greatly facilitated the delivery of family planning services. A few notable success stories (e.g., in Taiwan and Korea) encouraged other governments to follow this approach.

By the time of the third international population conference, held in Cairo in 1994, access to family planning services had expanded substantially and fertility had declined in much of the developing world. However, fertility remained stubbornly high in some areas where poverty and women's status had not improved. This raised doubts about the effectiveness of supply-side policies that focused purely on family planning services to reach demographic goals. In addition, many raised strong objections to coercive measures. Although coercion was—and is—rare in population and family planning programs, notable instances such as China's one-child policy generated considerable controversy. And emerging evidence indicated that the quality, as well as quantity, of services is essential to attract and retain clients. This confluence of factors led participants in the Cairo conference to recommend a more comprehensive approach to population policy, one that emphasizes reproductive health, women's rights, and human development.

The Cairo process healed many of the rifts since Bucharest. Rather than continuing the debate over supply or demand, the Cairo agreement embraced both. It elaborated what *kind* of supply (not just services and technologies, but also their manner of provision, their client orientation, and the human rights that must underpin them) and the *kind* of development (investments in girls' education, gender equality, and efforts to alleviate poverty and early childhood mortality) that would support demand for lower fertility. The Cairo conference explicitly recognized that there are a number of synergistically linked solutions, all of which must be embraced. This process laid the foundation for nonideological, evidence-based population policy.

New demographic realities have greatly increased the need for a more comprehensive approach to population policy.

Unfortunately, in the years since Cairo, fundamentalist religious forces and their allies have ignited an old and destructive debate about individuals' (specifically women's) right to use birth control and to choose the number and timing of children, and also about the role of government in promoting population and reproductive health policies and programs. The "yes, and" of Cairo was replaced by a "no, but" divisiveness. In this contentious environment, advocates have focused on maintaining sup-

port for hard-won reproductive health service systems and a steady stream of contraceptive supplies. Investments in the "demand" side of population—progressive development policies—have received relatively less attention.

If that neglect continues, we can expect diminishing returns from population and family planning programs. This is because new demographic realities—as outlined in Box 20.1 and as we will show below—have greatly increased the need for a more comprehensive approach to population policy.

ELEMENTS OF GROWTH: THE NEW DEMOGRAPHIC LANDSCAPE

According to the 2007 UN medium projection, world population will continue to grow at least until 2050, adding 3.7 billion to the 2005 population of 6.5 billion. Why does population continue to grow despite largely favorable trends in fertility and contraceptive use? A partial answer is provided by a population decomposition exercise that divides future population growth into four key segments:[1]

- *High fertility*—Fertility above the replacement level (about 2.1 births per woman) is a key cause of further growth. In countries with information on fertility preferences, it is possible to further divide this factor into its subcomponents: *unwanted childbearing* and *the desire for large families.*
- *Declining mortality*—Declines in death rates—historically the main cause of population growth—will almost certainly continue. Higher standards of living will ensure longer and healthier lives in most countries. The main exceptions are countries heavily affected by the AIDS epidemic.
- *Young age structure*—Because the largest generation of adolescents in history is now entering the childbearing years, this component is responsible for a substantial part of future growth in the developing world. A large cohort of young people generates "population momentum"—even if each of these young women has only two children, they will produce more than enough births to maintain significant growth over the next few decades.
- *Migration*—In-migration raises population size and out-migration reduces it. In most developing regions and countries, migration is a relatively minor demographic factor.

