



The Determinants of Recent Trends in Fertility in Sub-Saharan Africa: A Workshop Summary

DETAILS

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Recent Fertility Trends in Sub-Saharan Africa

WORKSHOP SUMMARY

Alexandra Beatty, Rapporteur

Committee on Population

Division of Behavioral and Social Sciences and Education

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Acknowledgments

This workshop report summarizes the discussions and presentations that took place at a workshop on the determinants of recent trends in fertility in sub-Saharan Africa. The workshop was sponsored by the Bill & Melinda Gates Foundation, the William and Flora Hewlett Foundation, and the David and Lucile Packard Foundation. It was convened by the Committee on Population, Division of Behavioral and Social Sciences and Education of the National Academies of Sciences, Engineering, and Medicine.

We thank the experts on the science of demography and on population trends in Africa who served on the steering committee for this workshop. They provided invaluable guidance in developing the workshop, securing expert presentations, conducting the workshop, and serving as session chairs and discussants. Although the steering committee played a central role in designing and conducting the workshop, it did not actively participate in the writing of this workshop summary.

The presentations in the workshop were organized into five topical sessions, each designed to shed light on important determinants, consequences, effects, issues, and opportunities attending the trends in fertility in sub-Saharan Africa. In all, 23 presenters contributed presentations and led discussions during the two-day workshop held in Washington, DC, June 15-16, 2015. The presentations provoked an extraordinarily rich discussion among the participants, and this summary attempts to capture both the formal presentations and the ensuing discussion.

The excellent work of the staff of the Committee on Population and the Academies in developing, organizing, and supporting the workshop is acknowledged. The director of the Committee on Population, Thomas J. Plewes, and Mary Ghitelman, the project assistant, devoted long hours to ensuring a successful event. Alexandra Beatty served as rapporteur, taking on the challenging task of distilling the gist of the presentations and the essence of the discussions in this relatively brief report.

This workshop summary has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the Report Review Committee of the Academies. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published summary as sound as possible and to ensure that the summary meets institutional standards for objectivity, evidence, and responsiveness to the charge. The review comments and draft manuscript remain confidential to protect the integrity of the process. We wish to thank the following individuals for their review of this workshop report: John Bongaarts, vice president and distinguished scholar, The Population Council, New York, and David Lam, Institute for Social Research and Department of Economics, University of Michigan.

Although the reviewers listed above have provided many constructive comments and suggestions, they did not see the final draft of the workshop summary before its release. The review of this summary was overseen by Jere R. Behrman, Department of Economics, University of Pennsylvania. Appointed by the institution, he was responsible for making certain that an independent examination of this summary was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this summary rests entirely with the author and the institution.

Contents

1	INTRODUCTION	1
2	GENERAL FERTILITY TRENDS	5
	Africa's Unique Fertility Transition, 5	
	The Consequences of Fertility Trends, 9	
	Discussion, 18	
3	TRENDS IN REPRODUCTIVE BEHAVIOR	21
	Fertility Desires, 21	
	Childbearing Patterns, 23	
	Trends in Age at Marriage and Fertility, 26	
	The Impact of Socioeconomic Trends, 27	
	Focus on Kenya and Ghana, 31	
	Discussion, 33	
4	THE EFFECTS OF CONTRACEPTIVE PRACTICE	35
	Impact of Contraception Use and Abortion, 35	
	Role of Traditional Family Planning Methods, 37	
	Contraceptive Preferences and Practices, 40	
	Family Planning Among the Urban Poor, 45	
	Discussion, 47	

x

CONTENTS

5	POLICY OPTIONS AND OPPORTUNITIES	49
	Politics of Family Planning Policies and Programs, 49	
	Donor Perspectives, 51	
	Scientific Perspectives, 59	
	REFERENCES	67
	APPENDIXES	
A	Workshop Agenda	69
B	Workshop Participants List	73
C	Biographical Sketches of Steering Committee Members	75

1

Introduction

Fertility rates in many sub-Saharan African countries are high: the total fertility rate for the region is estimated to be 5.1 births per woman, and rates that had begun to decline in some countries in the region have stalled (Bongaarts and Casterline, 2013).¹ By comparison, fertility rates in developing nations in Asia and Latin America declined more rapidly during the 1970s and are currently 2.5 and 2.2 births per woman, respectively. High rates of fertility in the sub-Saharan African countries are likely to contribute to continued rapid population growth: the United Nations projects² that the region's population will increase by 1.2 billion by 2050, the highest growth among the regions for which there are projections.³

Fertility rates and population growth may influence economic development. The marked declines in fertility seen in some developing nations

¹The term "sub-Saharan Africa" is generally used to refer to the African countries that are situated south of the Sahara desert. This group of more than 40 countries generally excludes only the continent's six northernmost countries (see <http://data.worldbank.org/region/SSA> [August 2015] for one list of countries usually included in the sub-Saharan group).

²Since the workshop, held June 15-16, 2015, the United Nations has issued updated population estimates and projections. The United Nations data were used in many of the papers and presentations at the workshop, and since this summary reflects the proceedings of the workshop, some of the data may not be the most up to date available. For updated data, see United Nations, Department of Economic and Social Affairs, Population Division (2015). *World Population Prospects: The 2015 Revision, Key Findings and Advance Tables* at http://esa.un.org/unpd/wpp/publications/files/key_findings_wpp_2015.pdf [December 2015].

³See <http://www.prb.org/Publications/Articles/2013/un-world-projections.aspx> [August 2015].

have been accompanied by slowing population growth. The slower population growth may, in turn, provide a window of opportunity for rapid economic growth. However, to the extent that this relationship exists, the window has not yet opened for many sub-Saharan African nations because fertility rates have not declined as rapidly as those of other nations.

Donors, researchers, and policy makers have a strong interest in better understanding the factors that may explain the slow pace of fertility decline in this region, and in improving family planning in sub-Saharan Africa. The Committee on Population, with the support of the Bill & Melinda Gates Foundation, the William and Flora Hewlett Foundation, and the David and Lucile Packard Foundation, formed a steering committee to plan a workshop to explore fertility trends and the factors that have influenced them, which was held in June 2015.

The workshop committee was asked to explore history and trends related to fertility, proximate determinants and other influences, the status and impact of family planning programs, and prospects for further reducing fertility rates; see Box 1-1 for the committee's charge. The committee

BOX 1-1

Statement of Task

An ad hoc committee will plan and conduct a workshop to explore the determinants of the slow fertility transition in sub-Saharan Africa. The workshop participants (including African population specialists) will discuss various commissioned papers and presentations with topics that include

- levels, trends, and differentials in fertility in sub-Saharan Africa;
- proximate determinants of fertility (i.e., use of contraception, marriage and cohabitation, abstinence, abortion, and postpartum infecundability);
- reproductive preferences and their implementation (i.e., unmet need, demand for contraception, and desired family size);
- socioeconomic trends and their impact on fertility;
- status and impact of family planning programs; and
- prospects for faster declines in fertility and ways they might be achieved.

The goal of the proposed workshop is to provide explanations for past trends, including the importance of country-specific factors and the public policies and programs that influence fertility, and to assess prospects of fertility change in the region. An individually authored summary of the presentations and discussions at the workshop will be prepared by a designated rapporteur and issued in accordance with institutional policies and procedures. A scholarly journal may be approached to publish selected commissioned papers following the workshop.

commissioned experts to prepare papers and presentations and to participate in formal discussion of those papers. The presenters and discussion leaders represented experts in demographic trends, African population issues, family planning, and African health issues. The presenters also included representatives of funding organizations, who discussed current assessments of the determinants of fertility and prospects for the future and provided analysis of policy options and their implications.

This report has been prepared by the workshop rapporteur as a factual summary of what occurred at the workshop. It is designed to be of use to population specialists; policy makers; public health officials; and foundations, nongovernmental organizations, and government agencies with program, funding, and public policy responsibilities. The planning committee's role was limited to planning and convening the workshop. The views contained in the report are those of individual workshop participants and do not necessarily represent the views of all workshop participants, the planning committee, or the National Academies of Sciences, Engineering, and Medicine.

2

General Fertility Trends

The workshop began with a review of fertility trends in the sub-Saharan region and their consequences. The presentations highlighted the uniqueness of the African fertility transitions, the variability of the trends between the countries in the region, and the possible consequences of these trends for the future.

AFRICA'S UNIQUE FERTILITY TRANSITION

John Bongaarts of the Population Council and Ann Biddlecom of the Population Division of the United Nations discussed factors that make the fertility transitions in African countries unique. Bongaarts provided context for understanding how fertility rates in Africa have followed patterns different from those observed in other countries, and Biddlecom provided additional perspective on these trends by examining differences within the sub-Saharan countries and considering possible scenarios for the future.

Bongaarts began by noting that fertility rates in the United States and many European nations declined significantly in the 19th and early 20th centuries, in some cases from as many as 8 births per woman to below 2. This trend was an important factor in their economic growth, and this set of developments is referred to as a fertility transition (Guinanne, 2011). For developing nations in Asia and Latin America, Bongaarts noted, this transition began later, in the mid-1970s. In sub-Saharan Africa, it did not begin until the 1990s and proceeded more slowly than in other develop-

ing nations. Currently, Bongaarts noted, the total fertility rate (TFR) is just above 5 births per woman for the African region, as opposed to under 3 elsewhere.

Bongaarts used four development indicators to help explain fertility trends in sub-Saharan Africa between 1970 and 2010: gross domestic product (GDP) per capita, percentage of the population attaining at least a primary education, life expectancy at birth, and percentage of the population living in urban areas. As the graphs in Figure 2-1 show, development has proceeded in all regions, but the African nations were at lower levels than the other countries for each of these variables as they began their transitions, and are at significantly lower levels today.

Bongaarts also noted that the pace of the transition in sub-Saharan nations has been slower than the pace in other developing countries, and

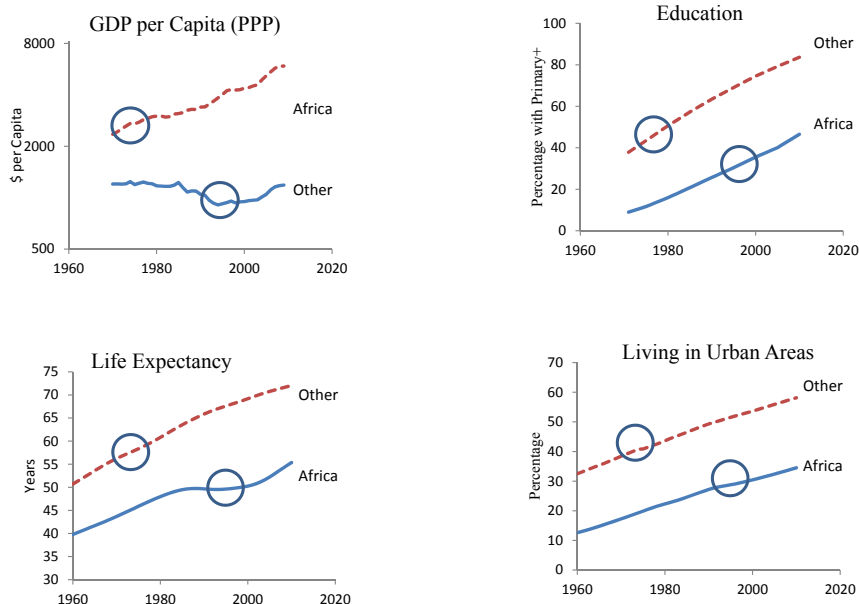


FIGURE 2-1 Comparison of African and other developing nations on four variables.

NOTES: PPP indicates GDP converted to show purchasing power parity rates. LDCs are least developed countries. Circles indicate timing of onset of fertility transition.

SOURCE: Bongaarts (2015).

that the pace of progress in each of the other four variables has also been slower.

The comparatively high level of fertility at a given level of development in African nations has been called the “Africa Effect,” Bongaarts noted, as researchers have sought explanations for the difference between regions in their fertility response to development.¹ He noted that because the fertility transition in the region occurred later in time (though early in relation to other economic developments in the region) and at a slow pace, the overall Africa Effect for fertility is substantial. He also indicated that this is partly because of the relatively slow pace of development there compared with that of other regions at the time of their transition onset. Characteristics of this region may help explain the differences, he added, as theories of African exceptionalism have suggested.

Socioeconomic development, he explained, raises the cost and decreases the benefits of having children and it reduces mortality, especially among children. These changes in turn often lead parents to want smaller families. In many African countries, both economic and cultural traditions have strongly favored larger family sizes. Where family planning programs have been weak or nonexistent, there has been little encouragement for increased contraceptive use. Bongaarts noted that there has been variation in these factors within the region and that family planning investments in several countries have been successful. He also noted that a full accounting for the Africa Effect would require a detailed examination of the history of colonialism and other historical developments.

Biddlecom noted that trends across the African continent vary. The fertility transitions took place at varying times across the region, and both the total fertility levels at the start of the transitions and the pace at which the transitions progressed also varied. Data calculated even for sub-regions may mask significant differences from country to country, she added; Figure 2-2 shows the diversity in rates across African countries with the varying rates color coded to indicate the range of rates.

Biddlecom and her colleagues have analyzed detailed data for the sub-regions and individual countries to search for patterns. Their analysis included 130 countries and covered approximately 60 years. They identified nine distinct clusters of countries that followed similar trajectories in their fertility declines and ultimately reached a level of 3 births or fewer per woman; these trajectories are shown in graph form in Figure 2-3.

Using these nine clusters, Biddlecom explained, it was possible to develop a range of fertility rate projections for individual countries, such

¹See <http://news.harvard.edu/gazette/story/2007/06/researchers-analyze-%E2%80%9898africa-effect%E2%80%99-the-slow-growth-of-some-economies/> [July 2015] for a general discussion of the Africa Effect.

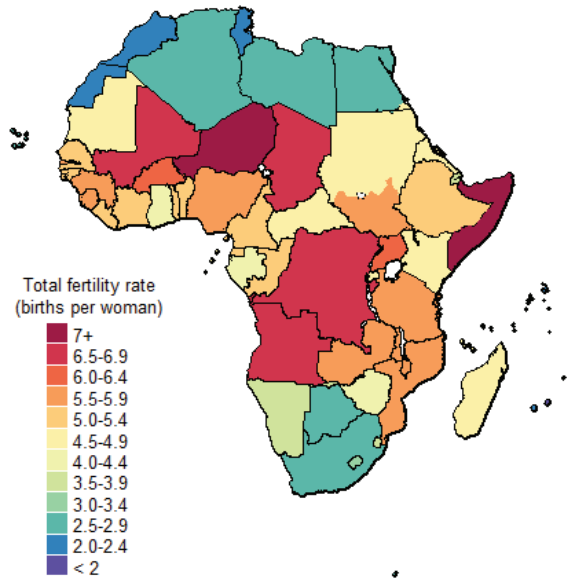


FIGURE 2-2 Diversity in total fertility across African nations, 2005 to 2010.
 SOURCE: Biddlecom (2015).

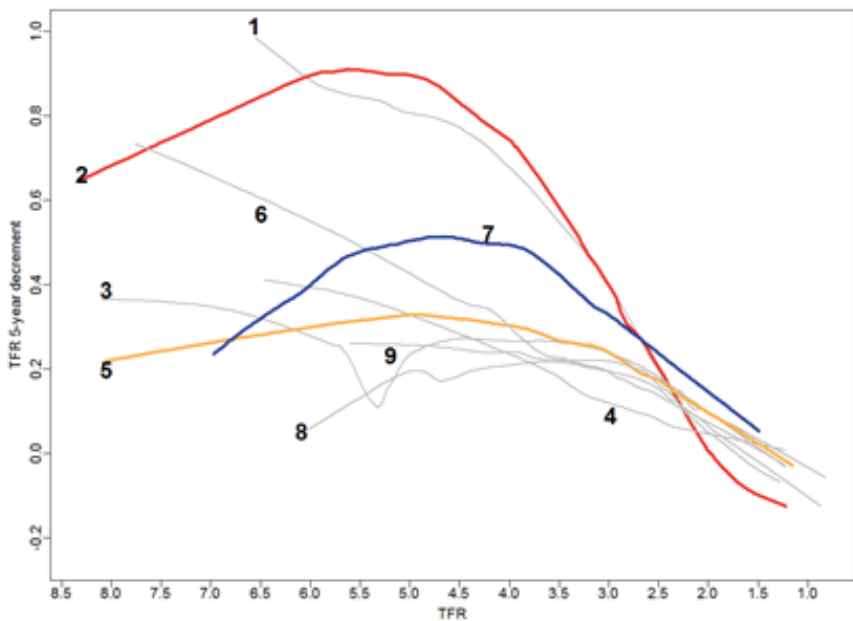


FIGURE 2-3 Nine distinct fertility decline patterns.
 SOURCE: Biddlecom (2015).

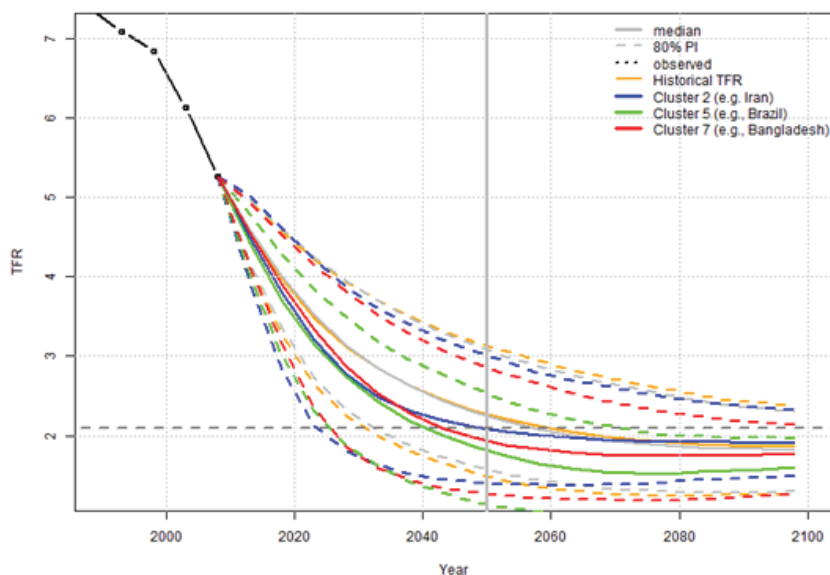


FIGURE 2-4 Range of fertility decline projections for Ethiopia.
SOURCE: Biddlecom (2015).

as those for Ethiopia shown in Figure 2-4. The projections for individual countries, in turn, allowed Biddlecom and her colleagues to develop a range of population projections, also based on possible scenarios for regions of Africa; the range of projections is shown in Figure 2-5.

