To them, land constitutes the means to a livelihood, determining the levels of prosperity or poverty, allowing them to fulfill social obligations, and conferring social status and political power (Kenya Land Alliance 2001). From close to 600,000 square kilometers, only 17 percent is suitable for rain-fed agriculture, out of which 2.2 percent of it is covered by forest reserves. Nyeri District comprises part of this arable land. Arid and semi-arid lands (ASALs) comprising grassland and savannah rangelands cover the remaining 82 percent (Mwichabe 1996).

Land is therefore the most important resource from which the country generates goods and services for the people, and it continues to be a particularly valuable asset. However, the amount of arable land per person in Kenya has been on the decline, from about one hectare (2.5 acres) per person in 1969 to less than 0.4 hectare (1 acre) by 1993. See Table 1 for the regional availability of land.

Table 1: Availability of Arable Land per Person (hectares)

Province	1969	1979	1984	1989	1993
Central	0.58	0.48	0.35	0.22	0.19
Coast	1.49	0.87	0.70	0.54	0.38
Eastern	0.58	0.41	0.35	0.30	0.25
Nyanza	0.58	0.47	0.43	0.39	0.35
Rift Valley	1.90	1.23	1.05	0.88	0.71
Western	0.67	0.50	0.45	0.40	0.35
Total	0.98	0.66	0.55	0.45	0.35

Source: African Population Policy Research Center. 1998. Fertility Decline in Kenya: Levels, Trends, and Differentials

The FGD participants were asked to rank what they considered to be a very important reason why couples decided to limit the number of children to have. They were first asked to list all the reasons, and subsequently to rank them in order of importance. Scarcity of land averaged among the three most important reasons in nine out of the thirteen focus groups.

Q: What reason made people of your generation limit their children mainly? R2: So as to live comfortably and be able to meet the requirements of the children. Q: what about you? R3: I would say it is education so that a child can learn in the expected way. R4: Even the provision of food so that one can give a child enough food. Q: Any other reason? R5: So that children can have good health. Q: For those who limited their children in your generation, apart from the reasons you have given me what other reasons would have made them to limit their families? R1: Why they limited their children was due to decreasing land sizes. Q: What else? [...silence...] Okay you have given me five reasons here as follows Good life, Education, Food, Children to have good health, Scarcity of land. Among all these reasons which one is most important to you? R1: Good life because if you lived comfortably the rest would follow. Q: What about you? R2: It is the issue of scarcity of land. R3: For me I would say that if it is living well in every way, others things like education and other things would come in. Q: I would like you to tell me one. R3: Education. R4: In my opinion if a child is hungry he/she cannot be able to study. Q: So to you it is food. And you R5: Land (Female limiters 40-49 years, Kangocho village).

Q: What has made people reduce the number of children to have? R8: It is due to problems. Q: What kind of problems? R8: Like lack of money. R7: Not just money even land sizes have decreased. For instance a family of four people could be having only one acre. R3: There is also a problem of unemployment. Q: You have mentioned high cost of living, small land size, unemployment, do you have other reasons? R1: Conditions of hospitals. R6: No that falls under high cost of living. Q: Which reason would you say is the most important one among all those that you have mentioned? All: High cost of living such as clothes, food, education. Q: How about the issue of decreasing land sizes and unemployment. R7: That is what has made things very bad (Male limiters 45-54 years, Njogu-ini village).

Q: If you look at the parents of your generation who limited their fertility what would you say in your opinion were their reasons for limiting? I know that we have discussed these reasons but I would like us to write them down. The reasons why people reduced the number of children they had. R2: Even though I may not say much because I have never sat down and asked someone who has limited why they did it. But if you look at the situation in the country in terms of land availability and food productivity, that explains why. R1: Land. R2: And education. Q: Education became expensive? R2: Yes. Q: You had also mentioned something else. Was it scarcity of food? R2: Scarcity of land and food. Q: The food that used to be produced in the farms had lessened? R4: You might be blessed in this way but not in another way. Q: Can you add on that? R4: You cannot add

on that because we had talked about the cost of raising children, clothing, shoes, expenditure on a large number of children will be a problem if you are not wealthy (Male naturals 40 years and above, Gichatha-ini village).

Land Sub-division and Productivity

In the agricultural lands of Kenya, farm sizes have been shrinking due to increased sub-division. As a consequence of this sub-division, units in production are proving agriculturally unviable and most of the portions presently held are uneconomical units with diminishing returns and overall declining value (Ogotu 1993). The association between land holding, as well as its productivity or lack thereof, and fertility intentions was explicitly mentioned by the discussants in the qualitative study. Sub-division of land parcels among family members was cited as a major factor in influencing family sizes. The same parcel of land has been handed down from one generation to another and in the process, the size allocated to children (and their families) has continued to decline over the years. Couples were therefore forced to limit the number of children they had so that they could afford to pass on viable plot sizes.

