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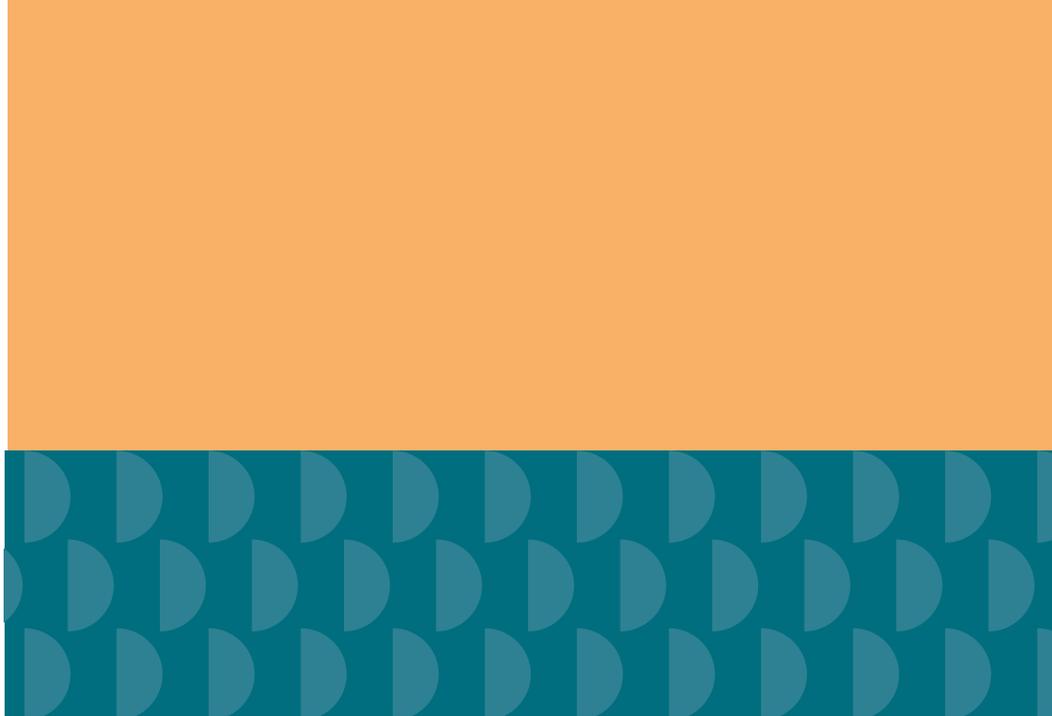
Completing the Demographic Transition in Developing Countries

Harry Cross
Karen Hardee
John Ross

August 2002



POLICY



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POLICY Occasional Papers are intended to promote policy dialogue on family planning, reproductive health, and HIV/AIDS issues and to present timely analysis of issues that will inform policy decision making. The papers are disseminated to a variety of audiences worldwide, including public and private sector decision makers, technical advisors, researchers, and representatives of donor organizations. An up-to-date listing of POLICY publications is available on the web at www.policyproject.com. Copies of these publications are available at no charge.

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Executive Summary

The transition to low fertility in much of the developing world is incomplete. To leave it half-finished or to slow its pace would have enormous demographic, programmatic, and foreign assistance implications. Despite considerable progress over the last 35 years, much remains to be done to complete the demographic transition. The world's population has not stopped growing, and it is growing fastest in the poorest countries. To achieve sustainable development, strong measures by governments and donor organizations to promote fertility decline in developing countries—and to give individuals and couples the means to do so—need to continue for the foreseeable future.

This paper reviews the status of the demographic transition worldwide, discusses factors associated with fertility decline, and highlights challenges associated with completing the transition in developing countries. It is intended to

help policymakers both here and abroad to better understand the need for continued efforts to reduce fertility and population growth rates, even in the wake of the HIV/AIDS epidemic.

A reduction in population growth to sustainable levels is not something that will just occur on its own. Completing the demographic transition requires addressing a number of challenges—and first and foremost is maintaining strong support for family planning programs from governments and donor organizations. Sustaining the demographic transition also requires focused attention on other proximate, or direct, determinants of fertility, such as increasing the age at marriage and reducing abortion. In addition, donors and governments have an important role to play in providing continued support for policies that indirectly affect fertility, such as promoting girls' education and safe motherhood.



Introduction

Fertility has declined among women in many parts of the world, prompting some to argue that population growth is no longer a matter for international concern¹ or foreign assistance funding. Despite the average worldwide fall in fertility, many countries have yet to complete the demographic transition. The demographic transition theory posits that, over time, countries progress from high fertility and high mortality to low fertility and low mortality in four stages. Stages one and four are both characterized by low population growth, the first due to high fertility and mortality, and the latter due to low fertility and mortality. During the middle stages, mortality falls before fertility, resulting in rapid population growth. Countries have experienced the transition at different times and different paces. In many developing countries today, fertility declines have not kept pace with rapid declines in mortality.

It is true that the *rate* of global population growth is slowing and that the total fertility rate (TFR), or the average number of births per woman, is declining in many countries worldwide—some to fertility below the replacement level of 2.1 children per couple (prompting debate about the ultimate floor for fertility in the demographic transition). In the developing world as a whole, the TFR has fallen from an estimated 5.7 births per

woman in 1970 to 3.0 today (3.5 if China is excluded from the analysis).² Even though the global population growth *rate* has declined slowly, the base population keeps enlarging; as a result, the annual additions to the world's population are

The demographic transition is continuing because mortality and fertility rates are falling. But the demographic transition refers to growth rates and the differences between mortality and fertility levels—not to the absolute sizes of countries or to numbers added annually.

huge. The United Nations (UN) projects that another 3 billion or more people—three times China's current population—will be added to the world's population by 2050. While the estimates of population growth are lower than those made a decade ago, and despite declining rates of population growth, the increase in population size during the next 25 years in the developing world will equal the population increase of the last 25 years, 1.85 billion people. If China is excluded from the analysis, the increase in the world's population during the next 25 years will exceed by 10 percent the comparison increase of the past 25 years.³

While the annual population growth rate worldwide has fallen from 2.7 to 1.9



percent during the last quarter-century (excluding China), the poorest nations in each developing region have young populations and are growing rapidly. The population size in the group of least developed countries in the UN projections is growing at nearly double the annual rate of the other developing countries (2.5 percent per year for the least developed countries compared with 1.3 percent per year for other developing countries).⁴

According to the demographer John C. Caldwell, writing for the 2002 UN Expert Group Meeting on Completing the Fertility Transition, whether the world's population peaks in 2050 at nine or 12 billion has vast implications:

“With regard to the long-term stability of the world’s ecosystems and our ability to feed everyone adequately and to give them a reasonably good life, that margin of 3 or 4 billion extra people may be critical. We may well be able to achieve these aims with 12 billion people, but we are much more certain of being able to do so with 9 billion, and risking the additional 3 billion does not seem to be a worthwhile experiment.”⁵

The fertility transition in much of the developing world is only half-finished. To leave it half-finished or to slow its pace would have enormous demographic, programmatic, and foreign assistance implications.

