



SUSTAINABILITY

Six Billion in Africa

Population projections for the continent are

A woman in a patterned headscarf looks intently at a person whose back is to the camera. The woman is wearing a black, white, and yellow patterned headscarf and a blue and white patterned top. The background is blurred, showing other people in a hospital setting.

alarming. The solution: empower women

By Robert Engelman

COUNSELOR from Marie Stopes International educates women gathered at a hospital in Rabai, Kenya, about family-planning options, including emergency contraception.

Robert Engelman directs research on connections between family planning and environmental sustainability at the Worldwatch Institute, where he was formerly president. For many years he reported on health, science and the environment for U.S. newspapers. His book, *More: Population, Nature, and What Women Want* (Island Press), won the Population Institute's Global Media Award in 2008.



EARTH IS A FINITE PLACE. THE MORE PEOPLE WHO inhabit it, the more they must compete for its resources. Although human population has grown steadily, developments in recent decades have been encouraging. Globally, women today give birth to an average of 2.5 children, half as many as in the early 1950s. In 40 percent of the world's nations, the fertility rate is at or below the "replacement" level of 2.1 children per woman, the number at which offspring simply take the place of their parents.

Then there is Africa, where women give birth on average to 4.7 children and the population is rising nearly three times faster than in the rest of civilization. The continent where our species arose faces a worrisome future. Fertility—the number of live births over a woman's lifetime—remains high in most of Africa's 54 countries. Africans have long valued large families as a matter of status and as a way to create family workers for farmland and to counteract high death rates for young children. And more babies than ever are surviving to become parents themselves. More than half the continent's nearly 1.2 billion people are children or teenagers, a ratio that is building powerful momentum for years of expansion at a pace humanity has never known. By the end of this century, demographers now project, Africa's inhabitants will triple or quadruple.

For years the prevailing projections put Africa's population at around two billion in 2100. Those models assumed that fertility rates would fall fairly rapidly and consistently. Instead the rates have dropped slowly and only in fits and starts. The United Nations now forecasts three billion to 6.1 billion people—staggering numbers. Even conservative estimates, from places such as the International Institute for Applied Systems Analysis in Austria, now see Africa at 2.6 billion. The U.N. has in recent years continually raised its midline projection for 2100 world population, from 9.1 billion in a 2004 estimate to 11.2 billion to-

day. Almost all of the unanticipated increase comes from Africa.

Extreme growth threatens Africa's development and stability. Many of its inhabitants live in countries that are not especially well endowed with fertile soils, abundant water or smoothly functioning governments. Mounting competition for nourishment and jobs in such places could cause strife across the region and, in turn, put significant pressure on food, water and natural resources around the world, especially if Africans leave their nations in droves, which is already happen-

ing. As many as 37 percent of young adults in sub-Saharan Africa say they want to move to another country, mostly because of a lack of employment.

Africa needs a new approach to slowing its population rise, to preserve peace and security, improve economic development and protect environmental sustainability. And the world needs to support such efforts. From the 1960s to 1990s, international foundations and aid agencies urged African governments to "do something" about escalating population growth. That "something" usually amounted to investing in family-planning programs without integrating them with other health care services, plus making government statements that "smaller is better" for family size. From the mid-1990s onward, however, silence descended. Calling population growth a problem was seen as culturally insensitive and politically controversial. International donors shifted their focus to promoting general health care reform—including fighting HIV/AIDS and other deadly diseases.

Africa and the rest of the world have to resurrect a sense of urgency. We need to get over our fear of the "P" word and jump-start multiple, coordinated steps that can nudge down the population-growth trajectory—in Africa and elsewhere where it is rising unsustainably. Research shows that beyond making sure women have access to effective contraceptives and the knowl-

IN BRIEF

By 2100 Africa's population could be three billion to 6.1 billion, up sharply from 1.2 billion today, if birth rates remain stubbornly high. This unexpected rise will stress already fragile resources in Africa and around the world.