Q: How about the decrease in land size, how has this affected your lives? Can you tell us?

R3: The farms during the time when we were cultivating, we used to be few but now regarding how things are going, the people of our generation like our husbands, you know the numbers are increasing with time, and the more they are increasing, the land that we used to cultivate continue to be parceled and sub-divided into small sizes. Therefore, this leads to minimal harvests and what you get from the farm is little. Q: How has this affected your lives? [...pause...]. This issue of decreasing land sizes? R3: Decrease in land sizes, if for instance a farm is one acre, and you are three in your family, the farm is sub-divided into three parts. When one acre is sub-divided into three, it decreases. Because earlier on before the sub-division, one could cultivate on half an acre but now you would cultivate on a quarter of an acre. In this case if you used to harvest one bag of maize now you will start harvesting half a bag. Therefore, this has affected one's life. Now it definitely has to affect. And now when it affects what you were able to produce for example Sukuma Wiki [kales], if you used to harvest one bag and it was bought at a price that you realized you could look after a child comfortably and be able to purchase things like Blue Band [margarine], eggs, bread in the morning and you still have excess money to cover other expenses like school fees, today it is not possible (Female limiters 40-49 years, Kangocho village).

Q: Now let us focus on our village here. How about this village as pertains to that issue? We can say the country's population rose sharply, but how about a village like this one?

R6: We were not many because for instance in my case my father brought us up with my siblings so all the food that his land produced was ours. But later I got my own children and my siblings also did the same such that the land had to be sub-divided into parcels. The land parcels could not produce enough food to sustain the additional population in our home because we were originally five but now my father's home has over twenty people (Male limiters 45-54 years, Njogu-ini village).

R2: According to me the effect has been such that in the past, people were few. If we look at our fathers, in their time, maybe a home would have 3 or 4 people and their father, for example would have 10 acres of land. He divides the land and his sons each gets say 4 acres. Now for us our father is one of those sons and we are four, so we end up with one acre each, and if we get four sons each, we are going to give them a quarter each. With such a piece of land you cannot farm on it, you can only build a house (Male limiters 56 years and above, Ciichatha-ini village).

Q: Has the reduction in the farming land affected people's lives? R1: A lot. Like when I started getting children, the farms were big but after the subdivision, lets say I had 3-5 sons, and if the farm was subdivided after I died and my sons also get their own children and when it comes to subdividing amongst the sons, then the farm will be very small. So when you are getting children, you have to consider that. If it is something like coffee, when I was planting it, I was doing it for myself. I planted about 200-400 plants. If I have 5 sons and I subdivide this among them, they will get very few plants. So, nowadays, it is difficult to raise many children (Male naturals 40 years and above, Gichatha-ini village).

Q: How many children did you want to have at that time? R: Four children. At most. Q: Why did you want to have four children? R: I wanted to have four children because.... One, I realized that the population in our country was going up. And the piece of land that you are being given to farm is small..... and cost of living is not going down but up. If its like education it is going up very much, ..clothing and feeding habits. (Male Limiter 40 years in-depth interview Kangocho village).

Q: Tell me, at the time you got married, did you think about the number of children you want to have, before you got married? R: At that time, you leave everything to God you do not know what God will give you. God blessed me. Q: You did not think of the number of children to have? R: No. Q: Are people these days, thinking on the number of children to have? R: Now these days... let me talk of the past, like me myself I had 10 children, 4 died out of these diseases that come like diarrhea and famine. They were left 4, now later when we came to add, there was family planning, there was the advice that since the war is over, and the country is yours, you must limit children. And land was demarcated, that people started planning their families because when land consolidation was done, you found you had half an acre. Or you are in the 'village,' village people did

not have land. If you are in the village you had to plan your family as there is no land. You are told land would never increase, but people will increase. If you have 10 children, your half acre will remain half acre. So the women we had, started joined family planning (Male Natural 74 years in-depth interview, Kangocho village).

As family farms have been sub-divided over time, overproduction of the land has led to a decline in land productivity. The resulting lower yields and a fall in commodity prices, especially for cash crops such as coffee and pyrethrum, also impacted family size. Given that land was no longer as productive as it used to be, discussants reported that families were forced to reduce family sizes so as to be able to meet their needs. In addition, a cash-based economy where monetary currency is needed to meet daily needs provided an incentive to limit family sizes.