The ultimate size of the world's population has implications for the well-being of the earth's inhabitants. The

National Research Council Board on Sustainable Development noted in 2001, “A transition is underway to a world in which human populations are more crowded, more consuming, more connected, and in many parts, more diverse, than at any time in history.” Most of the growth from six billion today to a world of nine or 10 billion people in 2050 will take place in developing countries “...where the need to reduce poverty without harming the environment will be particularly acute... If they do persist, many human needs will not be met, life support systems will be dangerously degraded, and the numbers of hungry and poor will increase.”⁶ Furthermore, according to Edward O. Wilson, “...certain current trends of population and habitation, wealth and consumption, technology and work, connectedness and diversity, and environmental change are likely to persist well into the coming century and could significantly undermine the prospects for sustainability.”⁷ Some countries in the developing world will achieve their development goals, while others will fail to do so—in part due to demographic pressure.

The fertility transition in much of the developing world is only half-finished. To leave it half-finished or to slow its pace would have enormous demographic, programmatic, and foreign assistance implications. This paper reviews the status of the demographic transition, explores factors associated with fertility decline, and concludes by discussing the remaining urgent challenges that governments and donors face in promoting completion of the demographic transition.



The Uneven Decline in Fertility

On average, fertility has declined in developing countries. However, decline has taken place at different rates—even within the same country. In India, fertility is near replacement level (defined as 2.1 children per couple)⁸ in many southern states but remains at levels resembling those of sub-Saharan Africa in northern states—close to five children per woman. Fertility in Egypt is near replacement level in many urban and northern areas but remains high in the south.

In many countries, the fertility transition has hardly started. In those countries, mortality rates may have started their decline years ago. Fertility, however, is still approximately five children per woman or more in most of west, central, and east Africa. TFR exceeds five children in several of the world's most populous countries, such as Pakistan (5.3), Nigeria (5.9), and Ethiopia (6.7).⁹

Although the onset of fertility decline started in several sub-Saharan African countries during the 1990s, the magnitude, pace, and durability of the declines are yet not well established. In addition, the fertility transition has not even started in 14 countries in the region (i.e., in one of three countries).¹⁰

The fertility transition in Kenya may take another 30 years. Even in Kenya, which has

experienced a decline in fertility in recent years, the fertility transition may take another 30 years. With a modern contraceptive prevalence rate slightly over 30 percent and a fertility rate that has been dropping for two decades, Kenya has begun the fertility transition. However, in Kenya, as in other sub-Saharan African countries, opportunities abound to accelerate the process of fertility transition.¹¹

While the TFR in many countries is falling, time counts. That is, the slower the decline in TFR, the higher the ultimate population size when the world's population ultimately stops growing.

The fertility rate has also begun to reach a plateau in some countries that had until recently experienced a more rapid decline in fertility. In Bangladesh, the TFR stagnated above three during the 1990s. Similarly, the fertility decline has apparently stalled in Egypt and the Philippines, among other countries. The plateau is partly attributable to the “tempo” effect on fertility. Rapid fertility decline can occur when women delay marriage and postpone childbearing to a later age. The result is a temporary deflation in the TFR. For example, the TFR in Taiwan would

have been about 19 percent higher during one five-year period except for the tempo effect.¹² After cessation of the interim effects of delayed marriage and postponed childbearing, fertility rates can rise again. However, the factors associated with the rise in age at marriage also tend to reduce desired family sizes, which may help to offset any increase in fertility rates.

The world's populations will continue to grow in the face of AIDS. According to the UN's 2000 projections,¹³ HIV/AIDS will result in 15.5 million more deaths than would otherwise be expected in the 45 most affected countries in the next five years. However, even in a country such as Zimbabwe, the UN projections show a positive growth rate in every five-year period until 2050 (although alternative projections by the U.S. Bureau of the Census show negative growth in a few African countries).¹⁴ Moreover, most women live in countries with a low HIV/AIDS prevalence.

Worldwide, AIDS will not offset population growth. Each year, five million people tragically succumb to AIDS. At the same time, 80 million people are added to the world's population each year.

The seriousness of the AIDS problem cannot be overstated; however, it must be kept in geographic perspective for rational program planning. Only 19 percent of reproductive-age women in the developing world (outside of China) live in countries where HIV/AIDS prevalence is 1 percent

or higher.¹⁵ Most of the 46 countries with HIV/AIDS prevalence over 1 percent have small population sizes, but they account for 79 percent of all HIV/AIDS cases. Among these, the 10 countries with the highest HIV rates account for over half (56 percent) of all cases. In India, HIV/AIDS prevalence is below 1 percent, but due to its sheer population size, it accounts for 14 percent of all HIV/AIDS cases. All the other countries (with very low prevalence) claim the remaining 7 percent of cases.

Strenuous efforts must continue to be applied to HIV/AIDS while not forgetting that most countries, including countries with large HIV/AIDS epidemics, require continuing provision of family planning if fertility rates are to continue their decline. Measures are urgently needed to ensure that HIV-positive women can choose whether to have children. Access to modern methods of contraception is central to ensuring that women can make informed choices. One study in Kigali, Rwanda found that providing easy access to contraceptives resulted in a 50 percent increase in their use by HIV-positive women and a corresponding decrease in pregnancy incidence among women.¹⁶ Indeed, simply providing low-cost, accessible family planning to HIV-positive women who do not want more, or any, children can reduce the huge numbers of AIDS orphans. Furthermore, the key to safe sex is a method of contraception—the condom—and the institutional structures needed to promote control of HIV are the same as those needed to promote access to the technologies and information needed to give women control over their fertility.



What Influences Fertility Decline?

Since Malthus in the late 18th century, scholars have postulated a number of explanations for historical trends in fertility and mortality. In the last third of the 20th century, major research efforts explored the relationships between a wide variety of possible fertility determinants and their impacts on birth rates.

Distal determinants—social and economic factors. The basic theory of why couples decide to have fewer children is complex. The decision to bear fewer children requires a change in values, which in turn must be translated into changes in fertility behavior. The broadest investigations into fertility decline have focused on the possible factors that change people's values and how those factors may or may not affect fertility. Factors affecting couples' values are mostly related to socioeconomic environment and include possible determinants such as children's schooling and health status, child survival, economic conditions, urbanization, status of women, religion, socioeconomic organization, and the diffusion of ideas, among others.¹⁷

Proximate determinants. Four main factors, called proximate determinants of fertility, have a direct effect on fertility. All other factors, such as those listed above, operate through the proximate determinants to affect fertility. The four main proximate determinants are marriage (age at

marriage and proportion of women married); contraception (proportion using contraception and effectiveness of method); abortion (proportion of pregnancies that are terminated); and infecundity (lactational amenorrhoea and sterility).¹⁸

The mechanisms of how proximate determinants of fertility affect birth rates are well understood because they can be studied relatively easily in a scientifically sound manner. The evidence is global in nature and holds across all countries and peoples. Because the connection to fertility decline is so direct and the impacts are so dramatic, public policies on population (and donor programs) have focused, first, on providing information and contraceptives to couples wanting to control their fertility and, to a lesser extent, on raising the age at marriage.