A significant fertility decline can be achieved only if

women are empowered educationally, economically, socially and politically. They must also be given easy and affordable access to contraceptives. Following this integrated strategy, Mauritius has lowered its fertility rate from six to 1.5 children; Tunisia's rate dropped from seven to two.

Men also have to relinquish sole control over the decision to have children and refrain from abusing wives or partners who seek birth control.

For such efforts to succeed ultimately, government leaders must encourage public and policy conversations about slower population growth.

JONATHAN TORGOVNIK/Getty Images (all photographs)

SOURCE: WORLD POPULATION PROSPECTS: THE 2015 REVISION. POPULATION DIVISION, DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS, UNITED NATIONS, 2015. DOWNLOADED NOVEMBER 19, 2015. <http://esa.un.org/lmp/Download/Standard/Population>

edge to use them, the best steps are the ones that make sense for other worthwhile reasons: educating girls and women and equalizing their social and legal status to those of men. Although a few countries have taken some of these actions in isolation, a far more effective approach would be integrating opportunities for women: educationally, economically, socially and politically.

Population can never be “controlled”—that would violate fundamental human rights and probably still would not work. But population can be influenced, indirectly yet powerfully. A smart suite of strategies can ease pressure on resources, reduce conflict, and make life more worthwhile for girls, boys, women and men.

AFRICA TODAY AND TOMORROW

MANY MEASURES CONFIRM that Africa’s situation is already bleak. Despite economic progress and democratic advances, the continent stands out today for its low life expectancies, slow pace of development, and high rates of poverty and malnutrition. Crop yields are among the world’s lowest. South of the Sahara, overgrazing by domestic animals encourages the desert to advance, pushing nomadic herders into the territory of farmers, as the populations of both groups grow. Egypt and Ethiopia have rattled sabers over the waters of the Nile, once shared effortlessly within the 11-nation river basin; a 2010 analysis found that the four most “water-insecure” countries in the world were all in Africa.

Competition for increasingly scarce resources is contributing to civil conflict and terrorism. In July 2014, on the Kenyan island of Lamu, 80 people died in a Muslim-Christian dispute over fertile soil. Some scholars attribute the rise of the brutal Islamist army Boko Haram in Nigeria at least in part to the clash of herders and farmers over the drying scrublands of the Sahel. The specter of few prospects for men in their teens and 20s to earn income also fuels aggression across central Africa. “If there were more jobs, in agriculture in particular, there would be less frustration and less conflict in Plateau State,” says Becky Adda-Dontoh, an adviser to the Nigerian government, speaking of a jurisdiction in the eastern-central part of the country where Boko Haram is active.

The Washington, D.C.-based Fund for Peace ranks four African countries—Sudan, South Sudan, Somalia and the Central African Republic—as the world’s most fragile, least able to govern their territory and maintain a minimal level of security. In 2015 alone, hundreds of Africans drowned trying to flee to Europe.

Now imagine what Africa might look like with two billion people, much less six billion. History offers little guide. Asia surpassed four billion people in 2007, but it has 50 percent more land and considerably higher levels of economic development on average. Yet even with its assets, large swaths of that continent still face impoverished cropland, falling water tables, food insecurity and crippling air pollution.

One huge change in Africa will be a mushrooming of gigantic cities. The continent is urbanizing rapidly, with most people arriving from failed farmlands and settling into slums, scratching out what shelter and livelihoods they can. Metropolitan areas house nearly half a billion people today; by 2050 they would hold