Q: Did the decrease in land for cultivation affect your lives? R2: Yes. Q: Please explain. R2: We used to get enough food, but today due to lack of land the food is expensive. Q: What about during the period you got your children? R2: As years went on, the cost of raising children continued to rise (Male limiters 45-54 years, Njogu-ini village).

The amount of inputs needed to produce a desired output from farming has been changing over time. The discussants mentioned that there has been an increase in the cost of production that has been accompanied by a reduction in the output from the farms. The fall in market prices for cash crops such as coffee has also contributed to reducing output from farms.

R7: Mmh, therefore, child rearing was very cheap because the food in the farm was doing well and the harvest used to be good and that time there was no use of things like artificial fertilizers. But these days the soil has degraded because once you plant your crops and you fail to use fertilizers and manure, they do not do well. Therefore food has become expensive compared to those earlier times. Q: What about the scarcity of land, has it affected the way of life of the people? All: Yes. Q: In which way? R4: These things are linked to each other because... like now... for example, in our family we have built on an eight-acre piece of land. This piece of land has been sub-divided for twelve families. Each family has got a piece. If you look at this piece of land, someone was to plant some cash crop and also want to grow food crops... You see that piece of land you will sub-divide it into small piece and in the past, there was nothing like that. You see like all that piece of land (the 8 acres) belonged to one family, just the husband and the wife. That is why R7 was quick to say that food was growing very well because all that land was used for food crops. If the family had livestock, the manure produced by this livestock was

enough for this piece of land and hence people did know the importance of such fertilizers.

R6: If it is like now, let say horticulture, it is like this farming of coffee. Coffee, - us now.....tomatoes went bad. Horticultural tomato does not do well. We are dependent on coffee. And this coffee before you start picking it, it will have 'eaten' a lot of money by then.....Therefore now, there is a lot of poverty (Male limiters 40-54 years, Gichathaini village).

Children as a Source of Labor and Old Age Security

Large families in African society were historically considered beneficial in the region's labor-intensive agrarian system. This need for high fertility has declined due to a number of factors, most notably the reduction in farm sizes and the mechanization of agriculture. Another important factor is education: as more children attended school, they no longer were a labor source option. The discussants mentioned that families were forced to hire farm hands to work on their farms because of their children's school attendance. They revealed a fine relationship between cultural obligation, land security, and education.

Q: Now when you were having them, didn't you see like they would help you... at old age after educating them? R3.So for us we had learnt from our parents that if I am a boy I would look after my father's wealth and because he had acquired land, the three of us brothers would never live close together..... Now this piece of land since I have inherited it and it cannot be enough for me I realize that the assistance I can give my child is education. But I am not giving him the education so that he can help me in return. The reason is that the education is suppose to assist him in life since there is no land to give him as all the land is occupied (Male limiters 45-54 years, Njogu-ini village).

R9: Yes, we used to do a lot of work. For example we used to go and help our mothers to fetch firewood. We even did so much household work in our homes. But the girls we have these days have no work because most of their parents are educated and they are not given a lot of work. Like now my daughter does not do so much work. Me, at her age, I could milk at night and take to the dairy and in the morning I was expected to go to school. Sometimes I was even expected to take our cows to the dip and then to school. But today I have committed myself to work for my children. I make sure my daughters do not do those hard tasks because they have to go to school. She cannot go to milk or to the dip. But during my time I used to work very hard because like in the evening after school, I used to find that I had been apportioned some household chores that I had to perform before evening. For examples, I was expected to feed the goats, cows, milk, fetch water etc. I used to have so many duties. But children of these days do not do any

work. For example, in most homes, they have workmen. The workload is made easier. But that time during our time, our parents used to wholly rely on us for labor (Female limiters 40-49 years, Njogu-ini village).

Familial Changes and Fertility Reduction

Other changes related to land that have influenced couples to limit family size include reductions in child fosterage and polygamous unions. Fosterage is thought to reduce the economic cost of children to parents since the extended family that fosters the child acts to absorb some of the costs of large family sizes (Isiugo-Abanihe, 1985). Discussants mentioned that due to the reduction in farm sizes, the practice of fostering children has reduced or become almost non-existent because fostering could only be sustained in earlier times, when land was more productive.

Q: You have told me fostering was more common, long time than it is today, or isn't that what you told me? **All:** It is. **Q:** What has made this practice of fostering decline? **R1:** This practice of fostering can decline because of the way things are today. If I have my own children, my sister can tell me that she will bring one of her children and I might not be able to do so because may be I am not able to support even my own children because of the way life is. But long time ago children could be fostered as they did not go to school and it was just (a matter of) feeding the child, and food was in plenty then in the farms. But nowadays I might not be able to take care of someone else's child because of the way life is like. I will not want the child to remain at home when my own child is going to school. I would like him/her to go to school too but I might not afford it (Female limiters 50-59 years, Kahiga-ini village).