Understanding how the more distal socioeconomic determinants affect couples' decisions to delay sexual debut and marriage, use contraception, breastfeed, or seek an abortion is more complex.

Economic Development and Fertility

Generally, as countries improve their economic performance, higher incomes

Table 1. Growth in Per Capita Gross Domestic Product and Decline in TFR, for Selected Countries: 1980 to 1995

| Country | GDP per capita growth in percent 1985–1995 | Percent decline in TFR 1980–1995 |
|--|--|----------------------------------|
| Bahamas | -1.0 | 43 |
| Cameroon | -7.0 | 12 |
| Côte d'Ivoire | -4.3 | 28 |
| Guatemala | 0.3 | 24 |
| Iran | 0.5 | 26 |
| Jordan | -2.8 | 29 |
| Madagascar | -2.0 | 11 |
| Mexico | 0.1 | 33 |
| Nicaragua | -5.8 | 34 |
| Peru | -1.6 | 31 |
| Senegal | -1.2 | 15 |
| Zimbabwe | -0.6 | 44 |
| Low-income countries (excluding China and India) | -1.4 | 21 |
| Lower and middle-income countries | -1.3 | 19 |

Source: Data from Soubbotina, Tatyana P. and Katherine Sheram. 2000. Beyond Economic Growth: Meeting the Challenges of Global Development. Washington, D.C.: World Bank.

translate into better education and health behaviors. As a result, costs associated with having children rise and an increasing number of couples have fewer children. Declines in mortality may or may not precede fertility declines.¹⁹ Mainly through the consideration of other variables affecting fertility, this theory has been the subject of considerable debate and revision since its introduction in the 1960s.

In Europe and the United States, where demographic transitions took place over periods of 100 years or longer, the relationship between rising incomes and decreasing fertility is clear. However, in countries in which the demographic transition has occurred over a period of just a few decades, the relationship between economic growth and fertility is much less clear. Table 1 shows some examples of recent economic growth and

fertility trends. While lower-income countries experienced significant annual declines in economic health in the 1980s and 1990s, their fertility rates still fell dramatically.

Several factors mediate the relationship between population growth and economic growth. A recent analysis found that, in the long term, countries with higher rates of population growth have tended to demonstrate lower rates of economic growth (see Box 1).²⁰

Countries that have had the “right” political, economic, social, and educational environment, such as the Asian Tigers, have been able to capitalize on their rapid demographic transitions. In those countries, the “demographic bonus” created by a shifting age structure that increased the number of workers per capita was accompanied by faster growth in gross

domestic product per capita. Other regions of the world, however, such as parts of Latin America and the rest of Asia, have not been able to capitalize on the demographic bonus to promote economic growth. For example, South Korea increased net secondary school enrollment from 38 to 84 percent between 1970 and 1990 and more than tripled expenditure per secondary school student. South America failed to take advantage of a similar opportunity to make such an investment.²¹

Child Mortality and Fertility Change

Scholars have attempted to identify a variety of other correlations to explain fertility decline. Researchers have spent considerable efforts over the past 30 years studying the relationships between mortality (especially infant and child mortality) and fertility changes. A generally accepted view holds that lower infant mortality is a contributing factor to couples' decisions to have fewer births.²² The exact nature of the relationship, however, is still not well understood, and several different views on the topic prevail.

After noting that most developing countries have experienced or are experiencing some type of simultaneous decline in mortality and fertility, Cohen, Barney, and Montgomery conclude the following:

“Their fertility declines are a product of diverse social, economic, political, and cultural changes, and are shaped as well by a response to programs and mortality change. The precise contribution of each of these factors varies from one society to another. Thus,

at the macro level, a search for a simple and universal rule linking the timing of mortality and fertility declines would seem to be futile.”

They underline the point as follows:

“...[T]here can be nothing automatic or self-sustaining about the effects of mortality decline on fertility. This diversity should also put to rest the notion that mortality decline can be linked to fertility decline by way of simple necessary or sufficient conditions. It may seem that a particular configuration of social, political, and economic forces may be required for any given country to embark on transition, but the outlines of that configuration may be difficult to discern in advance.”²³

In other words, recent research suggests that the completion of the fertility portion of demographic transition in developing countries does not depend directly on trends in infant and child mortality.

The onset of HIV/AIDS epidemics is confusing the mortality-fertility linkages,

Box 1. The Economic Consequences of Population Growth

- ▶ Rapid population growth has exercised a negative impact on the pace of economic growth in developing countries.
- ▶ Rapid fertility decline contributes to reducing the incidence and severity of poverty.
- ▶ High fertility in poor countries has been a partial cause of the persistence of poverty—poverty that affects both small and large families.



however. In some African countries, fertility has dropped rapidly while recent child mortality has jumped. In Kenya, for example, fertility declined by about 30 percent between 1989 and 1998 while child mortality jumped by 32 percent over the same period. Similar trends occurred in Zambia.²⁴

Social, Cultural, and Religious Norms

Few trends are clearly discernible in the literature on the relationship between social, cultural, and religious norms and fertility. For example, in Europe in the 17th and 18th centuries, socioeconomic norms stipulated that newly married couples had to set up their own independent households. Few couples could afford to get married at an early age. As a result, the mean age at marriage in much of Europe in the 18th century was 25 years, with 15 to 20 percent of women never marrying. In 20th-century Uttar Pradesh, India, socioeconomic norms stipulate that newlyweds immediately live with the groom's family; such an arrangement guarantees the couple shelter and provisions. An ingrained dowry system creates further pressure for early marriage and for childbearing to begin soon thereafter. As a result, the mean age at marriage for women in Uttar Pradesh is 16 years, with almost universal marriage. Early marriages, in addition to influencing TFR, lead to higher rates of maternal mortality and lower levels of education for girls and women, with a concomitant effect on economic growth. In the case of 18th-century Europe, socioeconomic norms held fertility low while, in 20th-century

Uttar Pradesh, norms have had the opposite effect and have stimulated high fertility.²⁵

Observing these events, the sociologist Norman Ryder has argued that cultural and normative views may overcome a rational assessment of the consequences of childbearing.²⁶ Caldwell has theorized that a shift away from the extended family structure to a child-centered nuclear family had the effect of stimulating the flow of wealth from parents to children, thereby reducing the demand for children.^{27,28} The impact of such institutional structures on the proximate behavioral determinants of fertility can, of course, vary among societies.