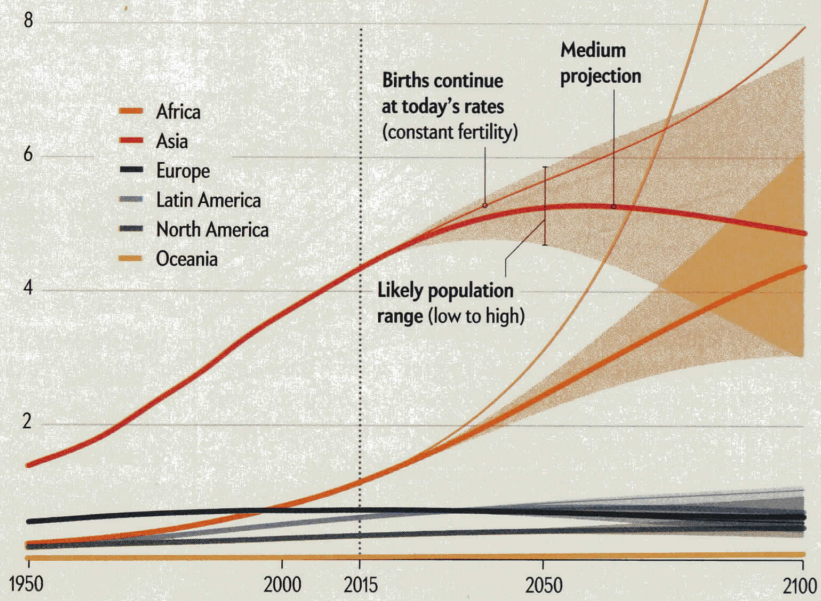
BIG PICTURE

Africa Drives Global Population Growth

Total Population
16 billion

Africa’s population is expanding so much faster than expected that the United Nations has revised sharply its medium projection for world population, up from 9.1 billion to the current prediction of 11.2 billion by 2100. Almost all the unanticipated increase comes from Africa (orange), now forecast to reach three billion to 6.1 billion people by then. Although the midrange estimate for Asia (thick red line) at that time would still be larger—about 4.9 billion, compared with Africa’s 4.4 billion—Asia’s total would be decreasing, and Africa’s would still be increasing.

If Africa’s birth rate stays at its current level (thin orange line), 15.8 billion people would inhabit the continent by 2100—more than twice the world’s population today. Demographers do not expect that to happen, but the projection shows how powerfully fertility drives growth.



SOURCE: WORLD POPULATION PROSPECTS: THE 2015 REVISION, POPULATION DIVISION, DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS, UNITED NATIONS, 2015. DOWNLOADED NOVEMBER 19, 2015. <http://esa.un.org/wpp/>. Download/Standard/Population

more than 1.3 billion, according to the U.N.'s projections. Demographers Jean-Pierre Guengant of the Research Institute for Development in France and John May of the Population Reference Bureau predict that the continent's biggest cities will explode in size by 2050: Lagos, Nigeria, from 11 million residents in 2010 to 40 million; Kinshasa, Democratic Republic of the Congo, from 8.4 million to 31 million. A scene in the 2005 film *The Constant Gardener* offers a view of this future, with sweeps above Kibera in Nairobi, Kenya—the continent's largest slum, with

half a million to a million residents (no one really knows the number). Kibera's corrugated-metal roofs extend almost to the horizon in every direction. Based on current projections, hundreds of communities this size would probably form across Africa by midcentury.

The prospect of a crowded, confrontational and urban continent has begun to worry Africa's national leaders, most of whom have traditionally favored population growth. They are starting to speak up. In 2012 the then prime ministers of Ethiopia and

Rwanda called for new efforts to expand the use of family planning to "reduce poverty and hunger, preserve natural resources and adapt to the consequences of climate change and environmental degradation." Kenyan-born Musimbi Kanyoro, president of the Global Fund for Women, has recently called for "rights-based, culturally appropriate ways to slow population growth while enhancing human dignity and thoughtful development."

It is not surprising that access to family planning is one of the steps receiving renewed attention. Today only 29 percent of married African women of child-bearing age use modern contraception. On all other continents the rate is solidly more than 50 percent. Surveys also show that more than a third of African pregnancies are unintended; in sub-Saharan Africa 58 percent of women aged 15 to 49 who are sexually active but do not want to become pregnant are not using modern contraception.