Biddlecom closed with the observation that this is a “time of uncertainty” in sub-Saharan Africa because total fertility is high across the region despite considerable diversity within it. New data expected after the workshop would make it possible to update the scenarios she presented and look for changing patterns. Biddlecom noted that the modeling does not take into consideration socioeconomic determinants that may influence changes in fertility rates and that it is important to remember the role that policy choices may play in the outcomes. Moreover, she added, data collection in many African countries is problematic, which limits the value of the data on which the models are based.

THE CONSEQUENCES OF FERTILITY TRENDS

The discussion turned next to an exploration of the ways fertility and population trends may influence economic development in sub-Saharan Africa. John Cleland of the London School of Hygiene and Tropical

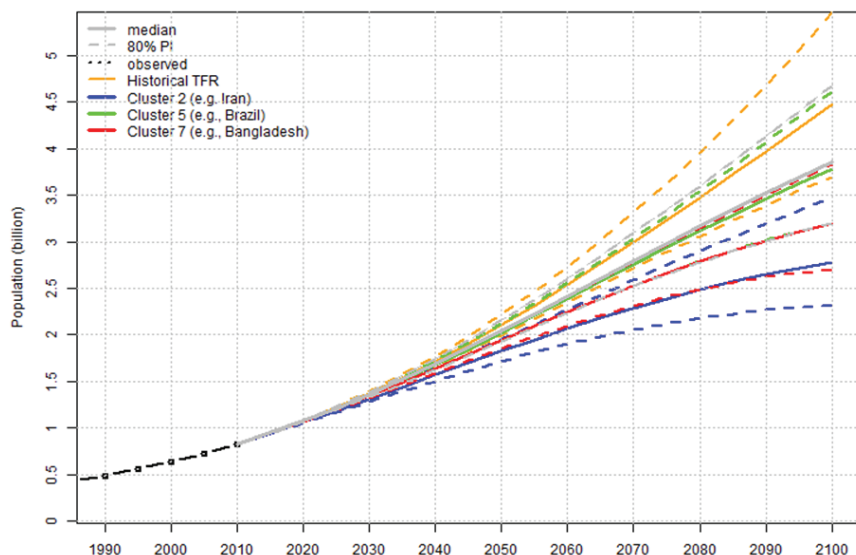


FIGURE 2-5 Range of population projections for sub-Saharan Africa.
SOURCE: Biddlecom (2015).

Medicine and David Lam of the Population Studies Center, University of Michigan discussed challenges that sub-Saharan countries will face in coming decades and the possibility that demographic changes will also bring opportunity. David Canning of the School of Public Health at Harvard University described an approach to modeling the potential economic effects of reducing family size.

Challenges and Opportunities

Cleland began with reference to a remark by a former chief economist at the World Bank, Francois Bourguignon, that “we really do not know what causes economic growth.” He did so to emphasize that he would offer not predictions for what will happen but a set of challenges that need to be overcome for sub-Saharan African countries to experience rapid economic growth.

His first caution was against undue optimism about the demographic dividend—that is, the economic benefit that can come after a fertility transition, when a country reduces its fertility rate and the wage-earning component of its population becomes larger in comparison to the nonwork-

ing, dependent component (often referred to as a change in age structure). When this development coincides with other favorable circumstances, such as widespread access to jobs, education, and adequate nutrition and health care, a country can achieve significant gains in productivity as a result of this change in the age structure. Many Asian countries, in particular, benefited from this set of circumstances to achieve substantial economic gains.

In the sub-Saharan countries, however, Cleland explained, demographic projections indicate that there is likely to be growth in all age bands, so the changes in the age structure in many are likely to be quite modest. Projections also indicate that growth in the urban population will be dramatically larger than growth in rural areas. Thus, not only are the demographic shifts likely to be modest, he explained, but also the boundary between workers and dependents is likely to become more blurred as rates of education and urbanization increase. The percentages of youth ages 15 to 19 who are working will likely decline, for example, diluting some of the benefit of changes in dependency ratios.

Finally, Cleland added, reproduction is much less likely to interfere with wage earning in African nations than elsewhere, because women's employment is often more compatible with childrearing, so a decline in reproduction will have less benefit in this region. Figure 2-6 shows that the projected decline in the dependency ratio for Africa is very slow and modest compared with those for other regions that experienced the demographic dividend.²

Another challenge for sub-Saharan African countries, Cleland went on, is that the region's school-age population is growing by nearly 9 million per year. To meet the goal of universal primary schooling, the region will need to increase its teacher workforce from 3.2 million in 2011 to 5.3 million by 2030. A further increase from 1.0 to 3.5 million will be needed in the ranks of secondary teachers. Cleland suggested that chronic teacher shortages are likely to persist for decades in countries where academic achievement is already low, and it may prove difficult to provide or sustain high-quality educational opportunities in those circumstances. Similar shortages are likely in the medical workforce, he added. Of 12 countries in the region, only 4 are on track to increase their numbers of doctors, nurses, and midwives, and even in those countries the projected numbers are not sufficient to match projected population increases.

The region's rapid urbanization is taking place without the industrialization that accompanied it in many other developing regions, Cleland pointed out. While the urban population is doubling every 20 years,

²Broadly defined, the dependency ratio relates the number of children (0-14 years old) and older persons (65 years or over) to the working-age population (15-64 years old).

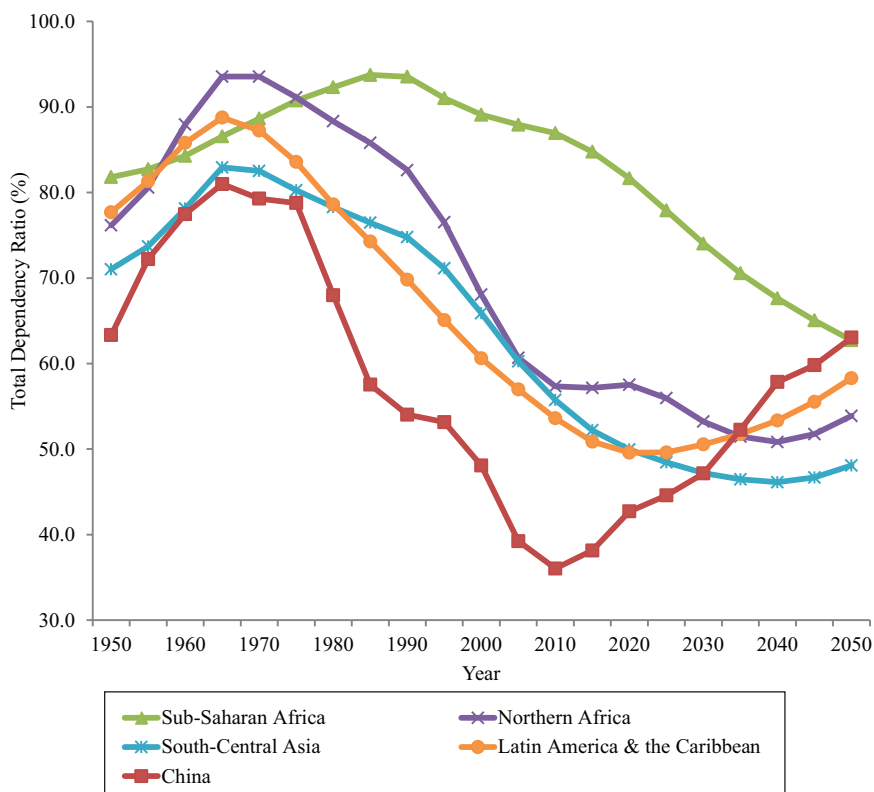


FIGURE 2-6 Projected total dependency ratio, Africa and other regions, 1950-2050. SOURCE: United Nations (2014).

62 percent of the urban population lives in slum conditions, as compared with 35 percent in Asian countries. Few countries in the region have large-scale programs to provide low-cost housing, and many have ambiguous arrangements for urban land ownership and weak municipal governance structures. The population pressure on the housing infrastructure is likely to be relentless, in Cleland's view, and he suggested that this circumstance might give rise to increasing slum populations, housing insecurity, violence, and threats to social cohesion.

Sub-Saharan Africa is also already the region of the world with the largest prevalence of undernourishment, Cleland explained, with 32.7 percent of the region's population having had insufficient nutrition in the years 2011 to 2013. To meet the needs of a growing population, the region will need to double its food availability over the next 35 years, he said.

This will be difficult, Cleland explained. Agriculture accounts for 64 percent of employment in the region, but 80 percent of farms are less than 2 hectares in size and ownership rights are often insecure. Yields are not improving, and 95 percent of crops are dependent on rain, as opposed to irrigation. Seventy percent of arable soil is degraded, and the region currently imports 31 percent of its cereals, at a cost of \$30 to 50 billion annually. He noted the possibility of ameliorating some of these problems, but added that many countries have reached the limits of their capacity. The ratio of the agricultural population to arable land will likely increase, he explained, which will in turn lead to overexploitation of fragile land and further soil degradation. As farms become smaller, the possibilities for innovation and the production of surplus will decline. The insecurity of many farmers' tenure on their land is a further disincentive to invest in long-term improvements. The biggest threat, however, comes from the erratic rainfall patterns and increases in temperatures that have already begun as a result of global climate change.

Another issue Cleland pointed out is that as the region's labor force increases by a projected 32 million annually, the pressure on employment will intensify. He said that, according to projections, over the next 10 years only one in four young people will locate a wage job; the other three-fourths will need to find employment in the informal economy. It is possible that African countries could expand light manufacturing operations and begin to reap some of the rewards of the globalizing economy. Unfortunately, however, Cleland noted, the labor force in the Asian countries with which African countries would be competing is also expected to continue growing. Because worldwide manufacturing jobs are not increasing, African countries' expanding labor forces are not a significant advantage in this arena, in his view.

Cleland noted the significant variability in projected growth for individual countries in the region, as shown in Figure 2-7, and closed with the observation that it is likely that socioeconomic trends in these countries will continue to diverge. Some, he suggested, are likely to hit Malthusian limits, where growing populations outstrip the nation's capacity to feed, house, and employ them. Some will remain or become failed states. These developments are likely to generate migration on a very large scale across the continent, he added, as people seek refuge or economic opportunity, and he wondered whether this could happen without causing significant civil strife.

Another View of Challenges and Opportunities

David Lam of the Population Studies Center at the University of Michigan agreed with Cleland that the expected continued population

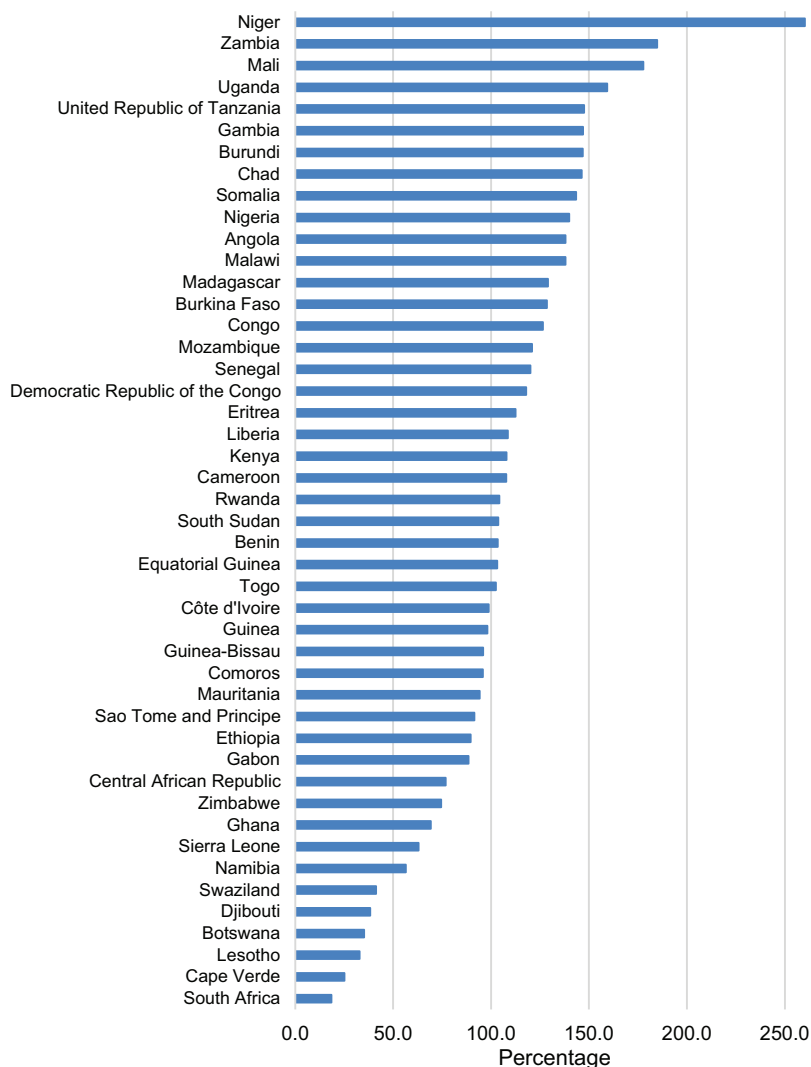


FIGURE 2-7 Projected population percentage increases for sub-Saharan African nations, 2015 to 2050.

SOURCE: United Nations (2014).

growth in the region, particularly among youth, will create both challenges and opportunities. Population growth in sub-Saharan Africa is projected to remain high compared with rates in other regions, Lam explained; see Figure 2-8. The TFR, currently at 4.8 births per woman, is expected to decline to 3.0 births by 2050, but will also be higher than

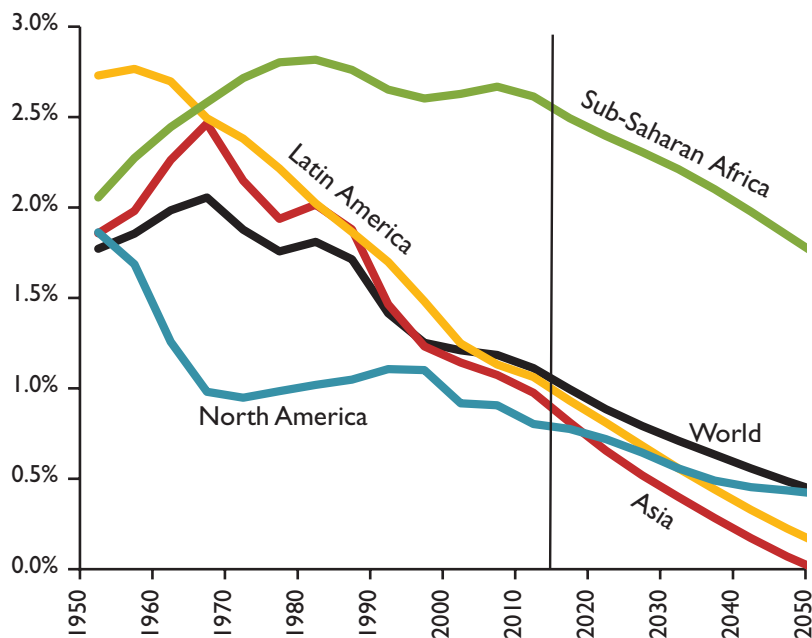


FIGURE 2-8 Annual population growth rates, actual and projected, 1950-2050. SOURCE: United Nations (2014).

those in other regions: rates in south, east, and Southeast Asia and Latin America are all on track to reach or remain at a rate below 2 births per woman by that year. Thus the proportion of the population aged 0 to 14 will also remain highest in sub-Saharan Africa. The percentages of the population in older working-age groups are also likely to remain large, Lam added. Figure 2-9 shows the percentage of working-age (15 to 64) populations who were age 24 or under, for years 1975 and 2015, in 18 countries.

The dependency ratio for sub-Saharan Africa is high, at 0.85, compared with that for the world (0.52) and for Latin America (0.51) and Asia (0.47), Lam noted. However, the ratio for the world is increasing, he explained—the elderly population will nearly double by 2050, which will offset the decline in the percentages of children in populations where fertility rates are low. Sub-Saharan Africa is the only region for which the dependency ratio is projected to decline during that same period; by 2050 it will be lower than those for Europe and North America, and only slightly above that of Latin America.

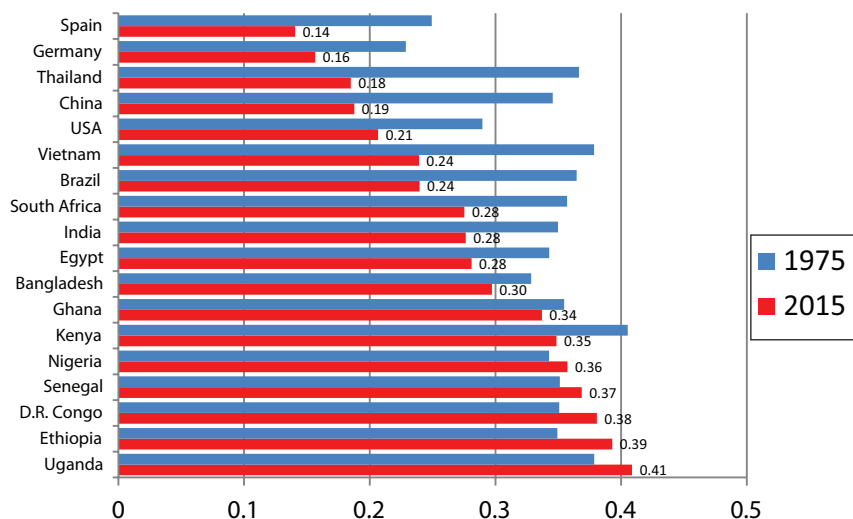


FIGURE 2-9 Percentages of working age (15 to 64) populations in 18 countries who were age 24 or under, for 1975 and 2015.

SOURCE: Lam (2015).