The Diffusion Theory

If the socioeconomic variables discussed above are not consistent triggers for fertility decline, what other mechanisms are at work to expedite the decline? Social scientists have sought to explain the “diffusion of innovative attitudes and behaviors” as an important means of changing couples’ fertility values and behaviors.²⁹ The diffusion process, by which certain individuals change their attitudes and behavior, becomes a social dynamic that spreads new ideas and behavior related to reduced fertility throughout the population. Bongaarts and Watkins argue that fertility transitions tend to start in leader countries where development is relatively high and then spread to other countries within a region, generally before the other countries have reached the same level of development.³⁰ However, while the diffusion process is linked to other socioeconomic changes,

the diffusion of ideas around fertility control and family planning has in fact greatly accelerated in countries or regions where good quality family planning services and information are readily available.^{31,32}

Women's Education

Female education has consistently been associated with lower fertility (with the effects mediated by the presence or absence of mass education, the strength of the family planning program, and employment opportunities for women).³³ Economist Paul Schultz concludes that

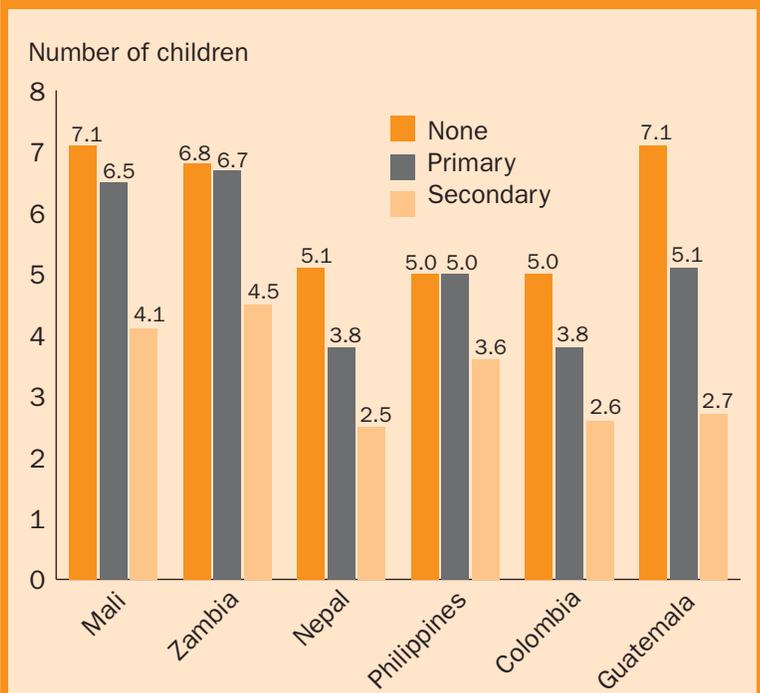
“...expansion of women’s schooling closely parallels the decline in fertility across high and low income countries since 1960...Educated women could have lower fertility for many reasons, in addition to the greater opportunity cost of their time in childrearing. The social and intellectual advantages that educated women enjoy help them in deciphering, adopting, and using effectively, new and old forms of birth control, and thereby avoiding unwanted births.”³⁴

Although gender inequities in education during the last 50 years are of legendary proportions, a number of developing countries made considerable progress in the 1970s, 1980s, and 1990s—a span that corresponds with marked fertility declines in many places. During the 1975–1995 period, for example, the combined primary and secondary enrollment ratio for girls (to boys) in developing countries increased from 38 to 78 percent.³⁵ In the 1980s and 1990s, girls made significant gains in the

proportion attending secondary schools, with many low-income countries increasing school enrollment for girls by 30 percent or more in a 10-year period.³⁶

While female primary education is certainly important from an overall development and gender perspective, secondary education has a greater effect on fertility behavior (see Figure 1). A 1995 study from Zimbabwe, which cut its TFR by nearly 50 percent between 1980 and 1995, showed that after six years of schooling, the negative correlation between education level and fertility behavior is significant, especially at the highest levels of education (10+ years of

Figure 1. Average Number of Children per Woman by Education Level



Source: Demographic and Health Surveys 1995–1999. Calverton, MD: Macro International, Inc.

Note: For Mali, Zambia, and Nepal, data include secondary-level education and higher. The other three countries show secondary-level education only.

schooling).³⁷ Clearly, completion of the demographic transition in developing countries will indirectly depend on the extent to which young women receive secondary schooling.

Use of Contraception

Figure 2 shows a clear relationship between the total fertility rate and contraceptive prevalence, one of the four proximate determinants of fertility.

Listed as the first priority in the 2001 report of National Research Council's Board on Sustainable Development is the acceleration of current trends in fertility reduction by

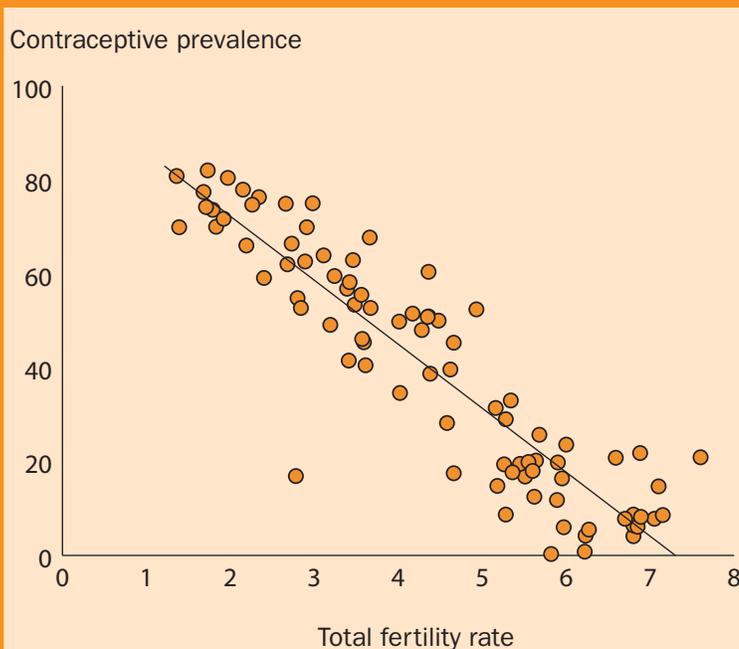
“...meeting the large unmet need for contraceptives worldwide, by postponing having children through education and job opportunities, and by reducing desired family size while increasing the care and education of smaller numbers of children. Moreover, the lack of access to family planning contributes significantly to maternal and infant mortality, an additional burden on human well-being. Allowing families to avoid unwanted births, enhancing the status of women to delay childbearing and nurturing children, would result in a billion fewer people [assuming a 10 percent reduction in the projected population in 2050] and substantially ease the transition toward sustainability.”³⁸

The last 30 years have seen substantial progress in the area of family planning and reproductive health as demonstrated by a number of national success stories:

- ▶ In Latin America, Colombia, Brazil, and Mexico have succeeded in providing most citizens with high-quality family planning and no longer receive significant international assistance.
- ▶ In Asia, Thailand, Sri Lanka, Korea, and Singapore—and perhaps most recently Indonesia—have all made a successful transition to lower fertility rates.
- ▶ In the Middle East, the fertility rates in Iran, Tunisia, and Turkey have fallen to low levels, and some family planning programs in the region are now purchasing their own contraceptives.

By providing an enabling environment and expanding access to family planning, national policies and programs can increase contraceptive use. Thailand, Iran,

Figure 2. Contraceptive Prevalence and Total Fertility Rate



Source: Ross, J., J. Stover, and A. Willard. 1999. *Profiles for Family Planning and Reproductive Health Programs: 116 Countries*. Washington, D.C.: The Futures Group International.

