

# **Patterns of Stall in Fertility Decline and their Determinants in Eastern Africa**

**By**

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## 1. Introduction

Slowing population growth has been established as a necessary, although not sufficient factor in ameliorating foreseeable threats to global peace and prosperity. In parts of Africa and Asia, the decline in fertility, which had begun in the 1970s and 1980s, stalled in the 1990s. Fertility analysis of countries with at least three data points shows that about fifteen African countries are experiencing stalled fertility decline (Bongaarts 2006 and 2008; Westoff and Cross 2006; Shapiro and Gebreselassie 2007). In many places, the disparity in family size between the upper and lower economic quintiles has increased as fertility decline stalled. Researchers have linked the stall in fertility decline to a number of factors including the loss of focus on family planning in the development agenda of these countries. Others have directed attention to the significant impact of this stall on long term population projections for some countries (e.g. Kenya and Bangladesh). Available evidence from the literature suggest that stalled fertility is associated with contraceptive use, infant and/or under-five mortality, marriage patterns, tempo of fertility, trends in socioeconomic development, promotion in family planning, etc. (Bongaarts 2002, 2006 and 2008; Westoff and Cross 2006; Shapiro and Gebreselassie 2007).

Although the stalling of the transition in some African countries has been documented, its patterns, determinants and possible consequences on population wellbeing remain to be clarified as well as feasible programmatic strategies to counter the stall. Previous analyses of, and conclusions about, the stall in sub-Saharan Africa were based mostly on two nationally representative data points (Bongaarts, 2006; Shapiro and Gebreselassie 2007), which hides the real trend over time. Further, most analyses are focused at country levels with little attention paid to within-country fertility differentials following complex contextual nuances among socioeconomic and cultural groups. In this paper, we explore what is known about stalled fertility decline in the region; underscore issues relating to patterns of the stall, and determinants; highlight national specificities and regional commonalities within four<sup>1</sup> countries in Eastern Africa (Kenya, Tanzania, Uganda, and Zimbabwe) and identify feasible program options for addressing the stall.

## 2. Objectives

This study specifically seeks to:

- ❖ Describe fertility trends, patterns, and magnitude of stalled fertility decline in Eastern African countries at the national and among subgroups within countries;
- ❖ Identify peculiar and common factors associated with stalling fertility decline in the region;

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<sup>1</sup> The four countries chosen are those with four rounds of nationally representative surveys to allow for monitoring fertility trends.

- ❖ Assess potential opportunities for addressing stalled fertility in the region.

### **3.0 Analytical framework**

We base our analyses on three analytical models: *change in reproductive behavior model*, *the socioeconomic model* and, *the institutional model*. These models are derived from the synthesis of literature and will enable a comprehensive understanding of the fertility stalls in Eastern Africa.

#### **3.1 Change in reproductive behavior model**

According to the reproductive behavior model, change in proximate determinants of fertility could explain *fertility stalls*. In general, declining or steady age at marriage, earlier motherhood, shorter birth intervals, increasing out-of-wedlock childbearing, decreasing contraceptive use and/or of infertility rates could slow or stop fertility decline (Bongaarts 2006 and 2008; Garenne 2007; Shapiro and Gebreselassie 2007). For instance, the average annual rate of increase in contraceptive prevalence among countries with stalling fertility was 0.8 percent per year compared to 1.4 percent per year observed among the non-stalling mid-transitional countries (Bongaarts 2006). Likewise, fertility stall in Kenya, Nigeria, and Rwanda was associated with either a decline or no improvement in contraceptive use, while the tempo of marriage and childbearing has been noted as factors explaining stalling fertility in Tanzania (Garenne 2007). However, change in demographic behavior could affect fertility stalls through collective behavior change or selective behavior change.

From the perspective of collective behavior change, fertility stalls may be observed among all socioeconomic and demographic categories in a country. Evidence of fertility decline in poor Asian and Latin American countries, as well as absence of significant difference between socioeconomic categories regarding fertility and child mortality in western countries, tend to support this hypothesis.