Djenaba, a teenage girl whom I interviewed some years ago, testified to that tension in her remote village in Mali, a country where only one woman in 10 uses contraception. Just past her midteens, she was already the mother of two young children. When I first asked how many children she wanted to have, she responded, eyes downcast, "As many as I can." But after half an hour of conversation she faced me directly, her eyes misting, and told me she wished she could take contraceptive pills to get some rest from child-bearing and soon stop altogether.

Any transition to prosperity requires a significant fertility decline. But that "can only be achieved if contraceptive coverage increases markedly from present low levels to rates of about 60 percent by 2050," noted Guengant and May in a 2013 paper. "This will prove difficult to achieve."

EARLY SUCCESSES

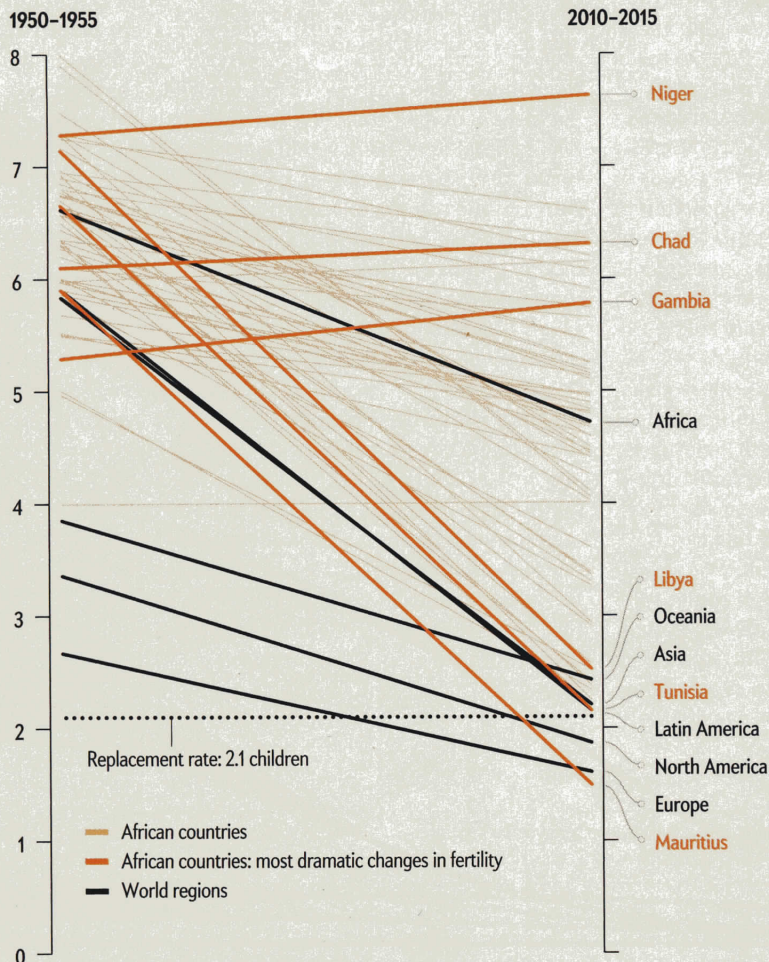
THE TREND TO URBANIZATION could, on its own, shrink family size somewhat. Children are more expensive to raise in cities

THE CHALLENGE

Fertility Rates Must Fall

The average number of children born to women in Africa has slowly decreased since the early 1950s, but the fertility rate has dropped faster in every other world region (*black lines*). The rate in Africa is still about 4.7 children; no other regions is above 2.5. The birth rate in certain African countries (*orange lines*) remains stubbornly high: 7.6 in Niger, 6.3 in Chad, 5.8 in the Gambia. These nations could learn from Mauritius, which has lowered its rate from six to 1.5, and Tunisia, which has dropped from 6.6 to 2.2. For population to level off in Africa or the world, average fertility has to settle at the replacement rate of approximately 2.1—the number at which offspring simply replace their parents.