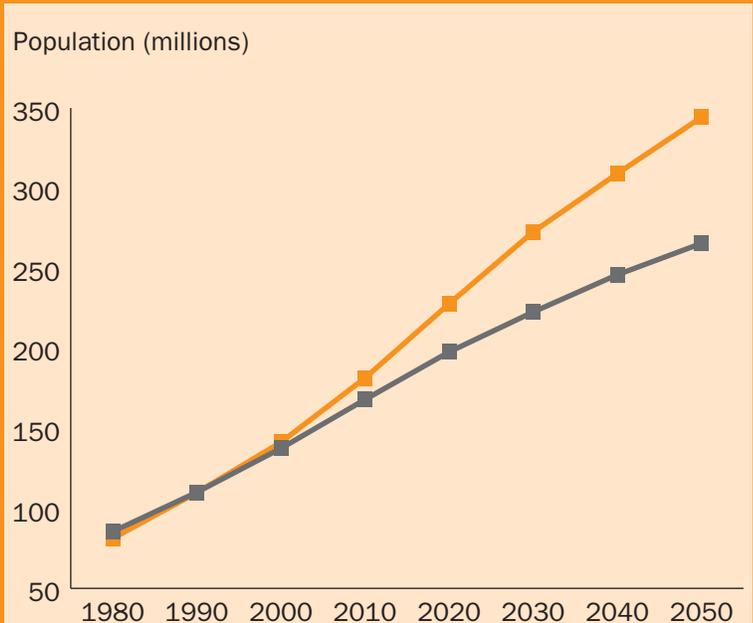
Pakistan, and Bangladesh provide evidence of the importance of policies and programs in promoting and facilitating contraceptive use.

Thailand. Thailand is a development success story, particularly in regards to its family planning program. Fertility declined by nearly half between 1960 and 1980. An economic analysis of the contributions to fertility decline between 1960 and 1980 found that “a major factor in facilitating fertility decline has been the Thai government’s family planning programs.”³⁹ Both the public sector program and the government-subsidized, nonprofit, private family planning association were effective in reaching Thailand’s urban and rural population. In addition, the rapid increase in female education played a role in fertility decline.⁴⁰

Iran. When governments lose focus on family planning, fertility can rise. Despite promulgation of a population policy in 1967, when Iran diverted attention from family planning to other issues after the 1979 revolution, the nation’s rate of population increase grew from 2.7 percent in 1976 to 3.4 percent in 1986. The TFR increased from 6.3 in 1976 to 7.0 in 1986.⁴¹ “As a result, the government faced great demands for food, health care, education, and employment. In February 1988, for the first time, the prime minister issued a statement on population to members of the cabinet, requesting that they consider population size and growth when setting policy.”⁴² With renewed government focus on family planning, average annual growth fell from 3.4 percent to roughly 2.5 percent in just a few years by 1991.

Pakistan versus Bangladesh. Divergent paths can have marked fertility consequences. Since 1971, when Pakistan and Bangladesh (formerly East Pakistan) split, the two nations have taken dramatically divergent approaches to population growth. Bangladesh, still one of the world’s poorest countries, made family planning a priority; in response, donors provided the country with significant funding. Pakistan paid lip service to family planning, and donor funding was far less significant. The differences of the past 30 years are striking. From a common TFR of around seven in the early 1970s, Pakistan’s current TFR is 5.3 compared with Bangladesh’s 3.3. Between 2001 and 2050, Pakistan’s population is projected to grow by 144 percent to almost 350 million while Bangladesh’s population is expected to

Figure 3. Populations of Bangladesh and Pakistan, 1970 to 2050 (projected)



Source: United Nations. 2000. *World Population Prospects: The 2000 Revision*. New York: United Nations Population Division.



grow by 93 percent (see Figure 3).⁴³ Pakistan has begun to focus on family planning, with the result that modern contraceptive prevalence is now 24 percent compared with less than 10 percent at the beginning of the 1990s.⁴⁴



Remaining Challenges

Despite considerable progress over the last 35 years, much remains to be done to complete the demographic transition in the developing world. The data above show that, in many countries with large populations, the fertility transition is only partially underway. In other countries, the transition has not yet started. Over the next 25 to 50 years, nations and donors will face many challenges in stimulating and maintaining demographic transitions, particularly the following:

► ***Continuing to manage the fertility***

transition in developing countries. Unlike the long-term demographic transitions in Europe and the United States, which hardly involved any government intervention, the transitions in 20th-century developing countries have been actively “managed.” That is, governments and donors have specifically organized and invested heavily in spurring demographic transitions and providing the inputs that otherwise would not have been available (e.g., contraceptives, training, supportive policy environments) and, in addition, have supported policies such as promoting female education that have indirectly affected fertility rates. Given that the current major demographic transitions are actively managed, any government and donor reduction in the management of the transition is likely to result in a dramatic

reduction in the pace of the transition and perhaps stall it altogether in some countries. As Caldwell put it, “The immediate challenge is to maintain some of the attitudes, policies, and expenditure patterns that have so far sustained the developing world’s fertility decline.”⁴⁵ Caldwell has also noted that the need for fertility decline was kept on the international and national policy agendas through the conferences, workshops, and academic inputs that convinced governments to invest in contraception.

► ***Reducing unintended births.*** One-third of births (32 percent) in the developing world are ill-timed or unwanted, as documented in the latest DHS estimates for 51 developing countries.⁴⁶ This statistic is consistent with an earlier estimate from 1995 for 28 countries.⁴⁷

► ***Meeting unmet need.*** About 114 million women—over one in six—in the developing world have an unmet need for contraception. None of these women is using a modern method; in addition, millions of couples rely on high-failure traditional methods, often for lack of access to a choice of modern methods.⁴⁸ Many others are using a modern method that is unsuitable to their circumstances, leading to high discontinuation rates. They would benefit from access to better, more secure contraceptive methods.

▶ **Assisting couples wanting to use contraception.** One-third of married women in developing countries who are not currently using contraceptives say they intend to use a method within the next year.⁴⁹ Even more wish to use a method later on, for example, after breastfeeding, but many of these women lack knowledge of methods and services and/or access to family planning. Strengthened programs would help eliminate barriers associated with lack of knowledge and access, thereby expanding contraceptive use and reducing unwanted fertility.

▶ **Improving access to contraception.** Many couples still cannot obtain a modern contraceptive method close to home. A 1999 survey of the experience of 88 developing countries showed that only about half (57 percent) of couples had reasonable access to five modern contraceptive methods (pills, IUDs, condoms, and male and female sterilization).⁵⁰ The closest correlate to fertility decline is contraceptive use, as recorded in more than three decades of national surveys. Clearly, if family planning programs could improve their distribution networks for contraceptive methods and more couples in the poorest countries had ready access to a choice among the main contraception options, the use of contraception would increase and fertility would tend to fall faster.⁵¹ Currently, the lack of access to services or supplies is one of the brakes on faster fertility decline.

▶ **Reducing failure and discontinuation rates.** Much work remains to improve the reliability of contraceptive use. A study of 15 countries concluded that

“...the total fertility rate (TFR) would be between 4 and 29 percent lower in the absence of contraceptive failure,”⁵² which averaged 14 percent. “Without other types of contraceptive discontinuation, the TFR would be reduced by between 20 percent (Indonesia) and 48 percent (Jordan). More than half of recent unwanted fertility was due to either a contraceptive failure or a contraceptive discontinuation in all countries except Guatemala.”⁵³ Further, discontinuation was negatively associated with the strength of the family planning program. In countries with stronger programs, discontinuation rates were lower. Discontinuation rates are high partly because couples lack a full range of choice of contraceptives. No single method works for all couples, and a narrow mix of contraception options leads many couples to stop use of family planning unnecessarily. Strengthened programs and further stimulation of private sector distribution are needed to address these challenges.