The working-age population in sub-Saharan Africa is expected to have a net increase of 14 million in 2015, and increases of 20 and 26 million, respectively, by 2030 and 2050, Lam added. In some regions, particularly less economically developed ones, Lam explained, bulges in the youth population have meant high unemployment and social unrest. The primary challenge posed by population growth in the sub-Saharan region, in Lam's view, is that the region will need to gain 1.1 million jobs each month in order to keep employment rates constant. If current projections are accurate, then the need will be even greater in the future: 1.6 million per month by 2030 and more than 2.0 million by 2050. However, because the growth rate in the working-age population will remain high, dependency ratios will fall even without more rapid fertility declines. Overall, Lam and his colleagues concluded that population shifts are likely to have mixed effects on economic development, and other determinants are likely to have a greater influence on outcomes.

Modeling the Effects of Demographic Change on Economic Growth

David Canning presented a simulation model of the possible effect of reduction in family size on economic growth in the region, noting that approaches to understanding the role of declining fertility in accelerating

economic development have evolved. There was little evidence, in his opinion, to support an older view that population growth slows economic growth. The newer view, that fertility decline brings a demographic dividend because of changes in the age structure, an increase in the female labor supply, and changing views of the investment in children, he suggested, can be tested empirically in several ways.

One macroeconomic approach is to use growth regressions to project per capita income based on changing age structures. This approach, he explained, can separate the effects of fertility from those of mortality or life expectancy. However, sample sizes tend to be small for this type of analysis, Canning added, so it is difficult to establish causality using it. Applying regression analysis on a micro level, using household data, can help to identify the effects of demographic changes on children and families, he explained, but may miss macro-level influences, such as the effects of public education or the ratio of labor to capital.

A third approach is to develop a macro-level simulation of the economy to investigate the effects of policy changes. This approach, Canning explained, makes it possible to see causal linkages and to include the results of micro-level studies in developing parameters, though its complexity can make results difficult to interpret and it can be computationally intensive. Canning and his colleagues used this approach to compare a baseline fertility scenario to one in which family planning policies are introduced to reduce fertility. The basic model is shown in Figure 2-10.

Canning and his colleagues adapted the model first presented by Ashraf, Weil, and Wilde (2011) by including five additional factors: endogenous savings rate, child health, effects of manufacturing and agriculture, wage distortions, and the effects of education of females on fertility. They applied the model to the case of Nigeria using data from a variety of sources covering such factors as land and natural resources, population characteristics, labor force participation and labor by sector, education and height, age-specific fertility rates, and savings. They examined three scenarios: fertility decreases resulting in projected low (1.7 children per woman), medium (2.2), and high (2.7) fertility levels by 2100. The resulting possible effects on population and per-capita income are dramatic, with the difference in the Nigerian population in 2100 between the highest and lowest scenarios amounting to some 600 million people, and the projected difference in per capita income amounting to more than US \$10,000 for the same time period.

Canning and his colleagues hope to add further refinements to the model, but they conclude that it highlights the potentially large effects of fertility rates on economic outcomes: more than double the effects shown in previous analyses.

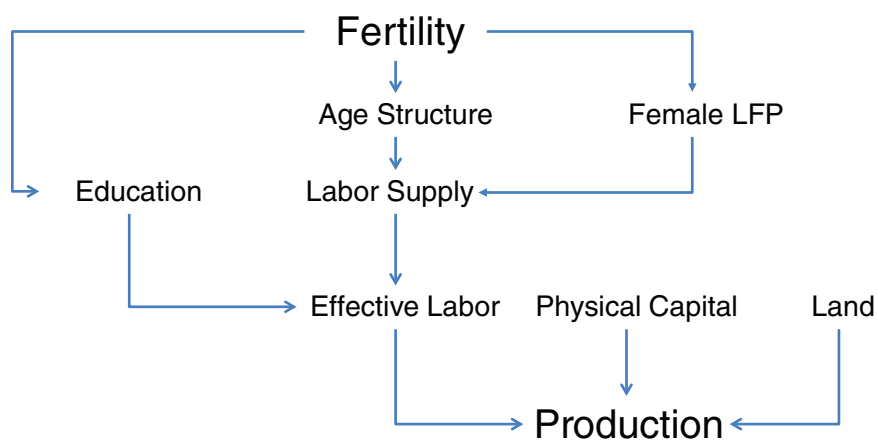


FIGURE 2-10 Simulation model for assessing fertility reduction scenarios.

NOTE: LFP = labor force participation.

SOURCE: Canning (2015).

DISCUSSION

Workshop participants discussed a variety of comments and questions about the presentations in the first session, and Jacob Adetunji of the U.S. Agency for International Development and Jean-François Kobiané of the University of Ouagadougou offered their comments.

With respect to the session on trends in fertility rates, many participants focused on the Africa Effect. One participant noted that more research is needed on the reasons why many African countries have such high fertility rates, compared with other regions. Another expressed a wish for more expert insight into the variation across the nations of the region, perhaps by means of a model that takes into account the policy choices that individual countries have made. Presenters also noted that collecting data at the national and sub-national levels is challenging, but that as improved data become available, these will be valuable avenues to pursue.

Adetunji noted that the portrait of trends in fertility decline and population growth should remind the group that the question of whether Africa has too many people is too broad because, “it depends on where you are looking.” Population growth is very different from country to country, he added, but it is nevertheless true that the implications of population projections for the region are “enormous.” Family planning programs have an effect, he added, as Rwanda, Malawi, and Ethiopia demonstrate. So, he concluded, “We have a clue about what can be done to help Africa manage its population growth.”

Regarding the session on consequences of fertility trends, presenters added a variety of points to the discussion. One noted that the sub-Saharan region has seen strong performance in the service and telecommunications sectors over the past 15 years, and suggested that it may not be necessary for the region to experience strong growth in manufacturing to prosper more generally. Cleland acknowledged that many countries have indeed experienced such growth, but noted that in most cases this is the result of changes in governance designed to improve the welfare of the population—another reason that focusing on the variation across countries would be valuable.

Another participant noted that the high rates of migration that Cleland foresees may be easier for the region to manage than Cleland fears, because there already is considerable internal migration, and structures have evolved to handle it. Several agreed that data limitations mean that forecasts, while useful, may be misleading. Participants identified some important factors that were not considered in the models, particularly political and other developments, such as changes in female labor force participation, which might significantly alter countries' trajectories. One suggested that Latin American countries might have more similarities with the African region than Southeast Asian countries do and therefore offer more useful comparisons. Finally, a few participants highlighted the importance of equity issues: one observed, "even if we double GDP, if the wealth is concentrated in a few hands it will not change anything."

Kobiané noted that though the three discussions of the possible consequences of fertility trends offered some differing views, they made clear that the effects of fertility decline are not systematic. They made clear, he observed, that the way fertility interacts with other development issues, such as education, governance, and leadership, in each country will influence the outcomes for population growth and economic development. He agreed with earlier comments that greater attention to the collection of comparable data across the region is needed.

3

Trends in Reproductive Behavior

Decisions about family size and contraceptive use are at the heart of fertility trends, and numerous factors influence these decisions. John Casterline of the Institute for Population Research at Ohio State University discussed the desire to have large families that has been characteristic in the sub-Saharan region. Ian Timaeus of the London School of Hygiene and Tropical Health discussed childbearing patterns and the importance of birth spacing and postponement. Véronique Hertrich of the Institut National d'Études Démographiques (INED) provided an overview of trends in age at marriage and fertility. Parfait Eloundou-Enyegue of Cornell University discussed socioeconomic trends that influence fertility. Maggwa Baker Ndugga of the Bill & Melinda Gates Foundation gave these issues a closer look through a focus on trends and policies in Kenya and Ghana. Cheikh Mbacké of the William and Flora Hewlett Foundation offered comments on the presentations.

FERTILITY DESIRES

High demand for children is typical in sub-Saharan countries, Casterline noted. He explored trends in fertility desires there in comparison with those in other regions, and considered the implications for fertility decline in Africa. Using national demographic survey data for 84 countries, Casterline examined people's views about the ideal number of children to have and their prospective preferences, as expressed in their current answers to the question of whether they would like to have

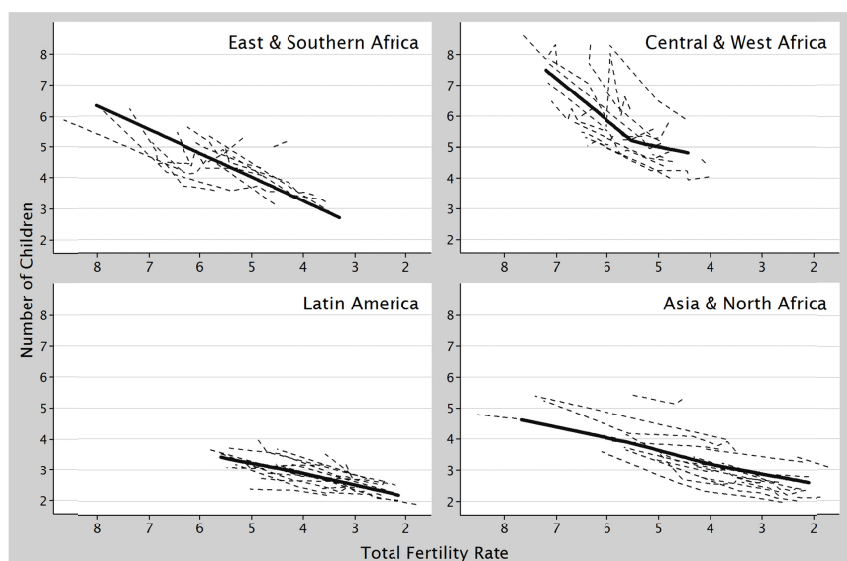


FIGURE 3-1 Trends in ideal number of children and total fertility rates.

SOURCE: Casterline (2015).

NOTE: Samples for each region were Eastern and Southern Africa, 18 countries, 60 surveys; Central and West Africa, 20 countries, 70 surveys; Latin America, 18 countries, 72 surveys; and Asia and North Africa, 27 countries, 89 surveys.

another child. Using linear regression analysis and other tools, he was able both to estimate a mean preferred number of children and also to establish regional and country-by-country trends.

Casterline explained that ideas about the ideal number of children have tended to change with total actual fertility rate, and he highlighted differences in both across four regions; see Figure 3-1. These data demonstrate that while fertility desires have declined in all regions, they are markedly higher in sub-Saharan African countries than in other regions, he explained, and people in the Central and West African regions desire the highest numbers of children. As this region began its fertility transition in the mid-1990s, he noted, actual fertility levels approximately matched people's desires in terms of number of children to have. In other regions, the actual fertility levels generally exceeded people's desires at that same point.

Looking more closely at the relationship between desires and actual numbers of children born, Casterline found that in most of the countries studied, parents' desire to stop having additional children increases with

parity, or as they have additional children.¹ However, although there is an overall trend in the African countries studied toward increased desires to stop having additional children, parents in the sub-Saharan region tended to be slower to reach the point of desiring to stop.

To fully understand trends, it is important to incorporate varying fertility desires and other factors into models of fertility decline, Casterline emphasized. He and his colleagues identified four factors to incorporate in calculating a hypothetical change in total fertility rate (TFR):

- Nuptiality—adult years spent in or out of marital union;
- Preference composition—in-union years spent not wanting another child (versus wanting a child);
- Wanted rates—rate of childbearing among those wanting another child (conditional wanted rate); and
- Unwanted rates—rate of childbearing among those not wanting another child (conditional unwanted rate).

The results of this analysis for four sub-regions of Africa show that nuptiality is the factor with the largest effect on TFR and that change in preference composition is not a strong factor. Given high fertility desires, especially in Central and West Africa, Casterline and his colleagues were surprised at this result and conducted further analysis to determine whether changes in both preference composition and unwanted rates together would show a greater effect. The results indicated that a joint change was far more consequential than the sum of the separate effects of these two factors. He concluded that a substantial fertility decline in the region will therefore require changes in both fertility desires and the implementation of those desires.

Casterline closed by pointing out that there is a need for much deeper understanding of fertility demand in African countries. Research on the topic has been limited, he noted. Perhaps most important, in his view, would be further examination of the intersection between the desires individuals have for additional children and the implementation of those desires.

CHILDBEARING PATTERNS

Timaeus focused on the many different factors that influence fertility and how they interact. He pointed out that demographers have tended to focus only on the use of contraceptives to limit family size, and to view

¹Parity is used in the context of childbearing to refer to the number of pregnancies carried to term.

fertility transitions as arising primarily from increasing availability of contraception. However, he noted, the reality is more complicated. Women may use contraceptives to control the intervals between births, but they may also wish to avoid getting pregnant for reasons that are unrelated to their childbearing history, including poor health, marital instability or infidelity, inadequate housing, or a need to save money for existing children's education. Women may also delay childbearing because they are not sure whether they want a child.

This is important, Timaeus explained, because postponing childbearing and spacing out births are different decisions that researchers often lump together. Postponement refers to a strong motivation to avoid having a child in the present that is accompanied by the idea that having a child in the future might be desirable, he explained. Spacing is a plan to have a child at a suitable time, for example to coincide with favorable expected life changes.

In broad terms, Timaeus explained, the fertility transition that occurs in response to economic development is a response to several factors that affect fertility desires:

- declines in child mortality, which allow couples to plan on having fewer children, typically half as many as before the decline;
- more productive occupations opening up for women, increasing the opportunity cost of childbearing, and also increasing the benefits of educating children;
- possibility of insurance and other supports for old age reducing the pressure to have children who will bear this responsibility;
- improvements in birth control technology and access to it; and
- people increasingly viewing childbearing as a choice, rather than "something that happens to you."

Women's thinking about childbearing is also affected by institutional factors, modeled in Figure 3-2, and it may be these issues that often cause them to postpone childbearing, Timaeus suggested. Timaeus quoted another expert on the importance of these factors: "Everyday life in contemporary Africa is deeply uncertain, due to economic reversals, political instability, and substantial cultural change over the past decades" (Johnson-Hanks, 2004, p. 351). Cultural traditions still recognized in many African countries, such as bride wealth customs or mutual support within extended families, may conceal significant changes in family structure and dynamics that have occurred. These include frequent premarital childbearing, high incidence of divorce and remarriage, increasing numbers of female-headed households, and the geographic dispersal of extended families.

Uncertainty, Insecurity, and Vulnerability

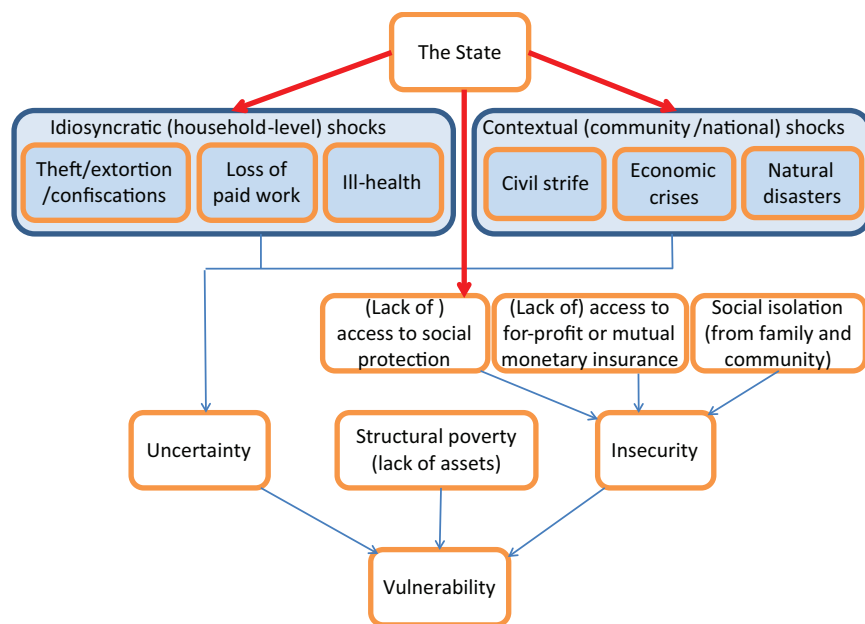


FIGURE 3-2 Institutional factors that may influence childbearing decisions.
SOURCE: Moultrie and Timaeus (2015), used with permission.

Women with children often cannot rely on their partners, families, or communities, or on public services for support in raising their children, or “are unsure whether they can,” Timaeus explained. “This insecurity exacerbates the impacts of poverty and an uncertain environment,” he added.

Timaeus closed with several points. First, he noted that demographers should consider the full range of concerns that affect women’s decisions about childbearing and should recognize the significant differences among decisions to postpone the next birth, to plan particular spacing of children’s births, or to limit the total number of children desired.

The impact of birth spacing on fertility is inherently limited, he observed, but birth postponement can result in substantial fertility declines and appears to be having this effect in Southern and Eastern African countries. Both birth postponement and the slow decline in African fertility, he suggested, are mediated by institutional factors that cause people to feel economically insecure. Timaeus suggested that demographers have too often viewed the decisions of women in African countries “through a

Eurasian lens” and that greater understanding of the institutional contexts in which women make decisions about childbearing is needed.

TRENDS IN AGE AT MARRIAGE AND FERTILITY

Hertrich examined nuptiality—the tendency of a population to get married. Declines in nuptiality often occur in response to economic development, she noted. Nuptiality is a proximate (or direct) determinant of fertility, and its decline is often the first step in a country’s fertility transition, she explained. The connection between nuptiality and fertility, she added, reflects social and family structures. Marriage is a structure “where gender differences are organized,” she noted, and where individual and conjugal autonomy are defined. Thus, “women’s agency and gender issues are important factors” in reproductive behavior.

Hertrich noted several differences in African nuptiality patterns as compared with international averages. First, sub-Saharan African women’s median age at first union, 21.1 years, is the lowest in the world; the median age is 22.6 in Asia and 26.4 in Latin America. The median age difference between spouses is also the greatest in the sub-Saharan region, with men 5.3 years older than their wives, as compared with 3.2 and 2.9 years older in Asia and Latin America, respectively. More broadly, the sub-Saharan region could be described as pro-natalist, she explained. Features such as universal marriage for both sexes, early marriage for girls, prompt remarriage for widowed and divorced women, and polygamy tend to mean that women spend most of their reproductive life in a union, with their social status focused on their role as mother and wife.