Q: You want to tell me there are no people of your generation who have had their children fostered? **R2:** No. There is none. **R3:** You will refuse to have him/her fostered because it is impossible because of the problems that are there. **R1:** If you foster the child, will he ever get educated? **Q:** But do you know that a child was fostered because of problems? **R1:** ...Yes... because of poverty. **R3:** You have problems in your home, and where you are taking him or her, there are also more problems. It is better if she or he suffered here in my home and let that *relative* suffer alone with his people (*no need to bother the relatives*) **Q:** But during your time, when you were growing up, children were fostered, isn't it? (*respondents consent*) what has brought about this change? **R2:** Lack of money, lack of land and the population has gone up. **Q:** Is that what makes fostering to be less today? **R2:** Yes, that is why you decide to stay together. If it is drinking porridge, you drink it (Female limiters 50-59 years, Kangocho village).

Polygamous unions were also on the decline due to scarcity of land; this, in turn, led to smaller families.

Furthermore, these times are bad times because of the high population. People are so many. In the past we used to be told about how land used to be in plenty; how my grandfather for example used to have a very large piece of land. By then I am told my grandfather had four wives. He could get enough land to share for his sons but he sub-divided this land into small pieces for his sons, who in turn sub-divided the small piece for their sons. That is why we find that the land is decreasing. That is why you find that like now even if you want to get at least even a small piece of land for cultivating you cannot get. For example in my case, the small piece that was given to me, I have to share for my son maybe he has a wife, this wife will in turn share for his sons (Female limiters 40-49 years, Njogu-ini village).

R2: If I may add, I will say that, men, long ago married many wives because there was a lot of land, one big parcel here another one there. He could be able to support even three wives, one here the other one in the next ridge, the man only used to graze cattle. They were not very much inclined to educating their children. Children once they grow up they went grazing cattle. These days, from our generation to our children's generation, one can see that the more children you get, the more problems you get in feeding them. Once you get many wives, the more financial problems, there are no jobs, for the children, even if they are educated. Even these children are failing to get married.... (Males limiters 56 years and above, Gichatha-ini village).

R1: There are very many things that happen among women. Men long ago used to marry more than one wife because they had wealth. They could have very many wives because they owned a lot of property. But today, even the person who marries 2 wives, this person usually has a lot of problems. Because maybe you do not have enough land you cannot be able to educate these children. Maybe one wife gets 10 children, the other wife 5 and all of them look upon you. If you are someone who wants many wives today, then there is something wrong with him..... Q: Can a man with more than one wife decide to have only 4 children? R1: Yes it is possible. R4: It is not the man who decides. R1: He can do so. R4: I cannot see how a man can decide on that. It is the woman who decides on whether she wants to get children or not. R1: He can decide depending on how they live in that home. You can both decide and agree depending on how things are. If you do not want many children and your wife also does not want, then you can have few children. Q: Can a man who wants only a few children get more than one wife? R2: Then the man would be promiscuous. If he does not want many children then he is just promiscuous. Q: Do you see like people can do that? R2: No. When a man is getting 2-3 wives, he is doing that because of his wealth, and so that there will be people to look after his farms. But if you have no land and you do not want more than 2 children then you can say that, that man is promiscuous because he is just doing that for pleasure (Male naturals 40-54 years Gichatha-ini village).

Property Inheritance and Rights

The Kikuyu land tenure system emerged during the second half of the 19th century when the Kikuyu began to move southwards from Mt. Kenya and started to purchase land from the hunter-gatherer people, inhabitants of the lower slopes of the mountain. This formed the basis of the Kikuyu land tenure systems known as '*gethaka*' and '*mbari*' which basically were a system of individual and family ownership of land, respectively. At this point in history, Kikuyu land tenure was never communal since the individual or family had full rights to transact business including selling his or her land without consulting anyone. The elders merely acted as ceremonial witnesses to transactions (Kison 1955; Kenyatta 1938). Traditionally, children expected to inherit property from their parents mostly in the form of land and livestock. However, land sizes have reduced over the years and can no longer be inherited by all the children. This also led couples to limit the number of children to have since they did not have any land to pass on to their children.

Most ethnic communities in Kenya subscribe to a system of inheritance where sons normally inherit the family property while daughters acquire property from their matrimonial home. Among the Kikuyu who occupy most parts of Central province including Nyeri, however, females also inherit property, especially if they remain unmarried. In recent years, there has been a tendency towards property inheritance to all children irrespective of their sex. With diminishing farm sizes therefore, parents had to reduce the number of children they were giving birth to.