▶ **Reaching adolescents.** The fertility transition in historical Europe took place over about a 150-year period. European countries and the United States did not face rapid mortality declines as part of the transition and thus did not have to absorb a huge increase in the number of younger people and couples coming into young adulthood. In contrast, developing countries have experienced far greater population growth, requiring absorption of disproportionate numbers of youth for care during childhood, investment in education, and job creation. Policies that slow the growth of



new cohorts will decrease pressures on those governments that are strained to capacity from increasing numbers of young adults. Even in the few developing countries that are at or near replacement, the numbers reaching employment age will tend to outrun job openings for some years to come. Slowing the growth of the younger cohorts in the near future will greatly decrease potential pressure on governments already strained to capacity with increasing current numbers of young adults.

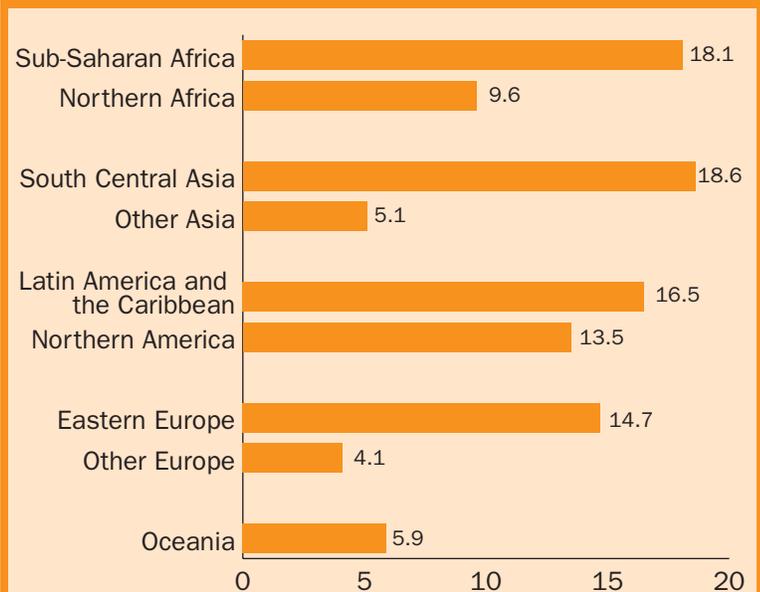
As a result of recent high fertility in the last four decades of the twentieth century, there are more young people in the world than ever before—over one billion young women and men between ages 15 and 24. These young people are reaching their peak childbearing years and thus are the key to the world’s demographic destiny. While youth as a proportion of the world’s population peaked in 1985 at 21 percent and is projected to decline to 14 percent by 2050, the actual number of young people will grow from 859 million in 1995 to 1.1 billion or more by 2050.⁵⁴ This increase will occur unless fertility behaviors change and family planning programs become more effective in reaching adolescents.

Even in Thailand, where fertility has fallen dramatically, 30 percent of the population is under age 15, and the population is projected to grow by 15 percent between 1999 and 2025, even though the average couple now has fewer than two children. Raising the average age at which women have their first child from 18 to 23 would reduce the population momentum by 40 percent.⁵⁵ In many parts of the

developing world, the percentage of total births to young women under age 20 is high (see Figure 4), making postponement of early childbearing extremely important, which can be promoted through increased schooling and access to contraception, and through changing gender norms that contribute to early marriage.

- ▶ **Raising the age at which women have their first child.** Policies and programmatic approaches can raise the age at marriage and the age at first birth. For example, USAID has worked successfully in India to stimulate enforcement of the legal age (18) at marriage law and registration of marriages.⁵⁶ Ensuring that young women and men have access to contraceptives to

Figure 4. Percentage of All Births to Women under Age 20, by Region/ Subregion



Source: United Nations Population Division. 2000. *World Population Monitoring, 2000: Populations, Gender and Development*. New York: United Nations Population Division.

delay the first pregnancy and to space subsequent pregnancies is also crucial.

In addition, early childbearing among young women interrupts young women's schooling, reduces their workforce involvement, and constrains improvements in the status of women. A 1998 study in Cameroon showed how family planning programs are likely to have raised school enrollments. Quantitative data from 8,000 school histories showed that unplanned pregnancies accounted for an estimated one of every five school dropouts. The elimination of unplanned pregnancies helps increase enrollment retention and narrow the gender gap in secondary schooling.⁵⁷

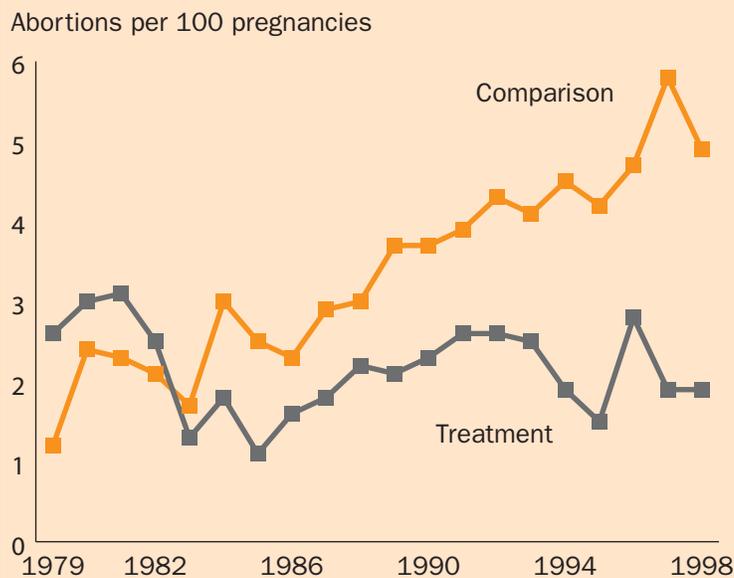
► **Increasing educational opportunities, including opportunities for girls.** The discussion above on the strong relationship between schooling for girls and decreased fertility rates points to the need to continue to expand access to schooling for girls—and for boys. Schooling establishes alternative structures of authority that weaken the control of parents, particularly for girls who are educated beyond the primary school level. Educated women are also more empowered to participate in the labor force and in decision making within the family.

► **Reducing abortion.** Many abortions occur for lack of good contraceptive availability and services.⁵⁸ Developing countries account for 35 million abortions annually; of these, 19 million take place in countries where abortion is illegal and generally unsafe. “Every year, 70,000 women die of complications of abortion performed by unqualified people in unhygienic conditions, or both; many suffer serious, often permanent disabilities.”⁵⁹ Excluding China, 79 percent of abortions occur in countries where abortion is illegal or sharply restricted.

By the best estimates, about one in eight pregnancies in Africa ends in abortion (12.9 percent); in Latin America, the figure is two in five (39.7 percent); and in Asia (including China and Japan, where abortion is legal), over one in four (28.9 percent).