Hertrich explored the connections between long-term trends in nuptiality and the timing of fertility in sub-Saharan Africa by asking three questions:

1. To what extent is fertility decline preceded by changes in nuptiality patterns?
2. Is there a threshold in age at marriage to be reached before fertility starts to decrease?
3. Are there regional differences in the link between nuptiality and fertility changes?

She and her colleagues used national surveys and censuses to examine long-term (starting in the 1960s) trends for 55 countries. They created a database to bring together statistical data on marital status, focusing on the median age at first marriage for women, calculated from the percentage of women who had never been married by various ages. For fertility data, they used the fertility series from the 2012 revision of World Popu-

lation Prospects, a set of global demographic estimates and projections produced by the United Nations.²

The data in Figure 3-3 show the trends from 1965 to 2010 for African countries, which include a widespread increase in women's age at first marriage. The darker colors in the top row of maps indicate areas with higher ages at first marriage. The maps in the bottom row show changes in fertility across the same time span; the darker areas show areas with lower TFRs. A comparison of these two sets of maps shows the time lag between changes in nuptiality and changes in fertility.

Hertrich and her colleagues estimated the median age at first marriage at the beginning of a fertility decline and at earlier years for each country in their sample, and they determined that fertility transition is not likely to begin in a country where the median age at first marriage for women has not reached at least 18 years. If the increase in age at marriage was a direct factor in fertility decline, she went on, then one would expect that age at marriage and TFR would change together. This occurs in some countries, she explained, but is not the most common pattern. There were three distinct patterns: one in which the two developments occur in separate stages, one in which they occur together, and one in which there is no clear connection.

Hertrich concluded that these data demonstrate that a fertility decline is not possible where the age at first marriage is below 18—and she noted that in most cases fertility begins to decline after the median age reaches 19 years.

THE IMPACT OF SOCIOECONOMIC TRENDS

Eloundou-Enyegue's focus was on ways to understand how individual processes add up to trends that can be discerned at the national level. He suggested that relying exclusively on either micro- or macro-level analyses is insufficient. A method that aggregates the individual processes and synthesizes those results with macro-level data, he explained, yields more sophisticated understanding of socioeconomic factors that influence fertility, such as education, urbanization, and socioeconomic status. He focused particularly on the effects of education on different patterns of change in fertility levels.

There is a rich literature in micro-level analyses, Eloundou-Enyegue noted, that rest on solid theoretical grounds. This type of analysis provides high-quality information about individual fertility determinants, but it fails to shed light on macro-level historical processes. Macro-level analysis, in his view, rests on a weaker theoretical platform, and sam-

²See <http://esa.un.org/wpp/> [July 2015].

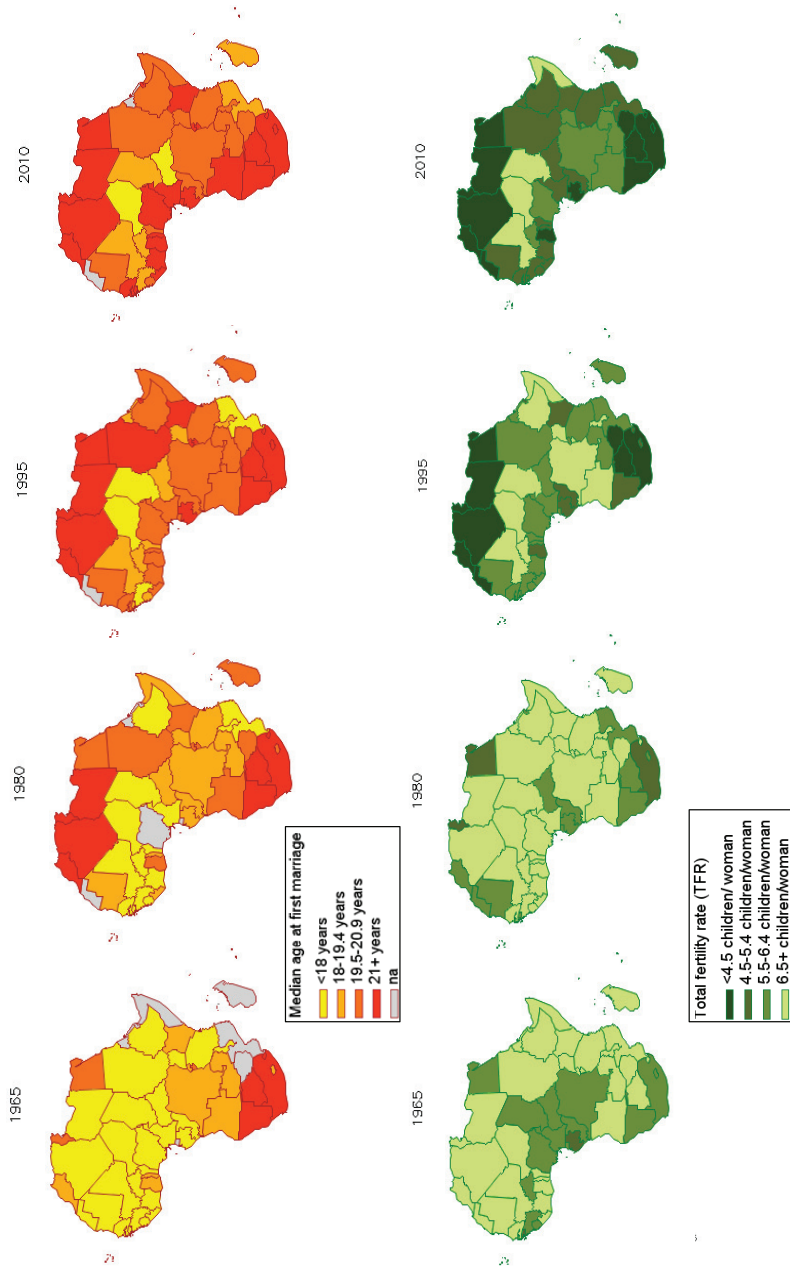


FIGURE 3-3 Long-term trends in age at marriage and total fertility rates.
SOURCE: Hertrich (2015).

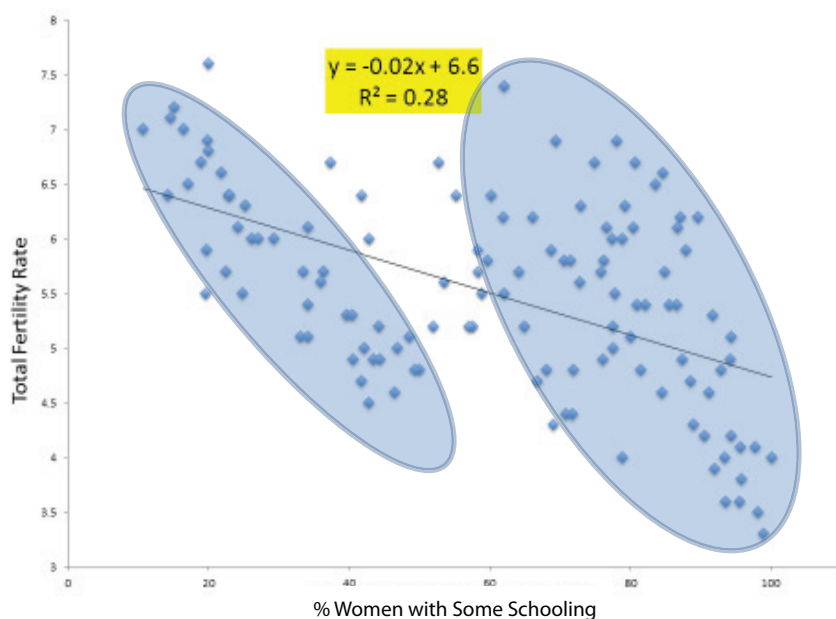


FIGURE 3-4 Cross-sectional relationship between education and fertility.
SOURCE: Eloundou-Enyegue (2015).

ple sizes are frequently small, he noted. They are often also limited by endogeneity—the confounding effect of variables that affect the outcome but are not measured.

One is that these approaches tend to be based on an assumption that processes remain constant across the fertility transition. However, he explained, a determinant such as education may have a differing influence at different points in the course of a fertility transition—both in terms of the magnitude of its effect and in terms of the mechanisms. The scatter plot in Figure 3-4 shows how a simple regression line might not reveal two distinct groups with different slopes, he noted, which represent the differences across time. The effect of socioeconomic factors does not necessarily remain static over the course of the transition. Another issue is that there can be enormous differences within countries—such as between the changes among less and more educated women—that would not be captured by macro-level analysis.

Eloundou-Enyegue proposed a theoretical approach for integrating the two types of analysis that is based on the idea of aggregating three types of processes that can happen at the same time, or at different times:

- compositional effects—the effect of the characteristics of a group, such as an increase in the numbers of people who are educated, on individual outcomes;
- behavioral effects—the effects of a policy or change, such as an increase in educational opportunity, on individual behavior; and
- spillover effects—the effects of seemingly unrelated events, such as the influence of people who are educated on other people’s behavior.

The two graphs in Figure 3-5 illustrate two hypotheses about how a fertility transition might progress. The top graph shows a scenario in which more-educated women experience the decline much more rapidly than less-educated women do, which means that there is considerable inequality between the two groups during the middle phase of the transi-

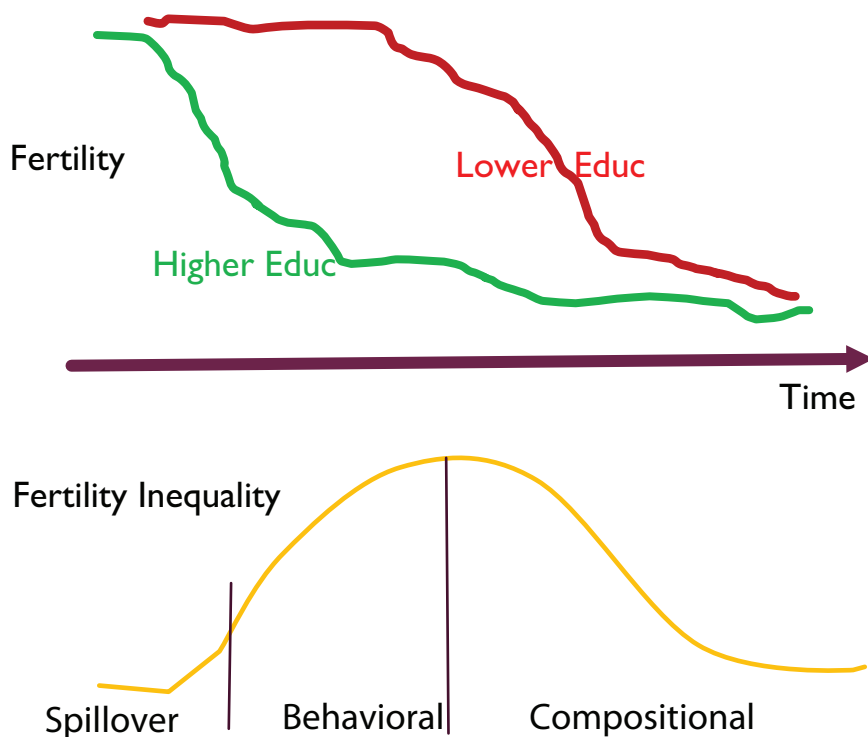


FIGURE 3-5 Two hypotheses about the pattern of fertility transition.
SOURCE: Eloundou-Enyegue (2015).

tion. The bottom graph shows that the three types of effects may each be most influential at different phases of the transition.

To test the hypothesis that the three types of effects actually occur in sequence, Eloundou-Enyegue used a mix of demographic and regression decompositions. Using cross-sectional data from 22 sub-Saharan African countries at different stages of the fertility transition, he produced preliminary results that seem to confirm his prediction that the compositional effect would be greatest at the early stages of a transition.

Eloundou-Enyegue explained that this “middle-ground” approach to incorporating sub-national processes into the analysis of national trends can help to clarify the mechanisms by which different factors influence fertility, which, in turn, can shed light on the pace of fertility declines and their effects.

FOCUS ON KENYA AND GHANA

Ndugga offered four reasons why a focus on Kenya and Ghana would be useful. These two countries, which reflect different social and economic contexts, were the first in the sub-Saharan region to develop and launch population policies, which they both did in the 1960s, he noted. Both have developed and implemented a wide range of policies and programs aimed at making family planning options more readily available. Both have also experienced significant changes in TFR and contraceptive prevalence rate since 1970. Ndugga and his colleagues drew on numerous sources of data for these two countries, including Demographic and Health Survey datasets, Performance Monitoring and Accountability Survey results,³ and review of national documents and other materials, as well as their own experience and discussions with country program managers and implementation partners.

They reviewed three primary factors that influence fertility: the reproductive behavior of individual women or couples, as indicated by changes in their fertility preferences or contraceptive behaviors; socioeconomic and demographic characteristics of sub-populations; and institutional factors such as shifts in policy or service delivery environments. Kenya and Ghana experienced similar patterns of fertility decline starting in 1970: a rapid decline followed by a stall and a plateau. Rates of desired fertility and desired family size have also plateaued in both countries. Rates of unwanted fertility have plateaued as well, though they are significantly lower in Ghana. Looking at sub-populations, Ndugga noted that in both

³See <http://dhsprogram.com/What-We-Do/Survey-Types/DHS.cfm> [August 2015] and <http://www.pma2020.org/about-pma2020> [August 2015].

countries, the poorest and least educated segments of the population have the highest TFRs.

In Ghana, there has recently been an uptick in fertility in both rural and urban areas; in Kenya, there has been just a slight uptick in urban areas. Focusing on 15- to 19-year-olds, Ndugga noted that in both countries differences between urban and rural populations increased, and that there are large differences among groups with different levels of education.

For example, contraceptive use among married women, which is noticeably higher in Kenya than in Ghana, increased between 1988 and 2014, but this change is not reflected in trends for unwanted fertility. A look at data for married women in Kenya illustrates the discrepancies within the group that may explain this result; see Figure 3-6. Use of mod-

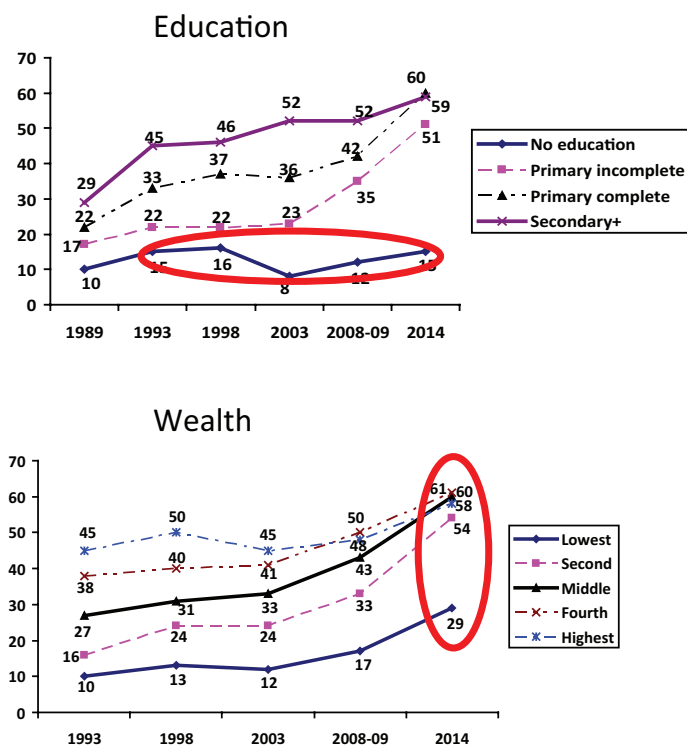


FIGURE 3-6 Contraceptive use among Kenyan married women by education level and wealth.

NOTE: Y axis indicates percentage using modern contraceptives.

SOURCE: Ndugga (2015).

ern contraceptive methods has increased more among rural than among urban women in both countries, Ndugga added, and has stalled among educated and wealthy women in Ghana.⁴

These data about the two countries highlight a few broad points about behavioral, socioeconomic and demographic, and policy factors that influence fertility, Ndugga concluded. In terms of behaviors, both countries have experienced similar total fertility trends, despite differences in contraceptive use and levels and patterns. While ages at first sexual experience and at marriage have increased, married and unmarried women still have long periods of nonuse of contraceptives. Ghana has lower rates of both wanted and unwanted fertility.

In terms of demographic factors, poor, uneducated, and rural Kenyan women have high TFRs, low contraceptive use, and high unmet need for contraceptives, in comparison with other groups in both countries. TFRs and modern contraceptive use have stalled among urban educated and wealthier women in Ghana, while they have increased among rural women there.

Both countries have established multiple policies and programs designed to reduce fertility, Ndugga noted, but implementation has not been effective enough to allow the programs to achieve desired results. Both countries rely on donor funding to implement their strategies, and major funding gaps have hampered thorough implementation. The mix of methods is likely not sufficient to meet women's needs in either country, Ndugga concluded—in particular those of poor rural women in Kenya and wealthy urban women in Ghana.

DISCUSSION

Discussion of these presentations covered a range of issues and questions, many relating to what can be inferred from survey results. In response to points raised in the discussion, several presenters suggested that more detailed research to explore the meaning of survey data on fertility desires and other issues would be useful. One person suggested that it is not clear from the DHS data exactly what women mean when they say they do not want any more children. On the other hand, it was observed that over the years such data points have proven to have a lot of validity and reliability—and that African respondents have consistently shown very high demand for children, in comparison with respondents in other regions.

⁴Modern contraceptive methods include birth control pills, patches, injections, and implants; intrauterine devices; and sterilization. Traditional methods include the calendar or rhythm method and withdrawal. See Chapter 4.

Another participant suggested that survey data may disguise variation in views across the sub-Saharan region and that if this variation were better understood, then the idea that African countries as a group are “exceptional” would be undermined. A related point was that Latin American countries have seen significant fertility declines even though age at first marriage and even age at first birth in those countries have not declined nearly as much—a point that highlights the importance of understanding the context and meaning of survey responses.

Another participant suggested that women may not always choose to be candid in response to questions about their contraceptive use and that researchers need to find additional means to understand their views. For example, this participant noted that Ghana appears to have achieved significant declines in fertility rates even though women there appear to be quite resistant to modern contraceptive methods. Others noted that donors are heavily focused on modern methods, but that heavy use of traditional methods, emergency contraceptives, and abortion in some places indicate that other approaches may need greater attention.