R1: If a lady failed to get married and just remains at home, these days I see like they inherit land. The lady is 'made a son' and is entitled to a piece of land just like the other sons. Q: So... so... R1: You see you cannot be left alone. You cannot be thrown away just like that. If it is impossible if you failed to get married, you could not be thrown away! Q: So... A girl could inherit land if she fails to get married? R1: Yes (Female limiters 40-49 years, Njogu-ini village).

Q: All the children boys and girls, do you give them the same inheritance? R2: Girls today are getting inheritance. For example, if a girl has had 2 or 3 children and she is at home, we do not count her as a girl. She is counted like any other son. Therefore, they can be given the same inheritance because that girl cannot be discarded..... Therefore, she must inherit from her parents like the rest. That is what we are now doing (Female limiters 50-59 years, Kangocho village).

In most cases, the male head of the extended household decides who inherits family land.

Children who end up not inheriting land tend to have small family sizes because they do not have any property to pass on.

Q: The issue of children inheriting from their parents is very important in our Kikuyu culture. What did men of your generation inherit or are inheriting from their parents in this village? Sons, like you men, what do they inherit? R2: A boy will be given a piece of land or cattle. That is what mostly men inherit. R4: According to the way the country is today, you give out something depending on what you had inherited. Even if he is lazy, you cannot say that you cannot give him your property. If a boy and a girl depending on how they treat you, if the boy is a drunkard, then he will inherit his drinking problems. If the girl is giving you *assistance* and nowadays girls do not necessarily get married. So, you will weigh and see that since this person supports me then I should give her a larger inheritance. So now we have both boys and girls inheriting depending on the amount of property you have (Male Limiters 55-64 years Njogu-ini Village).

Others are forced to purchase additional land elsewhere so that, in addition to what has been passed on to them through the family lineage, they have enough to guarantee that all of their children inherit some land. The cost of purchasing land is very high and people bear this in mind when deciding on the number of children to have. Those people who had no land passed on to them by their fathers were forced to buy land elsewhere if they could afford to given the high cost of land.

R3: It has affected our lives in that, here, that land even giving your son a portion, there is very little to give. What you can give your children is somewhere to build a house instead of renting a room in town. So, the issue of land if one is interested in farming he/she has to go out to earn and buy. But here, this portion is for helping me to look after the young ones. But once they grow old, the land is not theirs, the land will be sub-divided among all the sons all are equal and mine but I will not hasten to give anybody land (Female limiters 40-49 years, Kangocho village).

R2: Let me say that, that time our parents knew how to look for wealth. They could look for places with farm plots and they could buy many and keep. I see like they used to buy land depending on the number of sons they had. Therefore let me say that most of the sons they had. Therefore let me say that most of the sons of our time, what they have is wealth they inherited from their fathers. Parents used to have up to five or six pieces of land. Now when the sons grow up to the age of getting married mostly they got married at the age of 30. The father would give them each a piece of land (Female limiters 40-49 years Njogu-ini village).

R7: It affected a lot. Like now, if we look at it, like the one I have, I do not expect to give him a piece of land. No because I was left half an acre and now this half acre, I can only say that it is a 'nursery', [...*inaudible*...] if he goes and sees a piece of land somewhere else, he can buy for himself. Q: Did this affect the number of children that you desired to have? R7: It affected. R5: That issue affected. Like what one of the speakers mentioned before that one looks and sees if he gets the number of children like his father did, he will live in poverty. And about what you had asked, about what we would leave our children, there is nothing else that we think we can leave them. Mostly, is that they get education (Male limiters 40-54 years, Kangocho village).

Women, particularly those more-recently married, reported making a decision on the number of children to have immediately after getting married by assessing the size of the land in the matrimonial home or the share that belonged to their husbands. Those who got married in a home where the land size was small made a choice to have fewer children.

R6: Like now, lets us say that first you have to look ahead because today the land has been subdivided into very small pieces for example the land I would call my father's, has been sub-divided into small pieces for his sons. Therefore the land is very small. If I have to be married there, once I get to that home first I have to study the land and find that there is nothing to be inherited there because the land is small. Q: So you want to tell me that there is a change... R6: There is a change. There is a great change because once you get to that home you have to realize that the land is small and cannot even be enough for you. Whether the husband is working or not you have to know that this portion is very small and it cannot even be enough for your family alone. Therefore you have to look ahead and see. If your husband did not inherit anything substantial from his father, then even for your children, if you do not give him education in future, he might do what... So us we give the education so that in future he will work for his own wealth. Q: And since this expectation is what you are supposed to give your children has changed, how did this change the number of children that you wanted to give birth to? R4: By the things we are seeing nowadays. That is why I said we have work ahead of the times. It affected the number of children, because just like she has said, if you look ahead and see that there is nothing you expect for your children, if you see that the land is small, if you had planned to get five children for example, you have to reduce this number. This is because, if out of these five there are three boys and there is nothing you are giving

them probably it is just a fraction of an acre, automatically you know that you will only get a certain number of children (Female limiters 40-49 years, Njogu-ini village).