► **Reducing the availability of contraceptives will drive women to use abortion, even in countries with low fertility.** Moreover, abortion can increase if reductions in the desired number of

Figure 5. Abortion in an Area with Wide Access to Family Planning (FP) and a Comparison Area with Poor Access to FP, Bangladesh: Selected Years, 1979 to 1998



Source: Rahman, M., J. DaVanzo, and A. Razzaque. 2001. “Do Family Planning Services Reduce Abortion in Bangladesh?” *The Lancet* 358(9287): 1051.



children outpace the availability of contraceptive methods and services to meet the growing needs of the population. High levels of unintended pregnancies, which can occur when women do not have access to contraception, tend to result in high levels of abortion.

Compelling evidence comes from a study in the Matlab area of Bangladesh, comparing a control area, in which family planning was less available, with an area in which family planning services have been widely accessible over the years.⁶⁰ Providing women with access to high-quality family planning services not only helps individuals and couples have the number of children they want but also reduces the incidence of abortion. In the Matlab area, women have fewer abortions (see Figure 5) because they have fewer pregnancies and therefore fewer unintended pregnancies. In the comparison area, women have more unintended pregnancies and higher rates of abortion.

A 1997 study in three Central Asian Republics (Kazakhstan, Kyrgyzstan, and Uzbekistan) documented the replacement of abortion by contraception as a means of birth control. The study provides ample evidence that reliance on abortion is diminishing in these countries as contraception is substituted. Contraceptive prevalence (modern and traditional methods) ranges between 56 and 59 percent and increased by one-third to one-half between 1991 and 1996. In contrast, abortion rates declined by as much as one-half during the same period.⁶¹

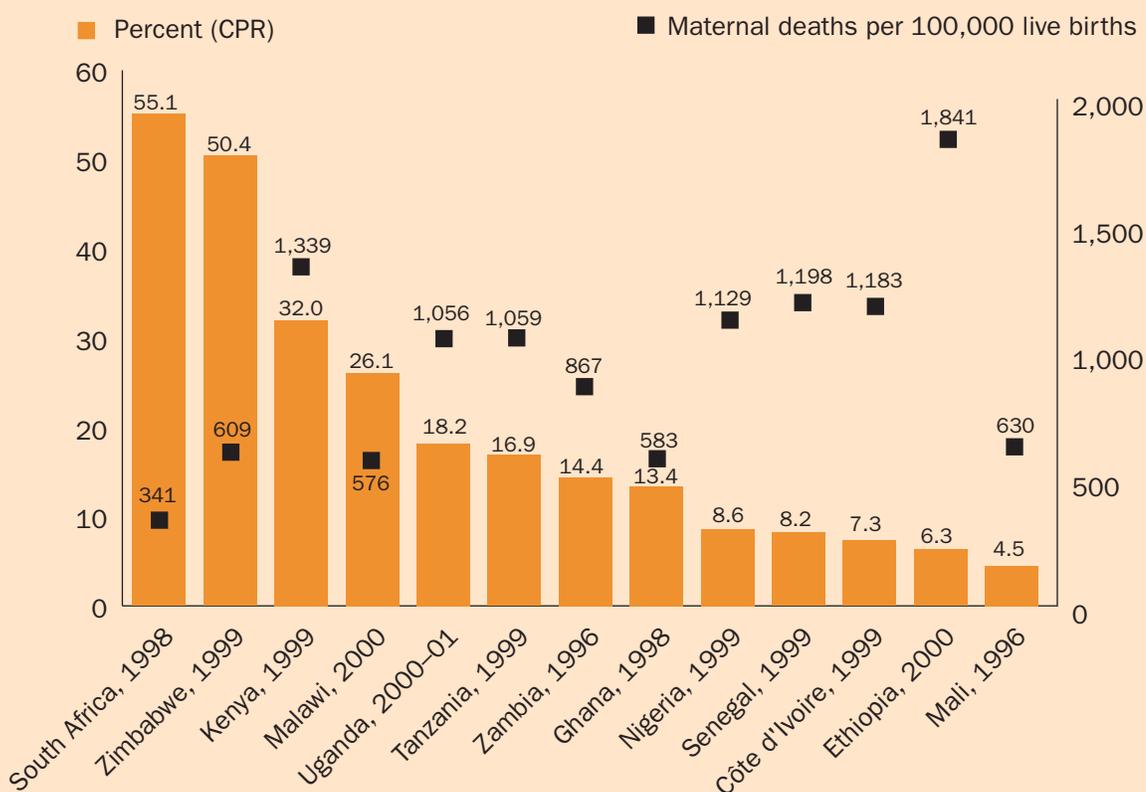
Improved use of modern contraception reduces the need for

abortions by reducing mistimed and unwanted pregnancies and by replacing high-failure traditional methods.

► ***Contributing to safe motherhood.*** In the latest (1995) estimate, approximately 511,000 maternal deaths occur annually in the developing world.⁶² The risk is smallest in countries that include strong family planning services in their health services.⁶³ Contraception, offered at the time of abortion or birth as well as routinely at health centers, reduces pregnancies and therefore deaths. Moreover, high-risk women (e.g., high parity, older women) are especially likely to use a contraceptive method if it is made available to them. Countries with the highest maternal mortality rates are generally those in need of the greatest level of donor assistance; they are among the poorest and therefore lack the infrastructure necessary for caring for emergency obstetric cases, training peripheral staff, and maintaining secure supply lines. Family planning is a low cost way of contributing to safe motherhood outcomes, yet, as Figure 6 shows, countries in Africa with the highest maternal mortality tend to be those with the lowest contraceptive prevalence.

► ***Meeting the growing need for resources.*** Resources will be needed not only to maintain contraceptive use at current levels but also to meet ever-growing demands for family planning and to support new and ongoing fertility transitions. For the foreseeable future, family planning programs must continue to address unmet need in order to reduce mistimed and unwanted fertility. Even if contraceptive prevalence were

Figure 6. Contraceptive Prevalence Rate (CPR) and Maternal Mortality Ratio by Country



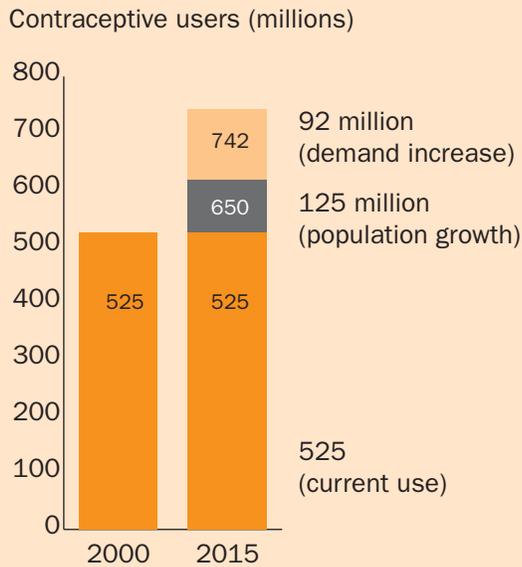
Source: Demographic and Health Surveys and Hill, K., Carla AbouZahr, and Tessa Wardlaw. 2001. "Estimates of Maternal Mortality for 1995." *Bulletin of the World Health Organization* 79(3): 182-193.

not to increase at all between 2000 and 2015, developing countries would still have to serve 125 million additional users (see Figure 7). Expected increases in new demand for lower fertility will add another 92 million new users; accordingly, over the next 15 years, an estimated 217 million additional users are expected worldwide, that is, 55,000 *additional* users per working day. Meanwhile, overall government and donor funding seems to be declining.