Mbacké provided comments on the presentations. With respect to the discussion of fertility desires, he agreed that the meaning of changes in people’s responses to surveys could be better understood. He noted that the framing of survey questions has changed over time and may not fully capture people’s actual thinking. As recently as 1990, for example, very high percentages of survey respondents indicated that family size is “up to God,” but that option is no longer included in surveys, and that few are asked about “unwanted births.” “We are sometimes asking questions and interpreting answers in our own way,” he said, adding the questions are sometimes answered by persons who do not fully understand the context. Fertility desires are “very fluid,” he added, so basing models on them may be problematic.

4

The Effects of Contraceptive Practice

Contraceptive use is a key factor in fertility rates that came up many times during the workshop, but four presentations provided detailed looks at this factor. Akinrinola Bankole of the Guttmacher Institute spoke about the impact of contraceptive use and abortion on fertility rates. Clémentine Rossier of the Institut National d'Etudes Demographiques addressed the role of traditional family planning methods, and Amy Tsui of Johns Hopkins University discussed data on contraceptive preferences and practices. Donatien Beguy of the African Population and Health Center discussed family planning among the urban poor.

IMPACT OF CONTRACEPTIVE USE AND ABORTION

Bankole explored a variety of data sources in assessing the role of contraceptive use and abortion in limiting fertility, including survey, long-term trend, and demographic data. In most of sub-Saharan Africa, he noted, only about 4 in 10 women wish to avoid pregnancy, and use of contraceptives, particularly modern ones,¹ is low, as Figure 4-1 shows. Pregnancy rates among women seeking to avoid pregnancy who use various methods to do so vary: the pregnancy rate for women who use no

¹Modern contraceptives—generally those whose use requires medical assistance—include sterilization, the intrauterine device, birth control pills or injections, and implants. Traditional methods of birth control include periodic abstinence, withdrawal, and folk methods.

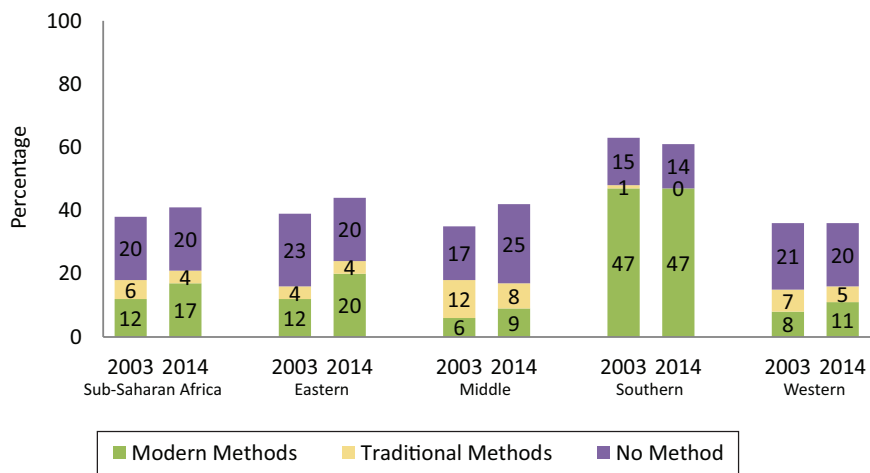


FIGURE 4-1 Contraceptive use among women aged 15 to 49 in five sub-Saharan regions in 2003 and 2014.
SOURCE: Bankole (2015).

method at all is 40 percent. Abortion, however, plays an important role in limiting fertility in different parts of the region, he added; rates range from 15 to 38 abortions per 1,000 women aged 15 to 49.

Bankole and his colleagues used a method developed by the Guttmacher Institute to estimate the effects of contraceptives, abortions, and women's decisions about them by analyzing data on unintended pregnancy outcomes (i.e., live birth, abortion, or miscarriage).² The analytic approach allowed Bankole and his colleagues to examine scenarios, such as women changing from using no contraceptive to using a modern method, or changing type of method. They estimated pregnancies by intention status and outcome by both country and sub-region, using a variety of data. They also estimated the distribution of women of reproductive age (18 to 49) by their need for contraception for 2003 and 2014, together with other data.

They found that the use of modern contraceptives prevented many pregnancies in both years studied, Bankole reported (see Figure 4-2). Women switching their contraceptive method had substantial effects in the eastern sub-Saharan region, but not in other regions, he added. Modern methods have a much larger effect in preventing unintended preg-

²See <https://www.guttmacher.org/pubs/AddingItUp2014.html> for a discussion of methods and data sources [July 2015].

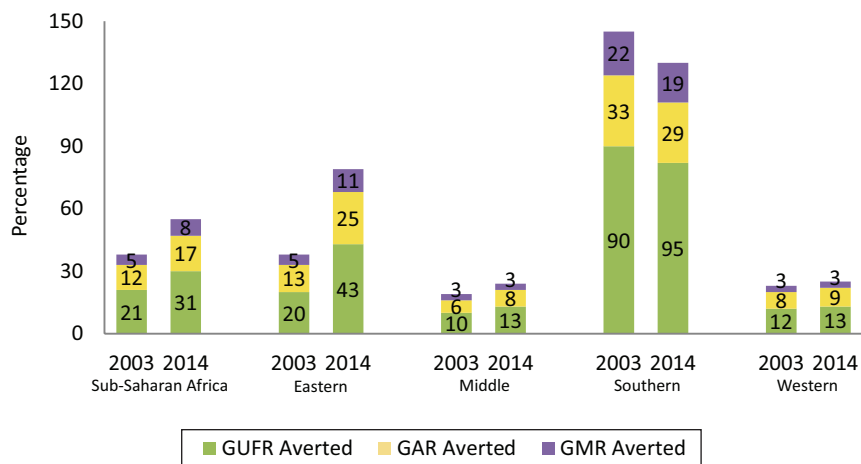


FIGURE 4-2 Effects of modern contraceptive use in 2003 and 2014, per 1,000 women, ages 15-49.

NOTE: Each bar indicates total pregnancies averted. GFR is general unintended fertility rate, GAR is general abortion rate, and GMR is general miscarriage rate.

SOURCE: Bankole (2015).

nancies than traditional ones do, with the strongest effect in the southern region. Reversible modern methods were more effective than condoms alone, he added. Abortion has an additional effect on total fertility rates, which also varies by region, preventing from 12 to 29 additional births per 1,000 women above the effects of contraception.

Bankole highlighted primary conclusions from the data he presented. Although fertility remains high in sub-Saharan Africa and contraceptive use overall is low, it is clear that the use of modern contraceptives in particular played an important role in preventing rates from being even higher. Abortions also played an important role in limiting fertility. There is a need for community education about the advantages of contraception, he added, and for programs that provide a wide variety of methods as well as adequate counseling. Sufficient and sustained funding and political commitment are both necessary to meet those objectives, he concluded.

ROLE OF TRADITIONAL FAMILY PLANNING METHODS

Despite evidence that modern methods are more effective, Rossier noted, traditional methods are used worldwide and in African nations, as Figure 4-3 shows. She noted, however, that the terms “modern” and

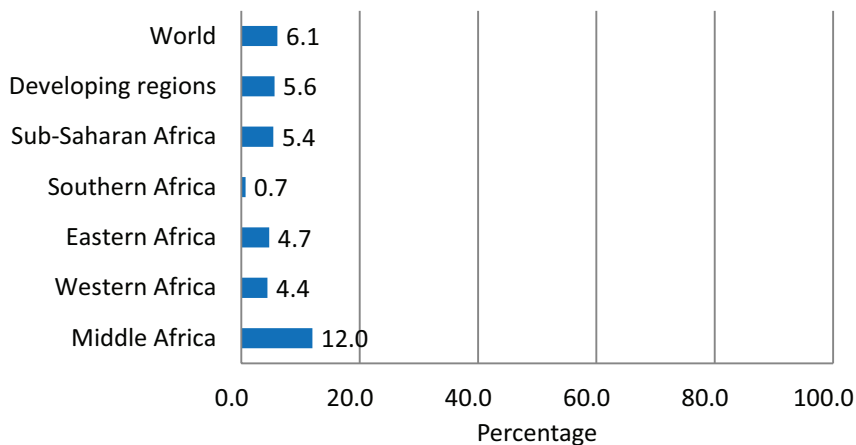


FIGURE 4-3 Use of traditional contraceptive methods in 2011, in percentage.
 SOURCE: Rossier (2015). Data from United Nations, Department of Economic and Social Affairs, Population Division (2013). *World Contraceptive Patterns 2013*. New York: United Nations.

“traditional” are somewhat misleading in the context of contraception. Periodic abstinence and withdrawal are the primary traditional methods used worldwide, she noted; used for the purpose of preventing pregnancy, they are interventions of the modern era. The more modern versions of periodic abstinence identify fertile periods more accurately than some older methods do. Thus, she suggested that these two methods be called “neo-traditional” because they require no device or contact with health services but are based on modern knowledge. The truly traditional means of regulating fertility used in sub-Saharan Africa, she explained, are postpartum abstinence and premarital abstinence, both of which are primarily the result of rules of conduct that are not necessarily intended to prevent pregnancy.

Rossier and her colleagues examined usage of these three types of methods (i.e., modern, traditional, and neo-traditional) among women in 23 countries in three sub-regions of sub-Saharan Africa, using both descriptive and multivariate analysis methods. They characterized women by types of sexual inactivity, life stage, socioeconomic status, and region, and then used logistic regression methods to compare women’s approaches to controlling their fertility.

They found that across the sub-regions, women had similar patterns of sexual activity. Married women spend approximately one-third of their married life sexually inactive, she reported, and postpartum inactivity accounts for only one-third of this inactivity. Women who have never

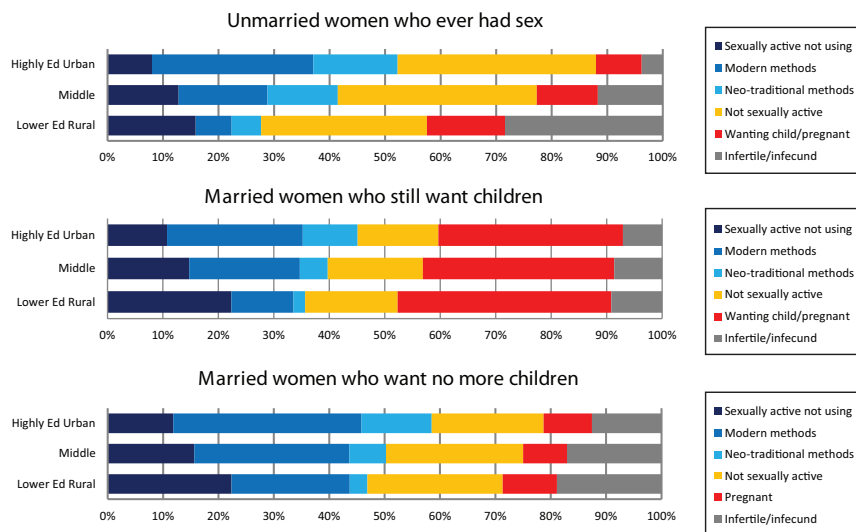


FIGURE 4-4 Unmet need for contraception by socioeconomic status.

SOURCE: Rossier (2015). Data from United Nations, Department of Economic and Social Affairs, Population Division (2013). *World Contraceptive Patterns 2013*. New York: United Nations.

married spend the majority of their reproductive years inactive. These patterns vary by education level and rural or urban residence, she added. The three graphs in Figure 4-4 show the distribution of approaches for three different categories of women: unmarried women who have had sexual activity, married women who still want more children, and married women who want no more children. Each group was examined by urban or rural and educational status.

These data show that, because they spend less time wanting a child, being pregnant, or being infertile, women who are financially stable have a greater demand for birth control at every life stage. However, this increasing demand is more than met by their use of both modern and neo-traditional methods, and their overall unmet need is lower than that of less educated rural women.

The multivariate analysis showed, in addition, that patterns vary. For example, women in Central Africa, educated women, and those who live in rural areas are particularly likely to use neo-traditional methods, while unmarried women are more likely to use modern methods than neo-traditional ones.

Rossier suggested several reasons why women might favor neo-traditional methods over modern ones. Some may fear the side effects of

hormone-based methods, she noted, and better educated women may have the easiest time transitioning to these methods. Some women may have relatively weak motivation to avoid pregnancy, Rossier added, although she noted that there is little evidence for this hypothesis. Some evidence does suggest, however, that some women may associate modern or neo-traditional methods with promiscuity; and that such women, particularly those who are unmarried, may prefer traditional methods. It is also true, she added, that family planning programs and products are less readily available in rural areas, and therefore women in those areas would have less opportunity to use modern methods.

Overall, Rossier, concluded, there is considerable unmet need for satisfactory contraceptive methods in the region.

CONTRACEPTIVE PREFERENCES AND PRACTICES

Amy Tsui began by noting that sub-Saharan Africa will need improved family planning and that leaders in the field have emphasized that successful family planning will require (Caldwell and Caldwell, 2002)

- stronger political leadership;
- programs that meet the needs of all women, not only those who are currently married;
- support for the market that makes products available; and
- recognition that hormone-based methods, particularly injectables, are vital.

It will also be important to consider the diversity of the African continent, Tsui added. She noted that the combined history of ethno-linguistic diversity, which was overlaid by the influence of the distinct languages and cultures of European colonizing nations, has presented a unique set of challenges for African nations. The two maps in Figure 4-5 illustrate this diversity. She and her colleagues used national-level Demographic and Health Surveys (DHS) data for the years 1985 to 2013 to review trends and patterns in contraceptive use in that context, attempting to draw out some of the unique aspects of contraceptive practice of the sub-Saharan region.

Tsui laid out a few differences as background for the data that she and her colleagues explored. One is that the context of sexual partnership in the sub-Saharan region differs in some ways from that in other places. Premarital activity, which may occur primarily in the context of less formal marriage arrangements, and polygamy are more common in the region than elsewhere. There is a pattern of postpartum abstinence and amenorrhea that limits exposure to pregnancy risk, and women tend to seek ways to use contraception that are discreet. Family planning pro-

grams are weaker in this area than in other regions, but the region also has experienced an ongoing HIV epidemic, which has influenced thinking about contraceptive use.

She noted that policy changes can have a profound impact on contraceptive access and use, as the graph in Figure 4-6 shows. Iran and Rwanda both show how quickly contraceptive behavior can respond to government policies, but the slow and steady growth seen in Colombia, Bangladesh, and Kenya also demonstrate policy's impact. By contrast, the largest sub-Saharan nation, Nigeria, has not seen an appreciable increase.

To gain a more precise picture of contraceptive practices in the sub-Saharan region, Tsui and her colleagues compiled national-level data to examine rates of use of modern contraception, and particularly of three methods that are discreet (that can be used without others being aware of it) among married and unmarried women. Use of all modern contraceptives has increased for all groups of women, but sexually active unmarried women—a group that is growing—are particularly likely to choose methods that are accessible, under personal control, and discreet. Figure 4-7 shows data on use of any type of contraception for sexually active unmarried women in four countries.

Tsui discussed the effects of other distinguishing characteristics of the sub-Saharan region. She noted that women in polygamous marriages may have lower motivation to use contraception than other women because of a perceived need to compete for the husband's resources, though polygamy rates are decreasing in the region. Postpartum abstinence and amenorrhea also likely depress demand for contraception, she added, but both of these factors are decreasing in the region. Thus, women who resume sexual activity and fertility sooner may have an increased demand for contraception. Tsui and her colleagues examined data for women in eight sub-Saharan countries who had recently given birth to examine patterns in the adoption of implants or injectable contraceptives after delivery. They found that patterns vary across the countries, which, she explained, suggests that the role of the spouse and the specific cultural practices and expectations surrounding fertility and contraception play a large role in women's decision making.

Responses from males in the DHS survey data allowed the researchers also to examine husbands' views of family planning and their understanding of what their wives' views were, Tsui explained. Data on men's reports of whether they or their wives approved of family planning show that husbands' approval has increased somewhat but that spouses tend not to communicate extensively about this issue.