Slow to Change (total fertility rate: children born per woman)



SOURCE: WORLD POPULATION PROSPECTS: THE 2015 REVISION, POPULATION DIVISION, DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS, UNITED NATIONS, 2015. DOWNLOADED NOVEMBER 19, 2015. <http://esa.un.org/unpd/wpp/Download/Population>



COMMUNITY HEALTH WORKERS are often most successful in changing minds. A local worker in Shompole, Kenya, tells young Masai mothers how to use condoms (above). An adviser in Laniar, Senegal, explains how an intrauterine device works (right).

and are less likely to contribute to their parents' income, and parents are more likely to shift from traditional to modern ideas about ideal family size and the use of family planning. Of course, that is not a full solution. Ironically, certain African countries have significantly reduced fertility rates and have lessons to teach. The greatest is the benefit of combining family-planning access with efforts to give women more control over their lives and families.

In the Arabic north and in South Africa and neighboring nations, fertility rates have declined to three or less, approaching those in the rest of the world. In contrast, in the three vast subregions—East, Central and West Africa—fertility rates range from four to seven or higher.

The bright spots began their work years ago. Africa's half-dozen small island states have some of the continent's smallest families. One of the most rapid fertility declines in history occurred in Mauritius, east of Madagascar. The average fell from more than six in the 1960s to 2.3 two decades later. Today the rate is about 1.5, comparable to Europe and Japan. The steepest drop took place in the 1960s and early 1970s in the absence of any economic growth. Mauritians were relatively well educated, women as well as men. And by the early 1960s the national government overcame opposition from various groups, including Catholics and Muslims, to successfully promote family planning. Within two decades four



out of five reproductive-age women were using contraception.

In 1957 Tunisia's first president, Habib Bourguiba, set in motion a sea change in the legal status and reproductive health of women hard to imagine in a mostly Muslim country. Bourguiba guaranteed women full citizenship rights, including the right to vote and to remove the veil. He pledged universal primary school attendance for girls as well as boys, banned polygamy, raised minimum marriage ages and granted women the right to divorce. He legalized contraception and then subsidized abortions for women with large families. By the mid-1960s mobile family-planning clinics were offering oral contraceptives throughout the country. Bourguiba was no democrat—his tightly controlled National Assembly elected him president for life in 1975—but his social reforms were left in place after he was deposed in 1987. Tu-

nisian fertility fell from seven children to two in the early 2000s (it has since ticked up slightly). Somewhat less dramatic and more recent examples of presidential leadership have helped ease fertility in Kenya, Ghana and South Africa.

Mauritius and Tunisia demonstrate that the key to trimming family size is a consistent focus on improving women's lives, including economic opportunities and legal guarantees that are as equal as possible with those for males. Despite perceptions to the contrary, national economic growth alone does not push fertility down powerfully.

AN INTEGRATED STRATEGY

HOW CAN THE REST of Africa duplicate such success? The first step is to recognize that women and couples, not governments, hold the right to decide how many children to have. Women who are treated by their governments and the people around them as equal to men are more likely to conclude that *they* should decide whether and when to become pregnant, with the net result being smaller family size.

Education, especially in secondary school, turbocharges this empowerment. Education teaches girls and young women about nutrition, medicine and vaccination. But education also opens up a world of opportunity—economic, social, civic, political and artistic. Education spurs young people to seek contraceptives and to plan smaller families as they learn about the world, their bodies and the potential to steer their own destinies. African women with no education have, on average, 5.4 children, according to the International Institute for Applied Systems Analysis. Women who have completed primary school have, on average, 4.3 children. A big drop, to 2.7, correlates with completion of secondary school. For those who go on to college, fertility is 2.2.

Better education of young men is also vital. Young people of both genders who complete comprehensive sex education courses are more likely to delay having sex, which reduces early and unwanted pregnancy. The HIV/AIDS pandemic stoked the spread of sex education, at least in southern and eastern Africa. But its quality is uneven, and it is absent altogether in much of the continent.