As Figure 8 shows, despite the inexorable growth in the number of

couples and the number of contraceptive users, donor contributions for contraceptives have fallen from the 1996 peak and have reached a plateau. Developing country governments already cover roughly three-fourths of all program costs in their own nations, but they generally lack foreign currency to buy contraceptive supplies from international sources. For many of those countries, donors have historically been the mainstay for contraceptives, apart from partial exceptions such as Indonesia, India, and, most recently,

Figure 7. Projected Increase in Contraceptive Users in Developing Countries (217 million additional users)



Source: UNFPA. 2002. *Reproductive Health Essentials—Securing the Supply: Global Strategy for Reproductive Health Commodity Security*. New York: United Nations.

Turkey. USAID has been the leading donor in providing contraceptives over the past 35 years. In 1999, USAID was responsible for 37 percent of all donor assistance for contraceptive supplies, with the World Bank providing 16 percent, the UNFPA 11 percent, DFID (British government) 10 percent, and the European Community 10 percent.⁶⁴ Between 1997 and 1999, shortfalls in contributions to the UNFPA necessitated a full two-thirds cut in commodity purchases, shortfalls that were barely made up by last minute contributions.⁶⁵

► **Continued donor assistance for family planning.** A number of donor organizations, including USAID, which has been the largest donor by far in

supporting family planning programs, UNFPA, the World Bank, and European and Japanese donors, have contributed significantly to the fertility transition. Donor assistance has been especially crucial in policy development, research and data collection, training, commodity supply, program management, social marketing, and quality improvements. Donors have played a key leadership role by supporting national governments in placing a higher priority on improving reproductive health, pioneering innovative approaches, fostering the replication of proven programs, funding contraceptive procurement and service delivery (both directly and by stimulating governments to do so), and

Figure 8. Donor Contributions for Contraceptive Commodities



Source: Interim Working Group on Reproductive Health Commodity Security. 2001. "Donor Funding for Reproductive Health Supplies: A Crisis in the Making." Washington, D.C.: Population Action International.

encouraging other donors to contribute to this effort.

By one estimate, USAID assistance in 2000 was directly responsible for providing modern contraception to 27 million couples in developing countries.⁶⁶ As a result, 10 million women were able to avoid an unintended pregnancy that year, leading to

- ▶ 3.4 million fewer unintended births;
- ▶ 5.0 million fewer abortions; and
- ▶ 1.1 million fewer miscarriages.

By preventing these unintended pregnancies, 34,000 mothers' lives were saved: 16,000 from pregnancy-related causes other than induced abortion, and 18,000 from unsafe abortions. In addition, 210,000 infant lives were saved.

By 1990, organized family planning programs had been responsible for about half of the recorded fertility

decline since the 1950s. The average net impact in the developing world in the late 1980s was estimated at 1.4 births per women.⁶⁷ Through 1990, FP programs had already produced a population reduction of about 412 million persons and were projected to add considerably to that figure.⁶⁸

Donor leadership will continue to be needed for the foreseeable future in work with governments of the least developed countries to ensure access to a range of contraceptives (in addition to providing other reproductive health and HIV/AIDS services), especially in Africa and parts of South Asia and the Near East. Donor assistance is also critically needed to promote expanded educational opportunities, particularly for girls. Donor funds have sustained the supply of contraceptives—the use of which remains a crucial proximate determinant of fertility.



Conclusion

Two types of consequences are associated with a sluggish fertility transition in the developing world—socioeconomic and programmatic.

Socioeconomic consequences. Much of the world is suffering from economic crises—more so in the weakest developing countries, with no relief on the horizon. Global economic cycles do not explain current conditions. Between 1985 and 1995, food production lagged behind population growth in 64 of 105 developing countries, with Africa faring the worst.⁶⁹ Population and food security is a key component of the United Nations Food and Agriculture Organization (FAO) Sustainable Development Department’s strategy to meet the goals of the 1996 World Food Summit Plan of Action.⁷⁰ While global food production can probably be increased somewhat, particularly if countries improve farming techniques and land management, larger populations require greater quantities of food to overcome current malnutrition and to achieve better living standards. Satisfying such needs will prove costly as people are forced to rely on marginal land. The better land is already used; irrigation systems have been built on more favorable sites; and water is becoming scarcer.⁷¹ Troublesome environmental effects related to additional deforestation, soil erosion,

pollution from pesticides, and loss of species all demand attention. All these consequences, observes John Bongaarts in the January 2002 issue of *Scientific American* (and echoed by renowned scientist Edward Wilson in his February 2002 article in the same journal), could be mitigated by slower population growth.⁷² While some would argue that inequalities between nations have fueled the economic crises, broad agreement holds that denying women access to safe, affordable contraception results in unwanted births and can only aggravate the current economic crises confronting many countries.

At the same time, in 68 developing countries, more than 40 percent of the total population is under 15 years of age. As Professor Wilson points out,

“A country poor to start with and composed largely of young children and adolescents is strained to provide even minimal health services and education for its people. Its superabundance of cheap, unskilled labor can be turned to some economic advantage, but unfortunately also provides cannon fodder for ethnic strife and war...the industrial countries will feel their pressure in the form of many more desperate immigrants and the risk of spreading international terrorism.”



All of the adolescents referred to by Professor Wilson will have moved into the reproductive stage of life in the next 15 years. Given the advances in women's education and the nearly universal desire of couples for smaller family sizes, poor access to family planning today will only increase the future ranks of the unemployed, poorly educated, and politically radicalized.

Programmatic consequences. A slower fertility decline translates into greater numbers of couples and potential contraceptive users in the future. There is a time penalty on weak action, especially in the face of demonstrable demand for services; whatever is not done now is harder to do later. Rising contraceptive prevalence is a positive development, but, due to *population momentum* through which ever-larger base populations will continue to grow, ever-larger numbers of contraceptives will be needed to meet the demand. While a few still adhere to the notion that population growth does not have negative global consequences,⁷³ in

the context of a rapidly modernizing world, current evidence based on longitudinal analysis suggests that a smaller ultimate population size will greatly increase prospects for a sustainable world in which all citizens can enjoy a life free of poverty while satisfying basic human needs.⁷⁴

The world's population has not stopped growing and is growing fastest in the poorest countries. To achieve sustainable development, strong measures by governments and donors to promote fertility decline in developing countries—and to give individuals and couples the means to do so—need to continue for the foreseeable future.

Sustaining the demographic transition requires focused attention on the proximate determinants of fertility. The evidence points to significant unmet need for fertility control, and providing good-quality family planning services is the easiest and least expensive way to satisfy that unmet need.



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