Tsui and her colleagues assessed the strength of family planning programs in the region by examining data on women who discontinued use of contraception for preventable reasons, such as method failure,

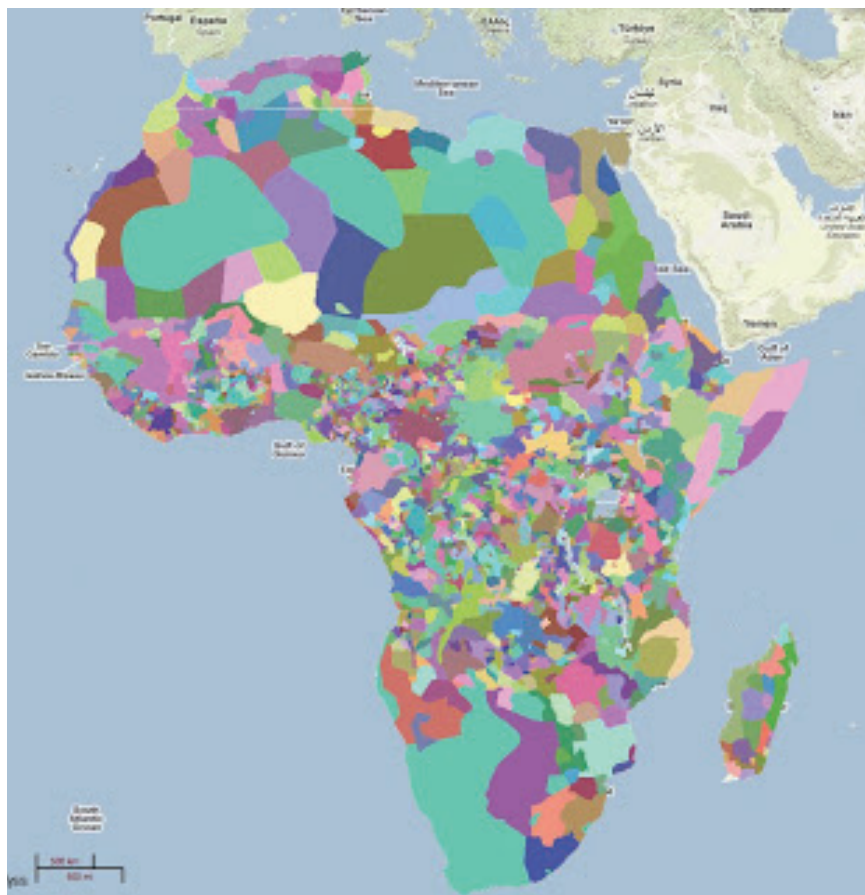
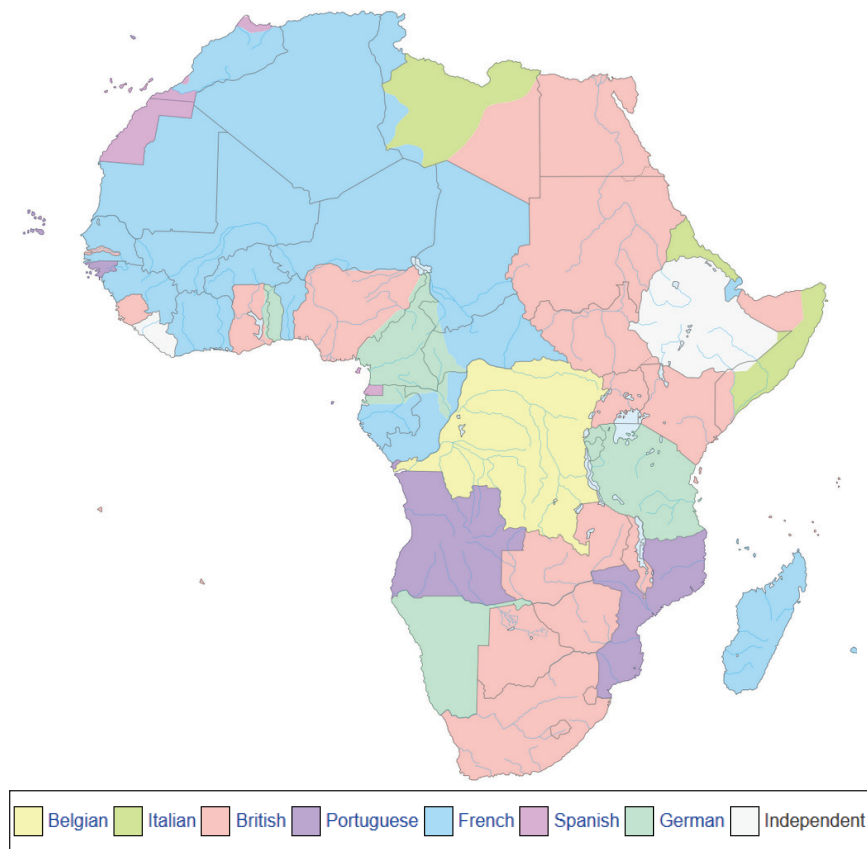


FIGURE 4-5 Distribution of ethno-linguistic clusters and European colonial influence in Africa.

SOURCE: Harvard WorldMap (Harvard University) showing data from Murdoch, G.P. (1959). *Africa: Its People and Their Culture History*. New York: McGraw-Hill.

side effects, or problems with access or cost. The weighted average data for 20 sub-Saharan countries and for 3 countries suggest that one-half of discontinuation episodes could be prevented through an effective family planning program. For example, more than 35 percent of discontinuation episodes in Ethiopia came about because of side effects or health concerns, and the total across the 20 countries studied was 24.2 percent.

HIV is a problem throughout the region, Tsui added, and a rising concern is that increased use of contraception that does not also protect

**FIGURE 4-5 (cont'd.)**

1913 map of Colonial Africa.

SOURCE: Eric Gaba–Wikimedia Commons user: Sting. Available: https://commons.wikimedia.org/wiki/File:Colonial_Africa_1913_map.svg [December 2015].

against HIV will result in increased HIV transmission. Another concern for some is that resources devoted to family planning may take away from the support for HIV prevention and care, she noted. To test this hypothesis, she and her colleagues examined the data on HIV testing for women and men to see whether there was any relationship between having been tested and use of contraception. They found a high correlation between these two services and concluded that there does not seem to be a problem with competition for resources.

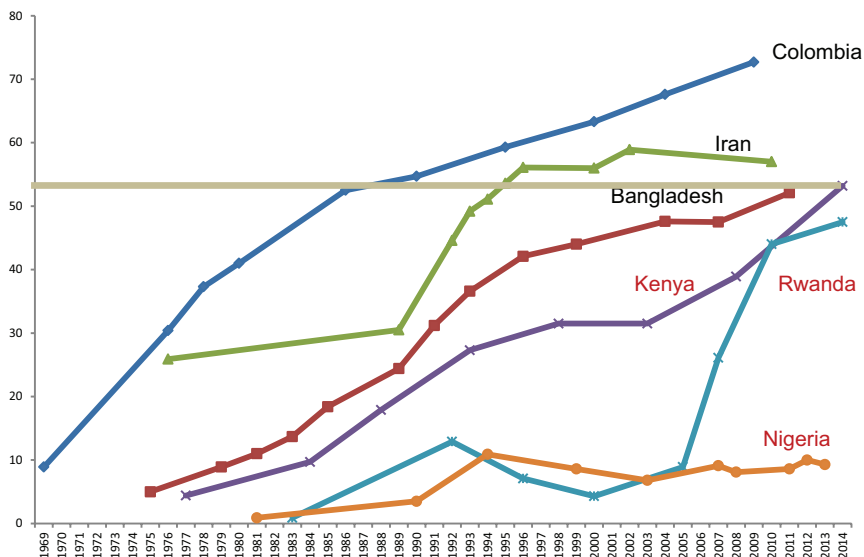


FIGURE 4-6 Trends in modern contraceptive prevalence in six countries. SOURCE: Tsui (2015). Data from United Nations, Department of Economic and Social Affairs, Population Division (2014). *World Contraceptive Use 2014*. New York: United Nations.

Finally, Tsui and her colleagues used longitudinal regression models with country-level fixed effects to examine differences across the sub-Saharan region. They wanted to understand whether sexual activity, use of modern contraceptives, postpartum abstinence, and use of discreet methods have varied significantly over time or from country to country. The time trend and heterogeneity by country are both very strong and significant, she reported, for each of the outcomes they examined. Thus, treating the sub-Saharan countries as a region with consistent or static characteristics and developments would be unwise, she concluded.

Tsui closed with several general observations. First, the use of modern contraception is increasing in sub-Saharan countries, though there is significant geographic variation. Support for the use of family planning methods among husbands is increasing. More than one-half of all contraceptives used in the region are either injectables or implants, she noted, and unmarried females are even more likely than married ones to use modern methods. She suspects that reliance on medical abortion is high, but did not have data on this. In general, when contraceptive use is discontinued, she concluded, it is because health care delivery systems are weak, though newer mobile and community-based models have recently

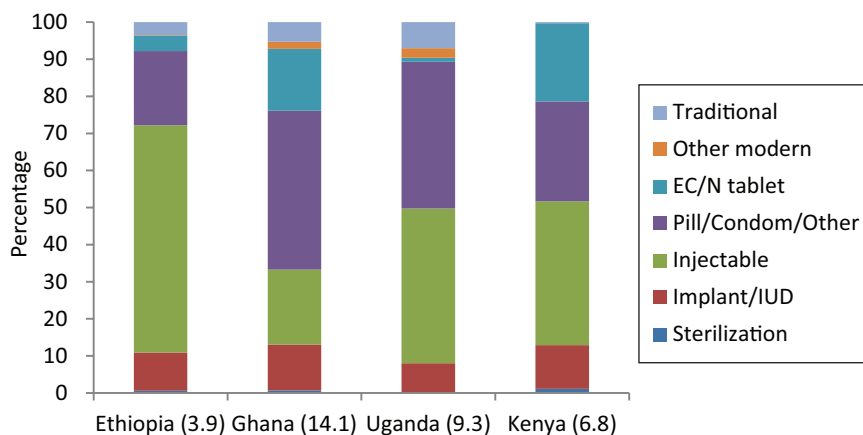


FIGURE 4-7 Contraceptive use among sexually active unmarried women in four countries.

NOTES: Numbers in parentheses indicate the percentage of women in each country who are sexually active and unmarried and are thus included in these survey results. Results are based on pooling of two national survey samples conducted in each country.

SOURCE: Performance Monitoring and Accountability 2020 Project. Available: <http://www.pma2020.org> [December 2015].

expanded access. Resources for combating the HIV epidemic have carried benefits and costs for family planning programs and practices, she added. “In all it’s quite a varied picture,” she concluded, “the social and structural forces may be the same as ones seen in other regions,” but the internal patterns through which they play out vary from country to country.

FAMILY PLANNING AMONG THE URBAN POOR

Beguy presented evidence from Nairobi, Kenya, to focus on changes in use of family planning methods among the urban poor. As background, he noted that poor economic conditions in many sub-Saharan countries have led people to settle in urban slums with no access to basic services and infrastructure. Informal settlements in urban areas in the sub-Saharan region have mushroomed over the past 30 years. Overall, the population of slum dwellers in the region almost doubled from 103 million in 1990 to 200 million in 2010, though the proportion of urban residents living in slum conditions decreased from 70 to 62 percent.

The primary driver of this growth is natural increase, Beguy noted, rather than migration from rural areas or reclassification of settlements as

urban. In the sub-Saharan region, 75 percent of urban growth is accounted for by natural increase, as opposed to 60 percent on average in other developing areas. Moreover, high fertility rates in the region are generally the result of mistimed or unwanted pregnancies, which suggests that the urban poor have high unmet need for effective family planning services. Thus, in Beguy's view, improving access to those services will be critical to reducing the pace of urban growth in the region and particularly increasing the numbers of people living in slum conditions.

Kenya illustrates well the urban crisis in the sub-Saharan region, explained Beguy. Between 60 and 70 percent of Nairobi's residents live in slum conditions, and sexual and reproductive health outcomes are poor among those residents. Unmet need for contraception is greatest among the poorest women in these slums—the greatest gap between wanted and unwanted fertility is found among them as well. On the positive side, Beguy added, there is some evidence that the gap between rich and poor in terms of family planning has begun to decline and that family planning programs may be more accessible to the poor populations than in the past.

However, data about the urban poor populations are scarce, Beguy explained, so it is difficult to explore the mechanisms that may be bringing this about or other questions about sexual and reproductive health in these areas. The well-being of the urban poor, in Beguy's view, will increasingly drive results for national development indicators in Kenya, so it will be critical to understand and address needs in the urban slum areas. He and his colleagues examined cross-sectional survey data on use of family planning services in slum settlements in Nairobi between 2000 and 2012. They examined the role of 10 independent variables (i.e., age, ethnicity, religion, education, wealth, child mortality experience, exposure to family planning, desire for additional children, employment status, and number of living children) in influencing the use of a modern method of contraception (long-acting and permanent methods as well as short-acting ones).

Beguy and his colleagues found a significant increase in the prevalence of modern contraceptive use among women living in Nairobi slums, from 34.4 percent in 2000 to 53.5 percent in 2012. They noted the increase among women in all of the categories studied (i.e., religion, ethnicity, education, age level) and among women with varying fertility preferences, exposure to family planning information, child mortality rates, and number of living children. The only exception was among women undecided about whether they want to have more children.

Beguy and his colleagues analyzed the data to determine which covariates seemed to have the greatest association with increases in the use of modern contraception methods. Beguy explained that if recent

interventions to improve access to contraception³ have been successful, then one would expect both an increase in the overall prevalence of modern methods and a reduction of the inequity in access. The results of the analysis corroborate both expectations, he added, because the increase in use of modern methods was highest among the groups who had the lowest access in 2000.

The analysis also showed that changes in women's behaviors suggest that new strategies for reaching women adopted by family planning programs may have been effective. In particular, he noted that many more women were informed of family planning options when visiting a health facility in 2012 than had been in 2000, and that this change might help to account for the 56 percent increase in use of modern contraception among women who desire no more children during this period. Another important factor is education level, which, Beguy noted, was the factor most strongly associated with increased use of modern methods. This period also saw an improvement in child survival rates, he added, which is associated with increasing demand for contraception.

Beguy concluded from this analysis that family planning services are increasingly reaching slum dwellers, but that barriers remain. Sustained efforts will be needed to build on the improvement he and his colleagues identified, he added.

DISCUSSION

Discussion of the presentations highlighted areas where further data and research would be valuable. The issues that were raised include the following:

- The reasons for distrust or rejection of modern hormonal methods—what are the roles of rumors about these methods, as opposed to negative personal experiences?
- The reasons that comparatively more educated women use traditional methods. What are failure rates for these methods? Do failure rates vary by education or place?
- The practices that women who discontinue use of modern contraceptives use to prevent pregnancy.

One topic that received particular attention was women's preferences and decision making. One participant noted that the recent trend

³Beguy noted in particular a reproductive health initiative that targets women in poor urban settlements, funded by the Bill & Melinda Gates Foundation, and efforts to remove financial barriers to providing family planning services.

in economic analysis is to incorporate behavioral analysis to better understand real-world choices, because traditional economic analysis is not always adequate to explain decision making. Another noted that whether a behavior is in fact rational depends significantly on the context and circumstances, so that what might seem to be the most rational choice from the perspective of urban, educated women might in practice be much less so for women in different circumstances.

Looking at practical implications, one participant wondered whether it is realistic to expect family planning programs to make every contraceptive option available everywhere, and another agreed that, given budget limitations, it would be reasonable to attempt to do more to match options to women's preferences. Another participant noted that the means by which people acquire knowledge and information are changing rapidly, which should drastically change the delivery of family planning.

Discussant Ndola Prata offered a few general observations about the presentations and discussion. The presentations clearly demonstrated, she noted, that contraceptive practice can influence the pace of declines in fertility, but that overall demand for contraceptives will be greatly influenced by the supply of good quality services and methods. In general, she added, women are more likely to continue using a contraceptive when they are able to use the option they prefer, so making sure that demand for preferred methods is satisfied is an extremely important element in promoting fertility decline, in her view. Improving the supply of contraceptive options in the sub-Saharan region will require shifts in policies and programs, she added. For example, it is critical that all providers have the skills and capacity to provide at least all reversible methods—she noted that nurse practitioners, for example, can now complete in-service training without being taught how to insert an IUD. That circumstance could be changed through policy, she noted, but also highlights the need for greater innovation and responsiveness to the specific needs of the region, as well as better use of the private sector so that the supply of services and products can meet the need.

5

Policy Options and Opportunities

The workshop concluded with an opportunity for presenters and participants to share perspectives on policy options for the future. John May of the Population Reference Bureau discussed the politics of population and family planning policies and programs. Two groups of panelists provided the perspectives of donors and scientists on stalled fertility and its implications.

POLITICS OF FAMILY PLANNING POLICIES AND PROGRAMS

May brought 30 years of experience to bear on the subject of fertility in African countries, and he began with an overview of the current situation. First, there has been little change in the overall age structure of the population on the African continent since 1970. This means that there is still a long way to go in stabilizing the number of births so that the countries of Africa can experience a demographic dividend. The region's total fertility rate of 5.1 children per woman is the highest in the world, and the rate of modern contraceptive use overall is 23 percent, May noted. The countries of the sub-Saharan region, with a current collective population of 920 million, are on track to reach 2.1 billion people by 2050.

May identified three primary causes of continuing population growth across the region: (1) a dramatic decline in mortality, especially among infants and children; (2) high fertility levels that have been slow to decline and often have stalled; and (3) an age structure that is very young in comparison with those of developed nations. These challenges, he added, will

need to be pursued one country at a time because of the diversity of the region's progress.

May also highlighted several aspects of the politics of family planning policy. First, there have been several traditional obstacles to family planning in the sub-Saharan region. Apart from the pro-natalist stance common in many countries and the fragility of life in the region, which have been discussed, he noted the prevalent idea that Africa is an empty continent that needs more people in order to have larger markets. The sub-Saharan region is five times the size of India but has a smaller total population—India's is approximately 1.25 billion. Many African leaders, May added, have been worried about depopulation. Memories of the tragic history of slave trafficking are the backdrop for the decimation brought by the HIV/AIDS epidemic, he noted: both have threatened the survival of some ethnic populations. May said that he has often heard leaders argue that "it is people who are the wealth of the region" and that Africa's young and growing population can help its countries chart a course to prosperity like that of China.

A second issue is that some leaders have commented that they do not have the "policy space" to act to reduce fertility rates, May added. In some countries there are too few champions of family planning, or there may be active opposition to it. Other pressing problems, including HIV/AIDS, poverty, environmental degradation, and security issues, compete for the resources and attention that governments and leaders have and make it more difficult for them to devote attention to family planning issues.

The role of donors is another significant factor, May went on. During the past 30 to 40 years, donors have made many significant contributions in the region. Their role in supporting the collection of demographic data, including four rounds of census data that reflect a vast amount of work, has not been widely recognized, May pointed out. He particularly cited the Demographic and Health Surveys (DHS), on which many of the presenters drew in their research.¹ Donors have introduced many family planning programs in the region, often in contexts that were not immediately receptive. Donors have also tried to influence policy, despite waxing and waning interest by many regional governments, and have supported active advocacy models, which have been beneficial in some countries. At the same time, he said, some governments have been suspicious of western organizations that promote family planning and have pushed back against some of these ideas.

Finally, May noted, the priorities of leaders and others in the sub-Saharan region have shifted over time. The focus of family planning advocacy in the 1960s and 1970s was on population control. Over time, the

¹See <http://dhsprogram.com/What-We-Do/Survey-Types/DHS.cfm> [August 2015].

focus shifted to reproductive health. The HIV/AIDS crisis that began in the 1990s may have diverted some attention from family planning, however, and more recently the focus has shifted from reproductive health to the possibility of the economic growth that a demographic dividend—brought about by declining birth rates—could bring.