The impact of sex education and higher educational attainment by women can be squandered if family planning goes unsupported by governments and society at large, however. Even women with graduate degrees cannot manufacture their own contraceptives in their homes.

African leaders appear to be gradually recognizing this dire situation. Uganda's president Yoweri Museveni long opposed family planning, but in July 2014 he hosted an all-Africa conference on the need to make it more widely available. Government-funded voucher programs in Kenya and Uganda and subsidized maternal and child health care in Zimbabwe encourage low-income individuals and couples to visit clinics. Many walk out with a method of contraception that will prevent unwanted pregnancies and space out wanted ones. In Malawi, cash transfers from an experimental program to schoolgirls and their parents or guardians have encouraged school attendance, contributing to



HOME VISITS, here supported by the William and Flora Hewlett Foundation, are vital to bringing family-planning information to remote villages such as Mbale, Uganda (above).

higher educational attainment, later sexual activity and marriage, and has reduced teen pregnancy.

Ethiopia's government recently recruited 38,000 health extension workers, armed them with information and supplies, and dispatched them to rural areas, where 80 percent of the country's population lives. Pedaling U.S.-donated bicycles to remote villages, the health workers offer family-planning information and contraceptives to women and, when they are supportive, their husbands. Fertility declined over a recent three-year period from 4.8 to 4.1. Similarly impressive declines are turning up in communities in Kenya and Ghana and even in the megacity of Kinshasa.

In many places, however, the leadership shift is halfhearted. The continent's mostly male presidents still seem to think there is strength in numbers and that women should not be reaching for equality with men. "It would help if African presidents would visit family-planning clinics," May says. "That can really make a difference in attitudes. But instead they always like to go to the immunization clinics."

CHANGING MEN'S ATTITUDES

INDEED, MUCH DEPENDS ON the men in women's lives. Unfortunately, helping women plan their families stealthily—by using contraceptive injections, for example—is a leading strategy because many male partners believe childbearing decisions are theirs alone to make. Men also tend to want one to three more children than women do, not surprising given who gets pregnant, gives birth and handles most of the child care.

The differences in male and female outlooks sometimes get expressed in ugly ways. A woman's interest in or use of contraception can make her vulnerable to abuse from her male partner. A Nigerian study presented at a 2011 conference found that 30 percent of women who are or ever were married report some degree of "intimate partner violence"—sexual, physical or emotional. Contraceptive users and women with some primary education were more likely than nonusers and those with no schooling to have en-

countered such abuse. Even in Rwanda, with all its attention to female empowerment, 31 percent of women reported in 2010 that they had experienced violence from a husband or partner.

Actual violence was not the barrier for then 26-year-old Faridah Nalubega. She intended to have just two or three children, the most she felt she could afford by selling fried fish in Kampala, Uganda, according to PAI, a U.S.-based family-planning advocacy group. But she ended up with six children—in large part, she told PAI, because her husband forbade her to use contraceptive pills and her local family-planning clinic offered no suitable alternative.

Attitudes may be changing. Men whom I have interviewed in my travels in Africa have spoken wistfully of the days when there were fewer people and more forests, and sometimes they have voiced support for family planning as a way to slow these discouraging trends. Some of them have also expressed respect for women as colleagues. “The women on the council see things in different ways and come up with ideas none of the rest of us would have thought of,” a male city council member told me in Tanzania. “We wouldn’t want to lose them now.” His statement reflects a larger truth: fertility can decline in part through what sociologists call “ideational change”—a rising acceptance of concepts that were once viewed as radical or even abhorrent. Tanzania, for example, is pondering a draft constitution that would grant women equal status to men in property ownership, inheritance and other legal rights.

Women are moving forcefully into unprecedented positions of government leadership, too. Today Rwanda has a minister of gender and a parliament with the highest proportion of women in the world—nearly two thirds. Joyce Banda was Malawi’s president from 2012 to 2014. Liberia’s current president is Ellen Johnson Sirleaf. Ngozi Okonjo-Iweala served as foreign minister and finance minister of Nigeria, the first woman to hold either post. The chair of the African Union Commission is Nkosazana Dlamini Zuma of South Africa. When girls see women in these positions, it alters their calculus about their own options.