Again, people these days are meeting in town. For example you, you may meet with your potential husband in town. You have never been to his rural home. You do not even know how it looks like. Now if you give birth to twenty children, where do you think you will take them? Sometimes your husband may even be open to you and tell you that he does not have land even to build for you, and you have to wait until he buys so that he can build for you. You as the woman, you have to be wise and limit your births (Female 40-49 years Njogu-ini village).

The same conscious decision about the number of children to have at the beginning of marriage was also made by men who then convinced their wives on why they should have a certain number of children. Scarcity of land was often mentioned as a reason for wanting to limit the number of children to have.

Q: Tell me, when you were talking with your wife, what were her opinions? R: Her opinions were that children. I think she had been told by the older women, that few children are not good because, some might die and her she was thinking of 5 children. So I tried to convince her and we even went for seminars. I used to tell her, look at such and such a home and note the difference. Q: Her she wanted how many children? R: She wanted 5 children. Q: You, you wanted how many? R: I wanted 2. Q: Because, 2 and 5 are different, how did you resolve, your difference? R: I talked to her, I convinced her, gave her examples, told her like land, if we take our share, and then the others take their share, there is nothing. We talked for a bout six months, and she agreed, we stayed with those 2 children for 9 years. (Male 45-54 years limiter in-depth interview Kangocho village)

Q: When you were getting married, how many children did you want to get? R: 3 children. Q: Why did you want 3 children? R: I wanted to get 3 children because according to the way I have been brought up and the problems that I went though and the problems that I can see that will be there in the future, since I read newspapers and magazines. After sometime if we get many children and I have to educate these children and the piece of land that I was left for by my parents is small. So, I saw that I can only afford to be able to take care of 3 children. (Male limiter 55-64 years in-depth interview Njogu-ini)

Education as a Substitute for Land Inheritance

Education is frequently considered one of the primary catalysts in fertility decline.

However, results of the focus group discussions and in-depth interviews suggested that rather

than there being a direct relationship between education and fertility, land might, in fact, be the driving force behind the inverse relationship between education and fertility. Discussants reported that a quality education has become a substitute for land inheritance and is often the only inheritance they can give their children. Given the high cost of education, couples have thus been forced to limit the number of children they had so that they could afford to give them a good education.

R5: Like us, when it comes to inheritance, there is no property. It is not like in the past when men had many cattle, land and they could say that they will give this and that to so and so. But today there is nothing that we can inherit and there is nothing that our children can inherit from us. Since there is no property and life is expensive. So now you just educate the child and hope for the best and the child also just tries to survive and hope for the best for the fathers since there is no property now. So, we cannot compare things of the past and of today (Male limiters 55-64 years Njogu-ini Village)

R1: As for us the time when we got our children according to how we saw the situation, depending on the home which one got married, and the size of the land there, one would think and hope that if God could help her to get enough money and educate the child, the child could inherit education, so that the child could study up to the level where he or she would want to achieve. Q: What do the rest of you say? R5: Us girls we would inherit education only. Q: This expectation to inherit education and the fact that there was no land or livestock so the inheritance you would give to your children is education, did this expectation affect the plan of the number of children people would have wanted to have? R2: Yes, it affected. Q: In which way? R2: Because this was when one reduced the number of children to have, so that one could educate the ones she or he already had. This was by making a decision not to have more children (Female limiters 40-49 years, Kangocho village).

Q: Okay. Let us continue. Now when your parents were getting their children, what things were they expecting to leave for their children and when you were getting your children, what things were you expecting to leave for them? You know when you were getting your children you had some home. Did you have any hope of ever leaving anything for your children? All: [Laughter]. R8: What else apart from education? It is only education. If you educate your children that is all you could give them because you see we do not have land. Even the land we have is not ours. It belongs to their fathers. None of these women who are here can confess and say that she has any land. All what we have is what we inherited from our fathers. There is no land we have bought on our own. Now you see, since there is no land that we have bought for ourselves, there is nothing else our children can inherit from us apart from education. R7: Now the only thing we have for our children is education. Big pieces of land are no longer available. We see that education is the only thing they can inherit. We pay school fees and the

children to work hard enough that is the only thing we have to offer (Female limiters 40-49 years, Njogu-ini village).