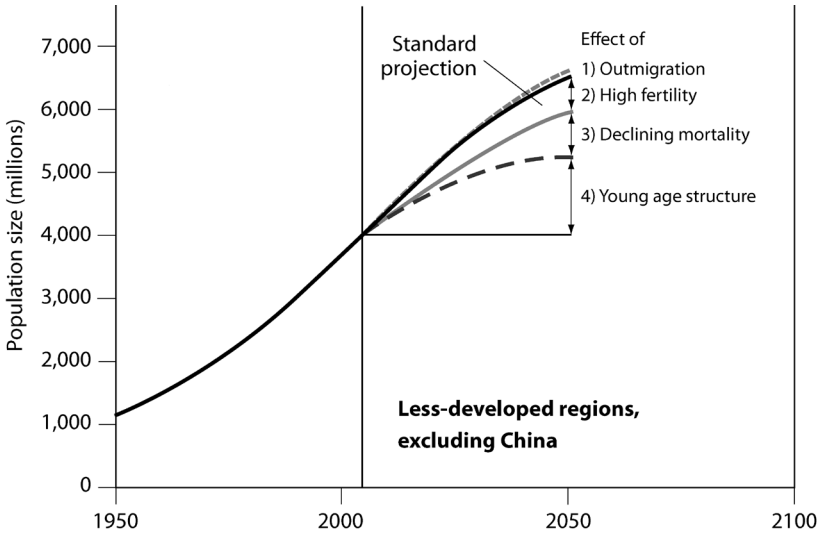

FIGURE 20.1 Alternative population projections 2005–2050 and effects of components of population growth.
Source: Based on United Nations 2007

TABLE 20.1 Effects of Components on Population Growth: 2005–2050

	Components of population growth (%)				
	High fertility	*Declining mortality*	*Young age structure*	*Migration*	*Combined (multiplicative)*
Africa	44	18	28	–1	117
Sub-Saharan	52	20	26	–1	129
Asia	–3	11	26	–1	34
China	–13	9	15	–1	7
Latin America	–1	7	37	–5	38
South (excluding China)	12	14	32	–2	64
South	6	13	28	–2	50

Source: Based on United Nations 2007

Quantitative estimates of the impacts of these four components of population growth are provided in Table 20.1. In the developing world as a whole, population is expected to grow by 50 percent between 2005 and 2050. This growth is the result of the combined effects of three growth factors: 6 percent from high fertility, 13 percent from declining mortality, and 28 percent from young age structure.

BOX 20.1

The Developing World's New Demographic Landscape

Population

- From 1950 to 2005, the developing world's population tripled from 1.7 to 5.3 billion. Growth varied widely by region, from 179 percent in Asia to 327 percent in sub-Saharan Africa.[a]
- The rate of growth has declined to 1.4 percent as a whole but is virtually unchanged, at 2.5 percent, in the fifty least developed countries.[b]

Reproductive Health and Fertility

- The average total fertility rate has fallen from 6 or more children per woman to near 3. Between the early 1960s and early 2000s, the largest declines were in Asia (–56 percent) and Latin America (–58 percent), with the smallest in sub-Saharan Africa (–19 percent). Some countries (mostly in Asia) completed the transition to replacement-level fertility in record time, while others (mostly in sub-Saharan Africa) have seen little change.[c]
- Average ideal family size for women twenty to twenty-nine is now less than three in most countries in Asia and Latin America but remains around five in sub-Saharan Africa.[d]
- Contraceptive use, once rare, is now widespread; prevalence among married women exceeds 60 percent.[e]
- Today, a far higher proportion of young couples are sexually active before marriage.[f]
- Unwanted fertility has not declined much. The rise in contraceptive use has been offset by more years of exposure to unintended pregnancy.[g]

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[a]UN, 2007, *World Population Prospects: The 2006 Revision,* Population Division Department of Economic and Social Affairs, UN, New York.

[b]Ibid.

[c]Ibid.

[d]Westoff, Charles F., and Akinrinola Bankole, 2002, *Reproductive Preferences in Developing Countries at the Turn of the Century*, DHS Comparative Reports Number 2, ORC Macro, Calverton, MD.

[e]UN, 2006, *Levels and Trends of Contraceptive Use as Assessed in 2002*, Population Division, Department of Economic and Social Affairs, ST/ESA/SER.A/239, UN, New York.

[f]National Research Council and Institute of Medicine, 2005, Growing up global: The changing transitions to adulthood in developing countries, *Panel on Transitions to Adulthood in Developing Countries,* Cynthia B. Lloyd, ed., Committee on Population and Board on Children, Youth, and Families, Division of Behavioral and Social Sciences and Education, National Academies Press, Washington, DC.

[g]Westoff and Bankole, 2002, *Reproductive Preferences in Developing Countries at the Turn of the Century.*

Maternal and Child Heath

- Due to public health measures, improved nutrition, and rising standards of living, infant mortality has fallen to 6 percent, compared with 18 percent in the 1950s.[h]
- Maternal mortality has declined but remains unacceptably high among the poorest populations, especially the youngest first-time mothers. Some regions have shown some progress, but ratios in sub-Saharan Africa have remained at 905 per 100,000 live births.[i]