With reference to the selective behavior change, fertility stalls could be due to fertility decline among some groups and stable or increasing fertility among other categories (Shapiro and Gebreselassie, 2007). This could be due to urban-rural differences regarding infant and child mortality, access to contraceptive methods and abortion, etc. Following these perspectives, we explore both the national level fertility trends and regional fertility differentials together with differentials within categories of socioeconomic characteristics.

### **3.2 Institutional model: Family planning service**

This model assumes that fertility stall in most African countries could be due to the loss of international and/or national focus on family planning. Indeed, declining global fertility is largely attributed to the success of family planning programs (Cutright and Kelly, 1981; Davanzo and Adamson 1998). However, low support for these programs could slow down the decline of fertility. For instance, some African countries reduced their family planning budget due to economic and/or political difficulties from 1990s. Also, most institutions including national governments are currently focused on HIV/AIDS programs than on family planning. Demand and Unmet need for contraceptives to limit family size, national budget for family planning services, number of organizations working in the area of family planning, as well as place of family planning in the media could be used as indicators to assess this hypothesis. In our analyses, we examine how unmet need for family planning is related to stalled fertility decline in Eastern African countries

### **3.3 Socioeconomic model**

Overall, socioeconomic approaches to fertility analyses assume that high fertility is an economically rational response to poverty (Caldwell 1982; Lipton 1999; Stecklov 1999). The benefits of having children outweigh their cost (e.g. old-age security, benefit from children's work, etc.). Also, poverty is associated with low access to healthcare including family planning, and higher infant and child mortality. For example, higher mortality among the poor tends to increase their fertility through replacement and insurance effects (Heer 1983). Likewise, a number of scholars have pointed to the impact of women's education, GDP per capita, urbanization, female labor force participation, household wealth index on fertility transition through access to contraceptive methods, access to health care service, decreasing infant and child mortality, as well as on age at first union and first childbearing (Birdsall and Griffin, 1988). From this point of view, stalling fertility decline in sub-Saharan Africa may reflect the faltering pace of socioeconomic conditions (Schoumaker 2004; Bongaarts 2002, 2006 and 2008; Garenne 2007; Shapiro and Gebreselassie 2007). From the 1990s, most African countries faced economic and political difficulties that led to budget cuts on social services and infrastructure, increased poverty, and inaccessibility to healthcare as well as increases in infant and under-five mortality, and reducing women access to education. The extent to which these factors contributed to the stall in fertility has not been fully examined. In our analyses, we examine the role of household wealth index, infant and under-five mortality (as proxy variables for socioeconomic status) played in the fertility stall in eastern Africa.

## 4 Data and Methods

We use data from the Demographic and Health Surveys for 4 East African countries that have had four Demographic and Health Surveys as described in table 1.

Table 1 – Countries and Year of Survey

Country	Year of survey (DHS)
Kenya	1989, 1993, 1998, 2003
Tanzania	1992, 1996, 1999, 2004
Uganda	1988, 1995, 2000/2001, 2007
Zimbabwe	1988, 1994, 1999, 2005/2006

The dates of the surveys vary, with the latest survey conducted in 2007 and the earliest in 1988. Our outcome indicator is total fertility rate (TFR). While previous studies have focused on national level analyses, we examine TFRs beyond the national level, focusing on specific subgroups defined by women's education, region of residence, and place of residence within each country.

To assess the roles of variables derived from demographic behavior, socioeconomic and institutional dynamic models, we examine TFR trends by age at first marriage, age at first birth, proportion of modern contraceptive use, trends in infant and child mortality, and trends in unmet needs for family planning.