Q: What did men of your generation expect to give to their children? R3: Education for we had nothing else to give them. Q: Education only, there is nothing else you expected to give them? R3: There wasn't because when this property was left to us... R1: Wait a minute, what we inherited from their fathers is still there, but if you got lucky and bought more land and plots elsewhere, your son and your unmarried daughter will share your property equally, including the property I inherited from my father and multiplied. In addition to that I have given such a child education so all my property belongs to them. R5: But the most essential thing that a child can inherit from parents today is education. Education is the most important of all. You can even give a child education and agree with the child that his inheritance has ended there. But land if I have not been lucky to have, there isn't (Male limiters 45-54 years, Njogu-ini village).

R2: Even when you have the desire to have more children, it is not possible. Q: Now, when parents of your generation or even you were getting children, what did you expect to give to your children as inheritance? R4: Yes, it is simple. What we expected to give to our children.... we know that these days education can be equated with richness. There is no other wealth greater than education. We expected our children to inherit education from us. Even today, since we still have children in school, we expect them to inherit education because men of our generation are the ones likely to be found doing Harambee [fundraising], so that their child can go to the university or going overseas for studies. There is nothing else because.... R1: There is no land. R4: I can't give them land, even myself I don't have. Q: Now, the knowledge, that you only expect your children to inherit education and not land, did it affect the number of children you wanted to have. R1: Yes (Male limiters 56 years and above, Ciichatha-ini village).

Q: Now, let's talk about what children inherit from their parents. The practice of children inheriting from their parents is a very important custom among the Kikuyu. What were men in your generation inheriting from their parents in this community? R4: Our generation? Q: Yes. R4: Like one of us has mentioned, one would inherit land from parents, because he would be told build there, but now, the land is small, and children can only inherit education from their parents. Q: Were there other things that people of your generation were inheriting from their parents R2: There was..... let's say, what has been mentioned land, and also there was something else that those parents had, livestock. When a child reached the time to get circumcised, like me I would inherit what I am given lets say livestock. When my time of getting married reached, I would be given livestock for paying bride-wealth but now it is different. At that time a father could give you three cows for you to take to your in-laws as bride-wealth. But now you will find that one doesn't even have a single cow. So there is a different in terms of the inheritance each generation is getting. Q: What about when parents of your generation were getting children, what were you expecting to give them as inheritance? R5: What I would have expected to give my children is education. That is what parents of our generation wanted. Now when I have educated him/her, he/she will be pleased with that inheritance. Or if it is a technical course I have taken him or her to pursue, he or she will be happy as

it will help him/her in all his/her life. Q: Is there anything you can add? R2: Us, its just education. R3: More so education. R4: Education, the only inheritance they can get is education (Male naturals 55-65 years, Kahiga-ini village).

Parents aspired to their children attaining a secondary level of education that was beyond what most of them attained themselves. Secondary schooling was considered crucial to determining job opportunities and a better future for the children.

R4: When we were having our children, the highest levels of education we attained was up to Standard Seven (equivalent in the American system). We were not targeting that level for our children we wanted to educate them to the highest level up to where he or she feels it is enough for him or her. But not that we as parents we have been unable to educate them. We did not target Standard. Seven. No, we wanted them to go ahead until he... [Inaudible]. For me my hopes and my efforts were geared towards... [The rest is swallowed by a prolonged laughter from the participants]. Up to now, I keep telling God that, though I never went to school, my children should continue with education if it is God's will. I remember one man who assisted me very much. He told me "Do not think about small issues. Think big". I still remember those words. That is why I told myself that I do not want children to go up to form four. If it is possible even if I spend so much money after all we are always earning and the money never becomes enough... Therefore, whatever I get, I should struggle and pay for education for this child because I have no land. I want him to go on even if he makes it to that university... that was my expectation (Female limiters 40-49 years, Njogu-ini village).

Family Planning Services

The availability of family planning services was said to have acted as a catalyst to an already existing demand to limit family sizes. Family planning was therefore not the overriding explanation for limiting the number of children, but rather served to help families attain their fertility desires. In this vein, diminishing land size was mentioned as a main factor that encouraged people to adopt modern methods of family planning.

Q: Now, people say that availability of information about modern family planning made some people decide to have few children, other people say that no its not availability, when it became available, it only affected those who had decided to have few children. Which one of those do you think is true? R2: Me I won't say that availability of information made everybody decide to have few children. I can only say that what made all people accept to have few children are problems associated with raising children and educating them. When the cost of things was increased, eh...and land was not producing enough food as before, education became expensive, that is what I would say made, most

people accept to have few children (Male limiters 56 years and above, Ciichatha-ini village).