May also reviewed some key points about the effectiveness of family planning efforts. Overall, he suggested, such programs are believed to reduce fertility by 0.5 to 1.5 children per woman, though he believes the lower range of the estimate is closer to reality. Few family planning programs in the region have been studied using randomized controlled trials, though more such work is under way. However, some programs have been quite successful, May observed. Ethiopia, for example, has seen a dramatic decrease—by 3 children per woman—since 1990 as a result of increasing family planning coverage. This is a success story, he added, similar to what has occurred in many Asian countries. In Rwanda, there has also been a rapid increase in family planning coverage, linked to reforms in the health sector, political developments such as decentralization and finance reforms, and donor support.

May closed with his thoughts about the path forward. First, he agreed with the “integrated view,” the notion that multiple developments are needed simultaneously: continued declines in child mortality, improvements in literacy among girls and women, increases in the number of adults who desire small family sizes, and increasing availability of effective family planning services. Those developments will require energetic, comprehensive, and sustained efforts, he noted. Efforts vigorously pursued in one decade and then allowed to languish are not effective, he explained. It is not clear, however, whether the “top-down” model that proved effective in many Asian countries or the more “bottom-up” approach of many Latin American countries is right for the sub-Saharan region, he noted. Most likely a hybrid of the two—impetus from the leadership together with grassroots and private sector efforts—may be the best model for African countries, he added. His parting message was that it is possible to intervene to change demographic trends with some degree of effectiveness, while still respecting human rights.

DONOR PERSPECTIVES

Three individuals who represent donors shared their perspectives on the issues. First, Sahlu Haile of the David and Lucile Packard Foundation described what the foundation has done to promote reproductive health and some of the lessons he draws from that experience. He is “very upbeat” about Eastern Africa, he began, despite the many problems the workshop presentations highlighted. Half a century after efforts

to promote family planning began in the region, he said, the situation is changing for the better, and there are valuable lessons to be learned from the major successes. A close look at Nigeria, for example, reveals variation across the country. Contraceptive use has increased considerably in some regions of the country, and fertility rates have declined, even though other areas still have rapidly increasing populations.

In 2008, he noted, the Packard Foundation decided to expand beyond its work in Ethiopia and Nigeria. When staff began to explore fertility rates in Kenya, which they expected to find stalled, they found from new DHS data that in fact the decline had not stalled: fertility had declined to 3.9 births per woman. Efforts continue in that country, but the foundation then turned its attention to promoting family planning through a focus on the demographic dividend in Kenya. Haile suggested that this experience demonstrated the importance of focusing on what would be of most interest not to the international reproductive health community, but to national governments and local leaders. He agreed with May that many leaders are under pressure to pursue economic development and infrastructure improvements and that it is important for foundations to emphasize the ways in which the same factors that promote reductions in fertility—as well as the resulting slowing in population growth—also promote economic benefits such as industrialization and agricultural development.

He cited a transformation to the economic focus as a key factor in Ethiopia's successes and noted that other African countries have begun to move in this direction. Recent gains shown in DHS data bear out his optimism, he added. Kenya, for example, has reduced its fertility rate from 6.1 in 1990 to 3.9 today. Haile said many countries in Southern Africa have shown such progress, though there is variation within countries and across the continent.

Tim Evans of the World Bank described the work of the Bank's Health, Nutrition, and Population Global Practice, noting that the Bank views demography as central to development—to reducing poverty, improving equity, and promoting economic growth. The World Bank has articulated ambitious goals for ending extreme poverty and promoting shared prosperity among the poorest 40 percent of the world's population, to be achieved by 2030. Health and population issues are an integral part of this agenda. Work on these two issues is complemented by programs focused on related topics, such as nutrition, health financing and delivery, and harnessing the private sector to support development.

The countries of Africa are at different stages in their demographic transition, as earlier presentations amply demonstrated, Evans commented. Figure 5-1 illustrates the distribution across countries of total fertility rates and life expectancy rates, and highlights the need for varied and flexible policy solutions, Evans explained. The lower-income nations

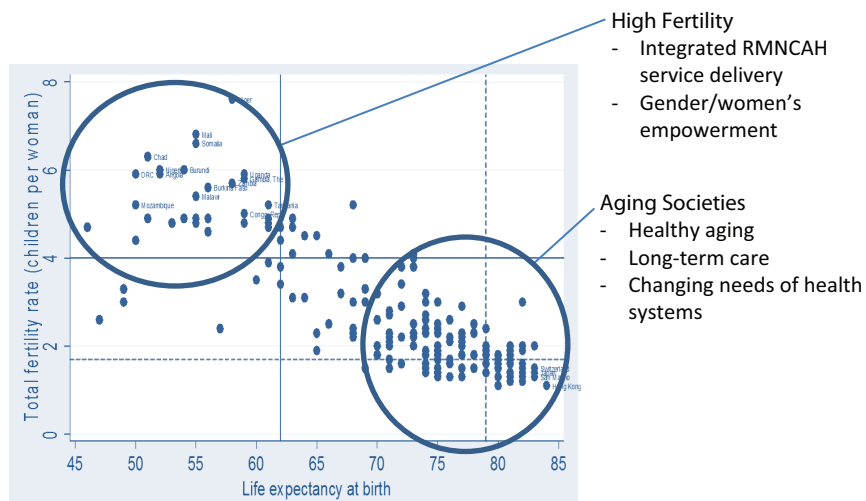


FIGURE 5-1 Total fertility rates and life expectancy for high- and low-income nations, 2013.

NOTE: RMNCAH = Reproductive, Maternal, Newborn Child and Adolescent Health.

SOURCE: Evans (2015). Data from World Bank World Development Indicators 2015.

tend to fall in the upper left quadrant (higher fertility rates and lower life expectancy), while higher income nations tend to fall in the lower right quadrant (lower fertility rates and higher life expectancy). The Bank's four main objectives related to reproductive health take this into account; they address supply and demand, as well as policy and measurement. The goals are to:

1. Improve access to and quality of reproductive, maternal, neonatal, child, and adolescent health services.
2. Increase women's empowerment through girls' education, life skills training for out-of-school girls and vulnerable women, and communication about social and behavioral change.
3. Advise client countries of the benefits of accelerating fertility declines for human development and economic dividends—in comparison with the costs of inaction.
4. Strengthen national civil registration and vital statistics systems in order to implement universal health coverage programs effectively and efficiently.

The emphasis the Bank places on these objectives is reflected in a dramatic increase in lending for health, nutrition, and population programs and for reproductive health programs since 2010, as shown in Figure 5-2. Thirty countries in the sub-Saharan region currently receive World Bank support for reproductive health. The Bank has directed \$2 billion in lending to African countries because it has recognized that funding that is substantial but falls short of the actual cost of a program is not likely to yield the desired results. At the same time, he added, the Bank is a minority financier, and its role as an institution is to bring together the necessary funding sources, including government and private-sector sources as well as other development partners, so that valuable programs have the resources they need to succeed.

The World Bank also has a growing analytic program whose mission is to help bridge the gap between research and policy documents and

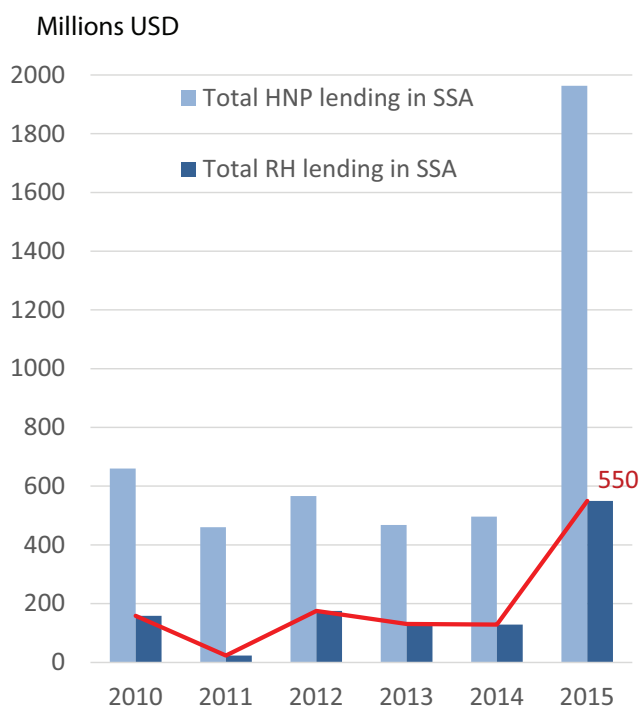


FIGURE 5-2 World Bank lending for programs related to health, nutrition, and population (HNP), and reproductive health (RH).

SOURCE: Evans (2015).

effective implementation.² Evans explained that the Bank is developing a formal approach to evaluating the work it funds to ensure that the strongest tools are used for diagnosing need, assessing the effectiveness of interventions, identifying optimal means of implementation, and conducting program evaluation.

One example that illustrates the approaches that Evans described is a six-country initiative to expedite the fertility transition in the Sahel.³ The World Bank has approved \$205 million in financing for the Sahel Women's Empowerment and Demographic Dividend project, which has two objectives:

1. Increase women's and adolescent girls' empowerment and access to high-quality reproductive, child, and maternal health and nutrition services; and
2. Improve regional knowledge generation and sharing as well as regional capacity and coordination.

Evans explained that the program applies three strategies: increasing the demand for reproductive health products and services, strengthening the capacity to supply products and personnel in rural areas, and strengthening the capacity and accountability of policy makers.

A second example is the World Bank's support of a program called Every Woman Every Child, an initiative launched by United Nations (U.N.) Secretary General Ban Ki-Moon in 2010 to mobilize governments, the private sector, and others to address the health of women and children worldwide.⁴ In collaboration with the U.N., several nations, and other partners, the World Bank will collectively provide \$12 billion in funding for investment plans to promote the health of women and children in Democratic Republic of the Congo, Ethiopia, Kenya, and Tanzania. The aim, Evans said, is to ensure that the funds are invested wisely in programs that can be fully funded and sustained long term. The hope is that these investments will catalyze other investment and development.

To conclude, Evans explained that the World Bank intends to sus-

²Evans noted that examples of this work include *The Demographic Transition in Africa: Dividend or Disaster* (sub-Saharan region); *Population and Development in the Sahel* (8 countries); *Demographic Change, HIV/AIDS and Jobs in Southern Africa* (5 countries); *The Demographic Transition in Mozambique*; *Adolescent SRH, Life Skills, Education and Job Skills in Zambia and Malawi*; and *Monitoring for Maternal and Reproductive Health Results: What Human Rights Can Offer*.

³The Sahel is a semi-arid horizontal zone of Africa that lies between the Sahara desert and the savannah climate to its south.

⁴See <http://www.everywomaneverychild.org/about/what-is-every-woman-every-child> [August 2015].

tain its focus on reproductive health and scale up its efforts to additional countries. In particular it will focus on “turning knowledge into action,” he added. It hopes to strengthen coordination and partnerships with local resources, to engage more effectively with the private sector, and to continue to anticipate such evolving developments as increasing urbanization.

Ellen Starbird of the U.S. Agency for International Development (USAID) described that agency’s work related to fertility and population growth. A primary USAID goal, she explained, is to end extreme poverty. Addressing high levels of fertility and population growth is key to economic growth, she noted, in part because of the cost of providing social services (e.g., health care and education) and social amenities (e.g., electricity and water) to rapidly growing populations.

However, although reducing population growth is important, USAID focuses not on reducing fertility rates but on meeting unmet demand for contraception and promoting informed choice, she said. The agency’s view is that the contraceptive prevalence rate is a key determinant of fertility and that effective family planning prevents unintended pregnancies, reduces abortion rates, and helps women achieve the spacing of births that they desire. Accordingly, the key indicators USAID tracks are

- modern contraceptive rate,
- unmet need or percentage of demand for contraceptives that is satisfied,
- birth spacing (proportion spaced at least two years apart), and
- birth rate among adolescents.

USAID uses a model to track growth along the indicators, Starbird said. Once a country reaches a fertility level of 3 births per woman and a contraceptive prevalence rate of 50 percent, the agency begins graduation planning, which can take as long as 10 years, to ensure that the systems are in place to sustain the progress. USAID classifies countries into four groups, she added: those where change is happening quickly, those that are encouraging change, those where change is slow, and those where no change—or even backwards movement—is evident. USAID has identified 24 priority countries where unmet need as well as fertility rates and maternal and child mortality are high. An additional 14 countries receive some support (9 through membership in a family planning partnership, the Ouagadougou Partnership⁵), and 24 countries have graduated from USAID support because of progress made. The countries are listed in

⁵See <http://www.prb.org/Publications/Reports/2012/ouagadougou-partnership-en.aspx> [August 2015].

Box 5-1. Figures 5-3 and 5-4 show how the priority countries fared for two indicators, modern contraceptive use and met demand for family planning, between the two most recent DHS.

USAID also identified a single indicator that would provide a useful snapshot of progress: the rate at which the demand for modern contraceptives is satisfied. That indicator measures the proportion of women who want to avoid pregnancy who are using modern contraception to do that. One advantage of this indicator, Starbird explained, is that it allows

BOX 5-1
Countries Supported or Assisted by USAID,
or Graduated from Support

Priority Countries

Afghanistan
Bangladesh
Democratic Republic of the Congo
Ethiopia
Ghana
Haiti
India
Kenya
Liberia
Madagascar
Malawi
Mali
Mozambique
Nepal
Nigeria
Pakistan
Philippines
Rwanda
Senegal
South Sudan
Tanzania
Uganda
Yemen
Zambia

Other Countries that Receive Assistance or Support

Angola
Benin
Burkina Faso
Cambodia
Côte d'Ivoire
Guinea
Mauritania
Niger
Timor Leste
Togo
Ukraine
Zimbabwe

Graduated Countries

Dominican Republic
Ecuador
Egypt
El Salvador
Honduras
Indonesia
Jamaica
Nicaragua
Paraguay
Peru
Russia
South Africa

SOURCE: Starbird (2015).

Rapid Progress (≥ 1.0)		Encouraging Progress (0.5 to < 1.0)	Slow Progress (> 0 to < 0.5)	Stagnant/ Getting worse
Rwanda	Liberia	Haiti	Mauritania*	Mozambique
Kenya	Togo*	Burkina Faso*	Ghana	Guinea*
Malawi	Tanzania	India	Benin*	Nepal
Madagascar	Niger*	Pakistan	DR Congo	
Ethiopia	Bangladesh	Philippines	Afghanistan	
Zambia		Côte d'Ivoire*	Nigeria	
Senegal*		Yemen		
Uganda		Mali*		

FIGURE 5-3 Progress of USAID priority countries in modern contraceptive use.

*Indicates Ouagadougou Partnership countries.

NOTES: Trend data were not available for Afghanistan and South Sudan. Rates of change are calculated from the last two survey data points from the Demographic and Health Surveys, Multiple Indicator Cluster Surveys, Reproductive Health Surveys, and Performance Monitoring and Accountability 2020 Surveys. This analysis is based on the 24 USAID's Office of Population and Reproductive Health priority countries and the Ouagadougou Partnership countries and data from January 2015.

SOURCE: Starbird (2015).

USAID to track countries' progress from wherever they began, rather than establishing a fixed rate they should meet. Modern contraceptive prevalence is important because it is the most effective means of preventing pregnancy, she explained. There has been a general increase in met demand, and in the prevalence of modern contraceptive use, she noted.

USAID's portfolio includes projects that address all essential elements of effective family planning, in Starbird's view, and the agency uses what it learns from these programs and from the indicators it tracks to identify problems, engage policy makers, and scale up practices that prove effective.

National Academies of Sciences, Engineering, and Medicine staff member Tom Plewes offered a few comments on the work of the Bill & Melinda Gates Foundation on behalf of panelist Win Brown, an official of the foundation, who was unable to attend the workshop. The foundation has a deep commitment to fertility and population issues, Plewes reported. It has focused in particular on using the tools of demographic analysis, the importance of the demographic dividend, and the relation-

Rapid Progress (≥ 2)	Encouraging Progress (≥ 1 to < 2)	Slow Progress (> 0 to < 1)	Stagnant/ Getting worse
Rwanda	Togo*	Ghana	Mauritania*
Niger	Mali*	Benin*	Yemen
Senegal*	Haiti	Nigeria	Guinea
Kenya	Zambia	DR Congo	Nepal
Madagascar	Pakistan	India	Mozambique
Ethiopia	Côte d'Ivoire*		
Liberia	Bangladesh		
Burkina Faso*	Tanzania		
Malawi	Philippines		
Uganda			

FIGURE 5-4 Progress of USAID priority countries in meeting demand for family planning.

*Indicates Ouagadougou Partnership countries.

NOTE: Rates of change are calculated from the last two survey data points from the Demographic and Health Surveys, Multiple Indicator Cluster Surveys, and Reproductive Health Surveys. This analysis is based on the 24 USAID's Office of Population and Reproductive Health priority countries and the Ouagadougou Partnership countries and data from January 2015.

SOURCE: Starbird (2015).

ship between family planning and population growth. The foundation has also been very supportive of international population goals. It aims to provide services to 120 million more women and girls by 2020 and to increase its focus on communicating what works around the world.

SCIENTIFIC PERSPECTIVES

The final discussion was an opportunity to hear scientific perspectives on stalled fertility declines in the sub-Saharan region.

Julia DaVanzo of the RAND Corporation brought the perspective of a nonspecialist in fertility issues in Africa. She outlined the research opportunities discussed at the workshop that seemed most promising to her:

- *Examine the success stories.* The presentations clearly identified many examples of places and approaches that have been effective in reducing fertility rates, DaVanzo noted, but more could be done to identify the factors that contributed to those successes and

how they might apply elsewhere. Regions that have low reported contraceptive usage rates but still sustain fertility declines, for example, may have lessons for others. To benefit from those lessons, she said, it is important to understand whether the apparent discrepancy is the result of under-reporting of contraceptive use, use of traditional methods or emergency contraceptives or abortion, or other factors.