## 5.0 Preliminary Results

### 5.1 National Fertility Trends

We identify three groups of countries in Eastern Africa with regards to fertility trends. The first group consist of countries that have experienced stalled fertility decline (Kenya and Tanzania). One country has a pre-transition level fertility (Uganda) and one other country has a continued decline in fertility (Zimbabwe). The national fertility trends are summarized in Table 2. Despite, the concern for stalled fertility decline in sub-Saharan Africa generally, evidence from Eastern Africa show that the magnitude of the stall in these countries is marginal.

Table 2 – TFR Trends by Countries

	DHS1 <sup>(1)</sup>	DHS2 <sup>(1)</sup>	DHS3 <sup>(1)</sup>	DHS4 <sup>(1)</sup>
Kenya	6.7	5.4	4.7	4.9
Tanzania	6.2	5.8	5.6	5.7
Uganda	7.4	6.9	6.9	6.7
Zimbabwe	5.4	4.3	4.0	3.8

<sup>(1)</sup> Dates of survey are reported in table 1

Kenya's TFR increased by 4.3% and Tanzania has a less than 2% change in TFR during the period of the stall. Fertility trends in Uganda and Zimbabwe - show no stall in fertility decline at national levels. However, Uganda's TFR remains at a pre-transition level of 6.7 births per woman.

## **5.2 Dynamics of Fertility Trends within Countries**

Our analysis show that within countries experiencing stalled fertility at the national level, fertility decline continued among the most educated women and in some regions of the countries. In Kenya for instance, despite national stall in fertility decline, fertility continues to decline among the most educated women and women living in the Central and Coastal regions. In Tanzania fertility decline stalled nationally except among the most educated women and the South region of the country.

In Uganda, fertility declined nationally but we observe stall in fertility decline for the most educated women, those living in Eastern region and urban areas of the country. In Zimbabwe, fertility declined nationally but the decline is stalled among women with no education. Stalled fertility decline is also observed for Matabele North, Midlands and Masvingo regions (see appendix tables for more details).

## **5.3 Common and peculiar factors associated with stalled fertility decline**

- The most common factor associated with fertility trends in Eastern Africa is contraceptive use.
  - ❖ In Kenya, fertility decline is associated with increase in contraceptive use.
  - ❖ In Uganda, decrease in contraceptive use in urban areas and among the most educated corresponds with the stall among the most educated and women resident in urban areas.
  - ❖ In Zimbabwe, decrease in contraceptive use among women with no education, women living in Matabeleland North and Masvingo regions is consistent with the stall in fertility decline among women in those same sub-categories.
- In general decrease in infant and under-five mortality is associated with decrease in fertility.
- But increase in infant and under-five mortality is associated with stalled fertility decline only in Kenya.
- The effect of other variables –Unmet need for family planning and age at first birth and age first marriage are mixed and we are continuing to explore those relationships.

#### **5.4 Potential opportunities for addressing stalled fertility in the region.**

- Our analysis underscores the need to look beyond national level fertility indicators and particular attention on complex contextual nuances and differentials within different countries.
- Developing policies and programs that focus on specific groups on issues relating to fertility behavior.
- Reinvigorating campaigns on contraceptive use and engaging policy makers with evidence to increase budgetary allocation towards increasing CPR.
- Directing attention on programs to reduce infant and under-five mortality which drives the stall in fertility decline in some countries such as Kenya.

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## Appendix Tables1 - 4

Table 1 Kenya

	1989	1993	1998	2003	Fertility trend
<b>Highest educational level</b>					
No education	7.5	6	5.8	6.7	Stall
Primary	6.9	5.7	5	5.5	Stall
Secondary or higher	4.9	4	3.5	3.2	Decline
<b>Region</b>					
Nairobi	4.2	3.4	2.6	2.7	Stall
Central	6	3.9	3.7	3.4	Decline
Coast	5.4	5.3	5	4.9	Decline
Eastern	7.2	5.9	4.7	5.1	Stall
Nyanza	6.9	5.8	5	5.6	Stall
Rift Valley	7	5.7	5.3	5.8	Stall
Western	8.1	6.4	5.6	5.8	Stall
<b>Residence</b>					
Urban	4.5	3.4	3.1	3.3	Stall
Rural	7.1	5.8	5.2	5.4	Stall
<b>Total</b>	<b>6.7</b>	<b>5.4</b>	<b>4.7</b>	<b>4.9</b>	<b>Stall</b>