Q: What had made you think of using modern family planning? R: It is because I did not feel like having any more children. We kept on adding to the number of children that we were had but our source of income, the farm was not expanding accordingly. We were increasing the number of children but we were not increasing the size of the farm. Q: You had told me that by them you had 10 children? R: Yes. That is when I had thought about it. I could see that I was increasing the number of children but the size of the farm was not increasing. Q: Why didn't you try another method? R: I never thought of trying another method. I had just thought of not adding any more children but in the end I ended up having more. You see I was not very bright [*laughter*] (Female limiter 56 years in-depth interview, Kangocho village).

Q: When you were having children, what were people saying about modern family planning? R: They were saying that people were out to be eliminated, but a few were saying that we are in trouble and we can only avoid that by listening to the person who is telling us to limit fertility. Because, if you have ten children you will not be able to take care of them all. The land size is diminishing, there are no jobs and things are costly..... Q: I will ask you, what were your friends saying about FP? R: My friends were saying that modern family planning was not good, but few said it was good. (Male limiter 55 – 64 years in-depth interview, Njogu-ini village)

Discussion

Although many studies have attempted to understand the relationship between land and fertility, we are able for the first time to present information regarding the fertility decision-making *processes* that occur when farm sizes and land availability decline. Focus group discussions and in-depth interviews of respondents whose childbearing years occurred during a considerable fertility decline sheds much light onto the factors that these individuals considered when deciding whether or not to limit their fertility, and if so, to what extent. The importance of land to these rural Kenyans cannot be understated. The vast majority depends upon agriculture for a living. However, the importance of land extends beyond income; wealth, power, and prosperity are all measured by the amount of land one owns. In the past, children helped with farming, and food and land were abundant. As the population has grown and families have repeatedly divided their land among their children, parcels continue to shrink. This causes over-

burdening of the land, leading to reduced productivity. These factors find support for Caldwell's (1982) theory of wealth flows. When land was plentiful, large families were profitable because children were able to contribute to increased farm production. In this way, children contributed to the family, rather than draining its resources. As farms shrank and families were not able to increase farm size due to land availability, children became less productive and profitable. At the same time, there was increasingly less land to pass on future generations. Education is viewed to be the primary substitute for land. Although primary education exists in most places and is relatively inexpensive, secondary schools are often further away from the home and have costly tuition and boarding fees. With high unemployment rates throughout Kenya, high educational attainment is necessary to secure stable employment. A lack of land to pass on to children and high costs of education cause families to consider limiting the number of children they have. Once families started to view education as a substitute for land for their children, the costs of childrearing dramatically increased. This changed the direction of wealth flow from parent to child. As Caldwell postulated, discussants reported that when this occurred, they began thinking about limiting their families.

We have had an opportunity, with this research, to address the factors that lead men and women to consider limiting their family sizes during a fertility decline. Results from focus group discussions and in-depth interviews suggest that decisions regarding the number of children to have stemmed primarily from the resources that parents believe they will be able to provide and pass down through inheritance. Although qualitative interviews cannot provide representative empirical data for the relationships between land availability, farm size, and fertility, they provide insight to the types of concerns men and women have when thinking about their desired family size. Declines in land availability and farm size were among the primary reasons that

respondents reported deciding to limit their fertility. Although discussants stated that the high costs of education impacted fertility decisions, they reported that this was because education has become a substitute for land inheritance.

The findings presented here have several important implications for future research on sub-Saharan African fertility. First, the causality of the land-fertility relationship as indicated by the discussants reveals that decisions to limit family size are often based on available resources. The importance of providing children with these resources was repeatedly mentioned in the discussions. These findings indicate that, in the face of scarce resources, family size may continue to decrease. Perhaps the most surprising discovery is the relationship between education and fertility. Many studies have documented a negative relationship between education and fertility. However, our study provides new evidence that education may, in fact, be an endogenous variable in fertility decline; discussants reported that education is a substitute for land inheritance. Therefore, the relationship remains primarily based on land availability. Further exploration into this possibility is needed. We did not find that the introduction of contraception introduced ideas to control fertility; discussants did not believe that family planning services encouraged them to limit their fertility *per se*, but that the services did provide the means via which people fulfilled their fertility desires.

This study provides an in-depth look into the factors that encourage fertility decline in rural Kenya from those who lived during a fertility transition. While many reasons for limiting family size were given, two of the most important to discussants were the decreasing availability of land and farm sizes. While the study was limited to those living in rural Kenya, many of the factors affecting their lives are occurring elsewhere. As rapid population growth continues in much of sub-Saharan Africa and the availability of arable land declines, the information provided

here will enable researchers to develop new hypotheses about the future of fertility decline in these areas.

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