HIV/AIDS

- AIDS has killed 25 million people, and 33 million are currently infected. About 2.5 million new HIV infections occur each year. The epidemic appears to have stabilized in most countries, and the number of new infections is declining in many.[j]
- The impact of AIDS on population growth and age structure is smaller than was expected: Population in sub-Saharan Africa is expected to grow to 1 billion by 2050, despite the epidemic, and growth is expected to remain positive even where the epidemics are most severe.[k]
- In sub-Saharan Africa, 75 percent of the 6.2 million people aged fifteen to twenty-four with HIV are female, up from 62 percent a few years earlier. The female-to-male ratio is generally three to one throughout Africa; in some communities, it reaches eight to one.[l]

Early Marriage/Sexual Initiation

- Although child marriage is declining in many regions, more than a third of women currently aged twenty to twenty-four were married before age eighteen. Rates of child marriage are highest in western/middle Africa (45 percent) and south Asia (42 percent).[m]
- Most sexually active adolescent girls are married, but a rising share of sexual initiation is outside of marriage.[n]

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[h]UN, 2007, *World Population Prospects*.

[i]Kenneth Hill, et al., 2007, Estimates of maternal mortality worldwide between 1990 and 2005: An assessment of available data, *The Lancet,* 370(9595): 1311–1319.

[j]UNAIDS, 2007, *AIDS Epidemic Update: December 2007*, Joint UN Program on HIV/AIDS (UNAIDS) and World Health Organization (WHO), Geneva.

[k]Bongaarts, John, Thomas Buettner, Gerard Heilig, and Francois Pelletier, 2008, Has the AIDS epidemic peaked? *Population and Development Review* 14(2): 199–224.

[l]UNAIDS, 2007, AIDS Epidemic Update—Regional Summary, accessed April 30, 2008 at http://www.unaids.org/en/CountryResponses/Regions/SubSaharanAfrica.asp.

[m]Mensch, B., S. Singh, and J. Casterline, 2005, Trends in the Timing of First Marriage among Men and Women in the Developing World, Policy Research Division Working Paper Number 202, Population Council, New York.

[n]Ibid.

The roles of the different factors vary considerably among regions in the developing world. For example, the high-fertility component is largest in sub-Saharan Africa (52 percent) and smallest in Asia and Latin America (a negative value indicates that fertility is expected to fall below replacement in the future). The impact of declining mortality is also highest in sub-Saharan Africa, reflecting its projected large improvement in life expectancy from current low levels. The young-age-structure component is an important driving force of population growth in all regions and the dominant one in Asia and Latin America. Migration effects are relatively minor, diminishing future population growth by an average of –2 percent, except in Latin America where it reaches –5 percent.

TWO CRUCIAL POLICY LEVERS: HIGH FERTILITY AND YOUNG AGE STRUCTURE

Effective population policies for the twenty-first century must respond to the shifting sources of population growth outlined above. Of course, declining mortality is entirely beneficial, and migration is a relatively minor factor in population growth. So, for policy purposes, the two key elements of growth are *high fertility* and a *young age structure*.

High Fertility

In addressing high fertility, the distinction between wanted and unwanted fertility is crucial. Despite gains in family planning, unwanted fertility remains significant: About one in five births is unwanted by the woman, and a larger proportion is mistimed. Unwanted fertility can result from limited access to family planning services (geographic or social distance, prohibitive costs), inherent limitations of technology (contraceptive failure, side effects), poor communication between partners, and women's relatively limited ability to negotiate the terms of sexual relations, including contraceptive protection.

The desire for large families is closely associated with poverty and inequality.

High fertility is also driven by the desire for large families. In most developing countries, women still want more than two children; in some areas, such as sub-Saharan Africa, desired family size is typically

around five children. It is important to remember that the desire for large families is closely associated with poverty and inequality. Where child mortality rates are high and social safety nets are frayed or nonexistent, poor couples will have many children to ensure that some will survive to work and support their parents in old age. And where women lack access to education and economic opportunity, they must rely on childbearing as a source of status and security. Of course, even in affluent societies where women enjoy relatively equal rights, some couples will choose to have large families—but average fertility in those societies is invariably at or below replacement level.

In much of Asia and Latin America, wanted fertility is not far from the replacement level, so high fertility consists mostly of unwanted childbearing. In contrast, in sub-Saharan Africa, the high fertility component is not only very large (Table 20.1) but mostly caused by the desire for large families.