Table 2 Tanzania

	1992	1996	1999	2004	Fertility trend
<b>Highest educational level</b>					
No education	6.5	6.4	6.5	6.9	Stall
Primary	6.3	5.6	5.2	5.6	Stall
Secondary or higher	4.2	3.2	3.5	3.3	Decline <sup>(1)</sup>
<b>Region</b>					
Coastal	5.7	4.9	4.3	4.0	Decrease
Northern Highlands	6.0	5.7	5.1	4.9	Decrease
Lake	6.9	7.0	7.1	7.0	Decline <sup>(1)</sup>
Central	7.1	6.1	5.4	6.1	Stall
Southern Highlands	6.3	5.4	5.2	5.9	Stall
South	5.1	4.9	5.0	4.8	Decline <sup>(1)</sup>
<b>Residence</b>					
Urban	5.1	4.1	3.2	3.6	Stall
Rural	6.6	6.3	6.5	6.5	Stall
<b>Total</b>	<b>6.2</b>	<b>5.8</b>	<b>5.6</b>	<b>5.7</b>	<b>Stall</b>

<sup>(1)</sup> Fertility decline after increase period

Table 3 Uganda

	1988	1995	2000/ 2001	2007	Fertility trend
<b>Highest educational level</b>					
No education	7.9	7	7.8	7.7	Decrease
Primary	7.2	7.1	7.3	7.2	Decrease
Secondary or higher	5.6	5.2	3.9	4.4	Stall
<b>Region</b>					
Central	6.9	6.3	5.7	5.2	Decrease
Eastern	7.5	7.4	7.4	7.6	Stall
Northern	7.4	6.8	7.9	7.4	Decline <sup>(1)</sup>
Western	7.8	7	6.9	6.8	Decline
<b>Residence</b>					
Urban	5.7	5	4	4.4	Stall
Rural	7.6	7.2	7.4	7.1	Decline <sup>(1)</sup>
<b>Total</b>	<b>7.4</b>	<b>6.9</b>	<b>6.9</b>	<b>6.7</b>	Decline

<sup>(1)</sup> Fertility decline after increase period

Table 4 Zimbabwe

	1988	1994	1999	2005/ 2006	
<b>Highest educational level</b>					
No education	7.2	5.2	5.2	5.8	Stall
Primary	5.7	4.6	4.5	4.5	Decline
Secondary or higher	3.7	3.3	3.3	3.2	Decline
<b>Region</b>					
Manicaland	5.9	4.5	4.7	4.2	Decline <sup>(1)</sup>
Mashonaland Central	5.2	4.6	4.9	4.6	Decline
Mashonaland East	5.8	4.8	4.2	3.7	Decline
Mashonaland West	5.7	4.8	4.1	3.7	Decline
Matabeleland North	6.6	5.8	4.1	4.2	Stall
Matabeleland South	5.5	5	4.8	4	Decline
Midlands	5.8	4.5	4	4.2	Stall
Masvingo	6.4	4.6	3.9	4.9	Stall
Harare Chitungwiza	3.9	2.8	3	2.5	Decline <sup>(1)</sup>
Bulawayo	3.5	3.2	3	2.3	Decline
<b>Residence</b>					
Urban	3.8	3.1	3	2.6	Decline
Rural	6.2	4.9	4.6	4.6	Decline
<b>Total</b>	<b>5.4</b>	<b>4.3</b>	<b>4</b>	<b>3.8</b>	Decline

<sup>(1)</sup> Fertility decline after increase period