- *Explore the diversity of the region.* Cross-country studies are helpful, she added, but the sub-Saharan countries vary dramatically in size, so weighting some of the analyses to avoid over-generalizing from small and possibly anomalous populations, would be useful. More disaggregation of data will also be important in helping to parse out differences across the region, she added. Examining sub-regions systematically and assessing the extent to which lessons learned in one place apply to another would also be useful.
- *Explore the extent to which fertility declines have stalled.* The presentations suggest stalls in some places and not others, DaVanzo noted, and she added that the definition of a stall is not entirely precise. She suggested that this is another reason to look even more closely at the variation across the region and at the role of factors, such as breastfeeding and traditional methods of contraception, men's attitudes about fertility, and preventable contraceptive failure, which may vary significantly from place to place.
- *Address difficulties in collecting needed data.* Presenters noted problems with data collection and quality in many areas, DaVanzo said. Improvements in data quality and the measurement of important factors, such as fertility desires, preferences, and norms, will aid researchers and policy makers. Qualitative methods could be valuable in filling some of the gaps, she added, and in filling in the picture of differences across age spans and other dimensions.
- *Take a more careful look at the role of recent economic and other developments.* More systematic understanding of changes in spending levels and funding and governing structures, and other non-demographic factors, could help to illuminate some of the reasons why sub-Saharan African countries have had different experiences and trajectories than developing countries in other regions. Better data on policies and spending and how they relate to demographic developments in the region will be useful, she said. Economic issues, such as employment prospects for women—and how compatible the jobs accessible to women are with pregnancy

and childbearing—may shed light on changing patterns of contraceptive use and fertility, for example, DaVanzo noted.

Alex Ezeh of the African Population and Health Research Center referred to an earlier discussion of the issue of African exceptionalism with respect to the fertility stall. He noted that there is not a clear threshold rate of change in fertility over time that marks a country as experiencing a stall. Much of the evidence supporting the idea that fertility declines have stalled in much of the sub-Saharan region comes from DHS, he noted, but data for many individual countries and regions show that fertility has continued to decline since the mid-1990s. “What is incontrovertible is that the pace of decline has been painfully slow” for many African countries he added, but he distinguished between a slow pace and a stall, noting that the program and policy implications may be different for the two circumstances.

Ezeh highlighted issues raised by the slow pace of fertility decline. Fertility rates have a direct relationship to population projections, he noted: A change of even 0.5 or 1.0 children per woman will have a very large effect on long-term population projections. The slow pace limits possibilities for a demographic dividend in the region. The sub-Saharan region’s population will continue growing, given the current pace of fertility declines, until after 2100, he explained, so the advantageous peak in dependency ratio necessary for a dividend will not occur.

The drivers of high fertility in the region need greater attention, in Ezeh’s view. In particular, he noted, early childbearing has not been effectively addressed by programs or policies. Ethiopia, which addressed the problem by raising the legal age for marriage, is an exception, but other countries need to address the cultural reasons why girls tend to marry and bear children so young. Raising the average age at first birth from 15 to 20 could translate into a 25 percent smaller population in 60 years, he suggested.

With these issues as a backdrop, Ezeh concluded with a few more general observations. Projections indicate that there will be 2 billion people in the sub-Saharan region by 2050, maybe as many as 4.5 billion by 2100, he noted. The question is, he wondered, “why is this a problem?” Earlier presenters had noted that many parts of the region are not densely populated and that some leaders and others view increasing populations as a positive development. For Ezeh, the problem is not the numbers themselves but the quality of life. The slow pace of decline will affect many other aspects of life, including the quality of access to and quality of education, health care, and employment opportunities for generations to come. The capacity of countries to invest in the infrastructure and services

that people need—in dense urban areas as well as rural ones—is stretched by population growth, he observed. Using this lens to focus attention on the risks of rapid growth may be more effective than focusing just on population levels. Increasingly, he added, the sub-Saharan region will contribute to the global workforce. This means that the rest of the world has an interest in whether African countries have the resources to train this global workforce.

Ezeh also agreed with many previous speakers in highlighting the importance of attention to the diversity within regions and within countries in sub-Saharan Africa. While some issues are shared across the region, many others are specific to certain areas. In many cases, researchers and policy makers do not have adequate evidence to understand the obstacles to service delivery, he noted.

Finally, Ezeh observed, “many times we start well but we don’t see it through.” Funders that have supported many programs in the region often shift their priorities over time, he explained, which has made it difficult for many countries to sustain the traction those funders’ programs had generated. Much of the fertility-related programming is funded externally, he noted, but it is not always coordinated to a degree that will ensure that “investments being made today yield intended results 20 years down the road.”

James Phillips of Columbia University focused on the role of programs and whether they have contributed to stalls in fertility decline in the region. To address this question, he drew on theories that have been proposed for how programs work to develop a model for “programmatically transition.” By this he meant the pathway that the effective implementation of a program should follow in bringing about change, for example by making services more accessible and convenient and better meeting the needs of the target population; this idea is illustrated in Figure 5-5.

Phillips conducted a “bibliometric review” of approximately 20,000 articles about family planning and reproductive health published between 1994 and 2014 to assess the state of the research base. He used the Scopus database of peer-reviewed research literature⁶ to search for a set of 10 keywords associated with fertility rates. He plotted the results in a graphic that converted the data into pixels to show the density of coverage of these key topics; see Figure 5-6. The topics on the edges were those less well represented or investigated, but Phillips also identified what he called “black holes,” or topics that he expected would be well represented, but were not. He also identified some changes across the 20-year span, including that research on unintended pregnancy and fertility, abortion, and legal issues had become increasingly peripheral.

⁶See <http://www.elsevier.com/solutions/scopus> [August 2015].

What is “Programmatic Transition”?

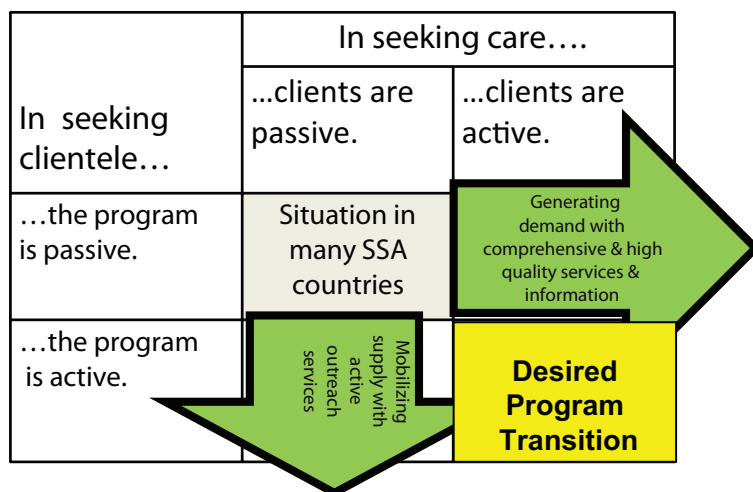


FIGURE 5-5 Model of how fertility programs bring about change.
 SOURCE: Phillips (2015). This work was supported by Grants to Columbia University by the Doris Duke Charitable Foundation Africa Health Initiative.

Phillips drew a few conclusions from additional analyses, noting, for example, that the research tended not to explore links between programmatic and policy indicators and topics such as adolescence, and that HIV research was separate from and peripheral to programmatic research related to family planning. HIV has grown from a peripheral topic to one that is closely linked with reproductive health, though not to family planning. He had expected to see an increasing focus on human rights and on programs and policies, but he did not find that.

Phillips also reported that investment in family planning programs has deteriorated in comparison with other health investments in sub-Saharan Africa during the time he examined. For example, family planning accounts for less than 3 percent of total health expenditures in four sub-Saharan countries: Benin (0.2 percent), Burkina Faso (1.1 percent), Liberia (2.3 percent), and Tanzania (0.9 percent).

Phillips expressed concern that the region may be drifting away from investment and programmatic research. Programmatic learning may be stalling, he suggested, because research has become less focused on family planning program implementation and systems issues, and less connected

demographic dividend. In particular, he noted, arguments focusing on the potential benefits of combining a focus on family planning with other aspects of a long-term growth and development agenda, such as those noted in many Asian countries, will be more useful to leaders of African countries than a focus on the negative consequences of growing populations. In Uganda, for example, Zulu explained, there is nothing that can be done to prevent the country from reaching a population of at least 80 million. He argued that instead of focusing on population growth as a dire outcome, leaders should work on ways to make sure this population is the source of human capital with the skills and knowledge to help the country develop.

Zulu acknowledged that the sub-Saharan region faces unique challenges in trying to follow the long-term development pathways that have been successful in Asia and elsewhere. Compared with other regions, sub-Saharan Africa was the furthest behind in terms of education, child mortality, teen pregnancy and marriage, and other factors as its countries began the fertility transition, Zulu noted. There is economic growth, but it is not benefiting all sectors of the population in many countries. “The big elephant in the room,” he suggested, is the question of whether the region’s countries will be able to transform their economies to provide the growth that their growing populations will require.

The answer, in his view, lies in governance. There is a need, he suggested, for governments to strengthen accountability, reduce corruption, and improve efficiency. Policy makers, in his experience, are beginning to ask useful questions about what they can do to adapt and intervene, and what the best targets for investment are. He charged the group to continue thinking about the best kinds of evidence to put before the leaders to support progress in family planning and its role in economic development.

Jotham Musinguzi of Partners in Population and Development provided closing thoughts about the panel discussions. Leaders, he noted, are increasingly focused on regional integration and on providing and improving infrastructure to reduce the cost of doing business and to create jobs. Many leaders approach donors with requests for help with infrastructure that will provide jobs and make it easier to do business in the region, but they have paid less attention to population issues. In his view, the advocacy and data provided by donors are very important in helping to persuade leaders of the importance of population issues. He expressed the concern that despite the many gains that have been made in reducing fertility and slowing population growth, “we could still lose out if we don’t continue with sustained advocacy, using opportunities like linking African development with the democratic dividend concept, as the Asian tigers did.”

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Appendix A

Workshop Agenda

**National Research Council Committee on Population
Workshop on Recent Trends in Fertility in Sub-Saharan Africa
June 15-16, 2015**

**National Academy of Sciences Building
2101 Constitution Avenue, NW, Room 120
Washington, DC**

Day 1, June 15

Time	Topic	Participants
	Breakfast available at 8:30	
9:00–9:30	Welcome, introductions, and workshop overview	Peter Donaldson and Tom Plewes
	Session 1: 9:30–10:45 Trends in Fertility in sub-Saharan Africa	Jacob Adetunji, Chair and Discussant
9:30–10:00	Africa’s unique fertility transition	John Bongaarts
10:00–10:30	Fertility decline patterns and scenarios of future fertility change in sub-Saharan Africa	Ann Biddlecom, Patrick Gerland, and Vladimira Kantorova
10:30–10:45	Discussion	Jacob Adetunji

	Session 2: 10:45 a.m.– 1:00 p.m.	Jean-François Kobiané, Chair and Discussant
	The Consequences of African Fertility Trends	
10:45–11:15	Problems posed by a slow fertility decline and continued population growth in sub-Saharan Africa	John Cleland and Kazuyo Machiyama
11:15–11:40	Morning break	
11:40–12:10	Opportunities arising from demographic changes in sub-Saharan Africa	David Lam and Murray Leibbrandt
12:10–12:40	A simulation model of the effect of family reduction on economic growth in sub-Saharan Africa	David Canning, Mahesh Karra, and Joshua Wild
12:40–1:00	Discussion	Jean-François Kobiané
	Lunch: 1:00–2:00	
	Session 3: 2:00–5:30	Cheikh Mbacké, Chair and Discussant
	Trends in Reproductive Behavior in Africa	
2:00–2:30	Fertility desires and the course of fertility decline in sub-Saharan Africa	John Casterline and Samuel Agyei-Mensah
2:30–3:00	Childbearing patterns: the importance of birth spacing and postponement	Ian Timaeus and Tom Moultrie
3:00–3:30	Trends in age at marriage and fertility	Véronique Hertrich
3:30–3:50	Afternoon break	
3:50–4:20	Socioeconomic trends and their impact on fertility	Parfait Eloundou-Enyegue

4:20–4:40	Fertility transitions in Kenya and Ghana: trends, determinants and implications for policy and programs	Ian Askew, Maggwa Baker Ndugga, and Francis Onyango
4:40–5:00	Discussion	Cheikh Mbacké
5:00–5:30	Day one wrap-up and implications	Peter Donaldson and Tom Plewes
5:30–6:30	Reception West Court National Academy of Sciences	
6:30	Dinner for Invited Participants and Guests Members Room National Academy of Sciences	Robert Hauser, Host

Day 2, June 16

	Session 4: 9:00 a.m.–12:00 p.m. The Effects of Contraceptive Practice Breakfast available at 8:30	Ndola Prata, Chair and Discussant
9:00–9:30	The impact of contraceptive use and abortion on fertility in Africa: Estimates for 2003-2014	Susheela Singh, Akin Bankole, and Jacqueline E. Darroch
9:30–10:00	The role of traditional methods in family planning in Africa	Clémentine Rossier and Jamaica Corker
10:00–10:30	Contraceptive preferences and practices	Amy Tsui, Win Brown, and Qingfeng Li
10:30–10:55	Morning break	

10:55–11:30	Urbanization, slum populations, unmet need, and family planning among the urban poor	Donatien Beguy, Blessing Mberu, and Alex Ezeh
11:30–12:00	Discussion	Ndola Prata
	Lunch: 12:00–1:00	
	Session 5: 1:00–4:30 Policy Options and Opportunities	Jotham Musinguzi, Chair and Discussant
1:00–1:30	Politics of population and family planning policies and programs	John May
1:30–2:00	Panel: Donor perspectives on stalled fertility and its implications in sub-Saharan Africa	Win Brown, Sahlu Haile, Jane Edmondson (invited), Tim Evans, and Ellen Starbird
2:00–3:15	Afternoon break	
3:15–4:05	Panel: Scientific perspectives on stalled fertility and its implications in sub-Saharan Africa	Julie DaVanzo, Alex Ezeh, James Phillips, and Eliya Zulu
4:05–4:30	Workshop wrap-up: Dissemination and publication plans	Peter Donaldson and Tom Plewes

Appendix B

Workshop Participants List

Jacob Adetunji	Margareta N. Harrit
Samuel Agyei-Mensah	Rifat Hasan
Akin Bankole	Robert Hauser
Alix Beatty	Véronique Hertrich
Donatien Beguy (via Skype)	Mahesh Karra
Ann Biddlecom	Kristina Kastler
Kristin Bietsch	Kevin Kinsella
Alison Bodenheimer	Jean-François Kobiané
John Bongaarts	Kavitha Krishnan
Jason Bremner	David Lam
David Canning	Tina M. Latimer
John Casterline	Marlene Lee
Yoonjoung Choi	Christophe Lemiere
John Cleland	Qingfeng Li
Julie DaVanzo	Landis MacKellar
Peter Donaldson	John May
Parfait M. Eloundou-Enyegue	Cheikh Mbacké
Tim Evans	Tyler McCormick
Alex Ezeh	Geoff McNicoll
Rachel Friedman	Scott Moreland
Sarah Garver	Jotham Musinguzi
Mary Ghitelman	Maggwa Baker Ndugga
Michele Gragnolati	Crystal Lee Perez
Sahlu Haile	James Phillips
Reid Hamel	Thomas J. Plewes

Ndola Prata
Stephanie Psaki
Sangeeta Raja
Susan Rich
Clémentine Rossier

Ellen Starbird
Ian Timaeus
Amy Tsui
Linnea Zimmerman
Eliya Zulu

Appendix C

Biographical Sketches of Steering Committee Members

Peter J. Donaldson (*Chair*) is past president of the Population Council. Prior to this position, he served as the chief executive officer of the Washington, DC-based Population Reference Bureau and as director of the Committee on Population of the National Research Council. He was a Population Council staff associate in Thailand and a representative in South Korea. He has also worked at the Council as a senior associate and regional director for South and East Asia, located in Thailand. He has written or edited books and articles for both scientific and popular publications on population, development, and Asian affairs. He has a Ph.D. in sociology from Brown University.

John Bongaarts is a vice president and distinguished scholar at the Population Council. His research is on critical demographic challenges such as population momentum, the determinants of fertility, the impact of family planning programs, population–environment relationships, and the demographic effects of the AIDS epidemic. Bongaarts chairs the Council’s Institutional Review Board and the editorial committee of the Council’s journal, *Studies in Family Planning*. He is a member of the editorial committee of the Council’s other journal, *Population and Development Review*. He holds a master’s degree in systems engineering from the Eindhoven Institute of Technology, Netherlands, and a Ph.D. in physiology and biomedical engineering from the University of Illinois.

John G. Cleland is professor of medical demography at the London School of Hygiene and Tropical Medicine. He has long-standing interests in fertility, family planning, and child survival in developing countries and has published widely on these subjects. He assisted the Global Programme on AIDS at the World Health Organization (WHO) in the design and analysis of surveys on sexual behavior and co-edited a book, *Sexual Behaviour and AIDS in the Developing World*, on the main results. Another recent book is on *The Determinants of Reproductive Change in Bangladesh*. Cleland serves on committees of the WHO's Department of Reproductive Health and Research and of the International Union for the Scientific Study of Population. He has an M.A. in economics and sociology from Cambridge University.

Julie DaVanzo is an economic demographer affiliated with the RAND Corporation as senior economist, and now as adjunct staff. She directed several postdoctoral training programs and the Population Matters project, which seeks to communicate the policy-relevant results of population research to policy makers, the media, and general audiences. Her current research focuses on reproductive health issues in Bangladesh. She has taught at the University of California, Los Angeles (UCLA) and the University of California, Irvine, and has been a visiting fellow at the Australian National University and at the University of Bologna. She holds a Ph.D. in economics from UCLA.

Parfait Eloundou-Enyegue is associate professor in the Department of Development Sociology and associate director of the Cornell Population Center at Cornell University. His research focuses on the effects of demographic transitions, global inequality, schooling processes, and socioeconomic change in sub-Saharan Africa. With support from the Spencer Foundation, he has recently completed a national longitudinal study of 3,500 Cameroon households; and the resulting data will be used to test competing and new ideas about the impacts of demographic transitions on socioeconomic change. He is a member of the board of directors at the Guttmacher Institute and the Population Reference Bureau. Before joining Cornell, he was at the RAND Corporation.

Alex Ezeh is director of the African Population and Health Research Center (APHRC) in Kenya. Prior to joining APHRC in 2000, he worked at Macro International as an expert in developing national demographic and health surveys. He has more than 25 years of experience working in the population and public health fields and has authored scientific publications covering a broad range of fields, including population and reproductive health, urban health, health metrics, and education. He also

currently serves on the boards and committees of several international public health organizations. He has a Ph.D. in demography from the University of Pennsylvania.

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