The two components of high fertility can be addressed by a combination of supply- and demand-side approaches. Quality reproductive health services, geared to meet the specific needs of clients, are vitally important in reducing unwanted childbearing. And where desired family size remains high, population policy must address underlying socioeconomic conditions, especially where poverty and gender inequality are most severe. Where investments are made in human development—such as child survival programs and educating girls through their adolescent years—couples prefer smaller families. This holds true even in very poor societies such as Sri Lanka and the state of Kerala in India. Although poor, these societies have achieved high levels of literacy and female empowerment, low infant and child mortality—and dramatic declines in fertility rates.

Increasing the age at marriage by five years could directly reduce 15 to 20 percent of future population growth.

Young Age Structure

As the leading driver of population growth in the developing world, young population age structures merit increased attention in population policy. Of course, a young age structure is in itself not amenable to modification. However, the onset and pace of childbearing can be altered to offset population momentum. For example, increasing the age at mar-

riage and associated childbearing by five years could directly reduce 15 to 20 percent of future population growth. Many interventions that promote later marriage and childbearing—including girls' education and enforcement of child marriage laws—are beneficial in their own right and have also been shown to slow population momentum.

POPULATION POLICIES FOR THE TWENTIETH CENTURY

The demographic landscape has changed dramatically in the last forty years; now it is time for population policy to change in response. Early population programs focused on the "low-hanging fruit" of contraceptive supply—a strategy that made sense when few women in the developing world had access to family planning services. Today, we must reach into the higher branches. The population policy options outlined below address the two crucial levers of rapid population growth—high fertility and young age structure—with an array of supply and demand approaches. Moreover, these policies are vitally important to advance public health, gender equity, and social justice.

Investing in Girls

Investing in girls has always been a good idea—it is now even better in light of the shifting composition of future population growth. Investments in girls through adolescence provide a demographic "three-for": reducing population momentum by delaying marriage and childbearing, thereby increasing the space between generations; lowering desired family size as more educationally accomplished girls are less reliant on multiple children for security; and decreasing the age and power differential between partners, thus positively affecting women's ability to meet their fertility goals. Benefits also extend to the next generation, because those who marry later and with more authority are likely to invest in their children (especially their girl children) in ways that establish a virtuous cycle of improved health and education. Specifically, we must (1) help girls stay in school through adolescence, (2) provide social and economic alternatives to early marriage and childbearing, (3) end child marriage and support married girls, and (4) focus on the youngest first-time mothers.

The new challenge is not just getting girls (and boys) to school on time but keeping them there through adolescence.

Help Girls Stay in School Through Adolescence. Girls' education has long been associated with positive developments in health and population outcomes. Attending school during adolescence is crucial to girls' reproductive health.[2] Girls who stay in school during adolescence have later sexual initiation and are less likely to be sexually active than their same-age peers who are out of school. Those who are sexually active as students are also more likely to use contraceptives than their peers.

In recent decades, governments of developing countries have emphasized primary school attendance. Great progress has been made: Primary school attendance rates are up, and the gap between boys and girls is narrowing. Thus the new challenge is not just getting girls (and boys) to school on time but keeping them there through adolescence—minimizing dropout, especially around the time of puberty for girls. It is also important to increase the proportion of girls in the appropriate grade for their age: In most countries of sub-Saharan Africa, for example, the majority of adolescent girls in school are in primary grades.[3]

This vicious cycle of intergenerational poverty, high fertility, and poor health can be broken by concerted investments in the poorest girls in the poorest communities.

Provide Social and Economic Alternatives to Early Marriage and Childbearing. In poor communities, early marriage, followed by early childbearing, is a vital security and survival strategy for girls. Girls (and their parents) may view marriage as the only possible economic choice and accepted social role. For young married girls, the failure to produce a child in a short period of time may make them vulnerable to unilateral divorce or abandonment. Thus, the opportunity costs of repeated childbearing outweigh any other possible choices they have.

The vicious cycle of intergenerational poverty, high fertility, and poor health can be broken by concerted investments in the poorest girls in the poorest communities. In these communities, many young people, especially girls, are permanently diverted in early adolescence from the path of school and access to decent work. The absence of sufficient investments in girls during the crucial ages around puberty—ages ten to fourteen—limits their prospects and encourages dependence on marital and sexual relationships and childbearing for social and economic security.

The promotion of girls' education to the secondary level and their inclusion in community development efforts, functional financial liter-

acy, and publicly visible/civic activities offer girls the beginnings of autonomy and lays the foundations for shifting gender norms. Girls must have social power and economic authority to counter pressures for sexual relations as a livelihood strategy—both inside and outside of marriage.