PUSH WITHOUT PUSHING

NIGER IN WEST AFRICA offers an example of why an integrated strategy for lowering population growth, combined with government involvement, is so critical. There, in one of the world’s poorest nations, the average fertility is 7.5 children per woman, and it has barely dipped since measurements began in 1950. Women and men surveyed say that the ideal family is even larger.

Demographers are a bit stumped as to why, but the high number probably stems from a combination of factors. They include religious beliefs, high death rates among young children, a large proportion of rural residents who depend on children to work poor land, large families being valued as a matter of status (especially for men), and women having low status (children prop up women’s value in marriages, which are often polygamous). Child-rearing is typically shared in extended families, notes demographer John Casterline of Ohio State University, easing the burden—and therefore easing the decision among parents to have another baby. Mamadou Tandja, president of Niger until 2010, used to spread his arms to denote the vast expanse of his country, bigger than Texas, telling visitors there was plenty of room for a much larger population.

A multipronged strategy requires strong engagement by gov-

ernment, community involvement and money, says Guengant, who has worked in West Africa and elsewhere on the continent. Often, however, he notes, governments fail to deliver on promises. At a 2012 international conference in London, a top Ghanaian Ministry of Health official assured the audience that his country’s national health insurance program would reimburse personal expenses for family planning. Three years later the government is still pondering how to put the reimbursement plan into effect. Implementation by most governments “is a disaster,” he says. “You have to have a push, either from government or from civil society, or both. In Africa, we miss the push.”

“Push” is a touchy word among those who fear a population-control mentality. But outside of China, where the new two-child policy still limits reproductive freedom, no one is proposing limits on family size. Guengant is talking about pushing leaders to step up—to bravely raise public and policy conversations about slower population growth. What is needed is a Zen approach to the art of population—a way of easing growth not by striving directly for that outcome but by creating the conditions through which it occurs naturally.

Cultures and attitudes can evolve—often rapidly, as the drop in fertility rates in Tunisia and Mauritius demonstrate. Sadly, I have no idea what became of Djenaba in Mali and her hopes of managing her own childbearing. But her words are a reminder that efforts to assure all women the means and social support to prevent unwanted pregnancies, without coercion or pressure, are paramount. Such efforts mark the only ethical and feasible path to an African population that slows its growth and eventually stops growing, as all populations must. There, and everywhere, such a population can live prosperously, resiliently and in harmony with the environment.

The empowerment of women needs no demographic justification. But it happens that women who can raise their sights high and manage their own lives also decide—and manage—to have fewer children and to have them later in life. Even if population growth did not matter, the future of Africa and the world would be better if every African girl and woman were healthy and educated and free to reach for her own ambitious dreams, to safely refuse unwanted male attention, and to have a child only when and with whom she chooses.

Whether Africa finishes the century with several billion people or something much closer to its current 1.2 billion could make all the difference in its development, prosperity and resilience in the face of inevitable challenges. ■

MORE TO EXPLORE

Africa’s Demographic Challenges: How a Young Population Can Make Development Possible. Lilli Sippel et al. Berlin Institute for Population and Development, 2011. www.berlin-institut.org/fileadmin/user_upload/Afrika/Africas_demographic_challenges.pdf

African Demography. Jean-Pierre Guengant and John F. May in *Global Journal of Emerging Market Economies*, Vol. 5, No. 3, pages 215–267; September 2013.

Unmet Need and Fertility Decline: A Comparative Perspective on Prospects in Sub-Saharan Africa. John B. Casterline and Laila O. El-Zeini in *Studies in Family Planning*, Vol. 45, No. 2, pages 227–245; June 2014.

FROM OUR ARCHIVES

Population & Sustainability. Robert Engelman; *Scientific American Earth* 3.0, June 2009.

scientificamerican.com/magazine/sa