End Child Marriage, Support Married Girls. Child marriage—legally, marriage of a girl or boy before her or his eighteenth birthday—is still with us. Demographic and health survey data indicate that in fifty less-developed countries, about 38 percent of young women aged twenty to twenty-four were married before age eighteen.[4] If present patterns continue, over 100 million girls will be married as children in the next decade. Although the proportion of women who marry early is declining in most, but not all, parts of the world, it is vital to underscore that millions of girls are currently married, with many more in the pipeline. Child marriage is a practice that mainly affects girls (56 percent of women aged twenty to twenty-four versus 14 percent of men the same age were married by age twenty).[5]

Married girls have a higher risk for sexually transmitted infections and HIV than their sexually active unmarried peers.

Marriage transforms virtually all aspects of girls' lives. Typically, a girl who marries is moved from her familiar home and village, loses contact with friends, is initiated into sexual activity with someone she barely knows, and soon becomes a mother. The implications for health and well-being are striking. Married girls have a higher risk for sexually transmitted infections and HIV than their sexually active unmarried peers.* And the youngest (age sixteen and under) first-time mothers face an increased risk of mortality and morbidity—for themselves, and for their children.

Measures to eliminate child marriage must be context-specific and engage parents and community members. Essential elements of any strategy will be schooling in some form and giving girls better access to their peers. This can be achieved either through programs that promote primary to secondary school progression or that work with girls who have not been in school, creating group structures—assets in and of themselves and platforms through which the girls can receive functional literacy training, mentoring, health information, and either direct access to or referral to services.

At the same time, it is essential to invest in the 50-million-plus mar-

*This is true for a complexity of reasons; see, for example, Clark, Shelley, Judith Bruce, and Annie Dude, 2006, Protecting young women from HIV/AIDS: The case against child and adolescent marriage, *International Family Planning Perspectives* 32(2): 79–88.

ried girls in the developing world, whose social, economic, and reproductive lives are still ahead of them. We have had successful experiments with adolescent girls in a number of settings (Asia, Middle East, and Africa). "Married girls clubs" have been established to reduce social isolation, increase girls' agency and negotiating power with partners, and provide a venue for learning. (See Box 20.2, Berhane Hewan.) These groups empower and connect married girls—a goal important in its own right and crucial to improving their health and well-being and that of their children.

Focus on the Youngest First-Time Mothers. Special measures need to be taken to make first-time pregnancy safer. First births carry special risks for both mother and child, regardless of the age of the mother. The issue is of particular relevance to married girls because the vast majority of births to adolescent girls are first births that occur within marriage.[6] Adverse outcomes associated with first birth include obstructed labor (which can result in obstetric fistula in settings where access to care is limited),[7] preeclampsia/eclampsia, malaria, and infant mortality.[8] Disentangling the age and parity effects at young ages is difficult. But it is clear that the youngest first-time mothers—those under fifteen, owing to physical factors, and those under eighteen, owing to social factors—face special risks. Girls who give birth during adolescence require special attention because they are less mature and are simultaneously coping with their own and their baby's physiological, emotional, and economic needs.[9]

Programs engaging the youngest first-time mothers are strategic from three perspectives. First, demographically, as fertility falls, a rising proportion of births will be first births. Second, habits formed around the first birth, such as infant feeding choices and, crucially, spacing through contraception, tend to be carried forward across the life cycle. Third, focusing the health system on the social needs of these first-time mothers will generally raise the quality of service-site interpersonal relations (caring about the context of the mother, developing support and communication with the father). These habits, embedded in the system, also tend to carry over to the ways in which women across all ages and parities are treated.

Improving Access to High-Quality, Appropriate Reproductive Health Services

When many family planning programs were launched in the 1960s and 1970s, there was a great unmet need for contraception, and most clients

BOX 20.2

Berhane Hewan ("Light for Eve"): Forming Girls' Groups in Rural Ethiopia

In the Amhara region of Ethiopia, rates of child marriage are among the highest in the world. Almost half of all girls in Amhara are married before their fifteenth birthday. A Population Council study in Amhara and Addis Ababa found that for many young girls, marriage may mean having forced sexual relations with a virtual stranger. Some 95 percent of the girls surveyed did not know their husbands before marriage, and 85 percent were given no warning that they were about to be married. Sexual initiation was often unwanted and traumatic: More than two-thirds of the married girls had not yet begun menstruating when they had sex for the first time, and 81 percent said their sexual initiation was physically forced.

Berhane Hewan (meaning "light for Eve" in Amharic) is a program designed to discourage early marriage and to help young married girls. Berhane Hewan creates a community dialogue about the negative consequences of child marriage, offers social and economic support to girls and their families, and encourages school attendance and delayed marriage. Unmarried girls in the program meet five times per week in small groups under the guidance of female mentors, all of whom are either women leaders from the community or local women with a background in teaching. For married girls, the program convenes clubs that offer reproductive health information, life and livelihood skills, and links to social services. And Berhane Hewan provides an economic incentive to delay marriage: Unmarried girls who participate regularly and remain unmarried for the duration of the project are presented with a goat at graduation.

The program has had a dramatic impact on girls' lives and community norms. Girls in the program are three times as likely to be in school, and younger adolescents are 90 percent less likely to be married, than their counterparts in another village. Moreover, married girls who participate in the program are nearly three times more likely to use family planning than their peers. In the villages where Berhane Hewan was launched, there have been no marriages of girls under the age of fifteen since the program began—and a greater proportion of girls are marrying later. The project is currently being expanded to reach 10,000 girls by the end of 2009.[a]

[a] Erulkar, Annabel S., and Eunice Muthengi, 2007, Evaluation of Berhane Hewan, a Pilot Program to Promote Education and Delay Marriage in Rural Ethiopia, Population Council, New York; Amin, Sajeda, Erica Chong, and Nicole Haberland, Programs to address child marriage: Framing the problem, *Promoting Healthy, Safe, and Productive Transitions to Adulthood Brief*, Number 14, Population Council, New York, updated January 2008.

were married women. Clients and their needs have changed since those early years, and family planning programs must change with them, by providing a diverse array of services, including temporary contraception, and responding to social and emotional realities—including sexual coercion.

Providing a Diverse Array of Services, Including Temporary Contraception. Today, there is still a substantial unmet need for contraception and reproductive health care, in part because desired family size has declined substantially in a majority of developing countries. As women want fewer children, the number of years in which they must avoid pregnancy increases—and now approaches two decades, on average. But over the course of those decades, women and their partners will need a wider range of contraceptive and reproductive health services.

For example, a typical client is no longer a married woman seeking to end her childbearing years. More often, clinic waiting rooms are filled with young women or married couples who want to delay their first birth or ensure space between pregnancies. This means there is a need for technologies and services that allow couples to safely avoid childbearing without a loss of fertility. But some service providers still emphasize permanent methods of birth control, which are inappropriate for many young clients.

A key related trend is that more young women are being sexually initiated *outside* of marriage, long before they have established permanent partnerships. Young men and women need more and better information and services, and reversible methods—especially those that protect against sexually transmitted diseases, including HIV.

Responding to Social and Emotional Realities—Including Sexual Coercion. Effective reproductive health services must also understand their clients' social and emotional needs. For example, sexual coercion is a serious problem, especially for young girls. In some settings, a very high proportion of first sexual relations may be tricked or forced. Thus, the social support and information at service points must build girls' agency and negotiating power. As the HIV epidemic becomes increasingly younger and female, service points and treatment alone are not sufficient to alter negative reproductive health outcomes that stem from HIV infection. This must be complemented by the expansion of single-sex safe and supportive spaces for girls. Such spaces can be established in youth clubs, community centers, religious institutions, and school facilities. Safe spaces are a primary asset to girls and young

women, offering them access to peers and mentors and a base from which to offer or refer to services.

CONCLUSION

For decades, population policy has focused on unmet need for contraceptive services. Those services are as important as ever, though they must adapt to the needs of a new generation of clients. But today's new population challenges require accelerated investment in human development—in particular, investments in girls' education. They also demand fresh attention to the inequities that prevent women—and girls—from freely choosing the number and timing of their children. The next wave of population policies must be far better targeted, emphasize social inclusion, assure the observance of human rights, and, crucially, address the opportunity structures and capacities of young populations—especially young girls. The "unmet need" we must fill now is for justice.

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5. DHS data from fifty-one countries as reported in NRC and IOM 2005.

6. Seventy-eight percent of births that occur before age eighteen are first births, and 90 percent of first births that occur before age eighteen occur within marriage. DHS data analyzed by Monica Grant, Policy Research Division, Population Council. DHS surveys covered 60 percent of developing-country populations.

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