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*Responding to the  
Social Challenge*

Early in this new century, the world is facing many long-standing social challenges, including hunger, illiteracy, and disease. If developing countries add nearly 3 billion people by mid-century, as projected, population growth will continue to undermine efforts to improve the human condition. National food bubbles based on overplowing and overpumping will move toward the bursting point. The gap between the billion richest and the billion poorest will continue to widen, putting even more stress on the international political fabric.<sup>1</sup>

As a species, our failure to control our numbers is taking a frightening toll. Slowing population growth is the key to eradicating poverty and its distressing symptoms, and, conversely, eradicating poverty is the key to slowing population growth. With time running out, the urgency of moving simultaneously on both fronts seems clear.

The challenge is to create quickly the social conditions that will accelerate the shift to smaller families. Among these conditions are universal education, good nutrition, and prevention of infectious diseases. We now have the knowledge and the resources to reach these goals. In an increasingly integrated world, we also have a vested interest in doing so.

**Stabilizing Population**

Some 36 countries now have populations that are either stable or declining slowly. All are in Europe, except Japan. In countries with the lowest fertility rates, including Japan, Russia, Germany, and Italy, populations will actually decline over the next half-century. But other countries are projected to more than double their populations by then, including Pakistan, Nigeria, and Ethiopia. India, growing at nearly 2 percent a year, is projected to reach 1.5 billion people by 2050, adding 515 million in just 50 years—roughly twice as many people as currently live in the United States. Well before then it will become the world's most populous country.<sup>2</sup>

A larger group of countries has reduced fertility to the replacement level or just below. They are headed for population stability after large groups of young people move through their reproductive years. Included in this group are China, the world's most populous country, and the United States, the third most populous one.

U.N. projections show world population growth under three different assumptions about fertility levels. The medium projection, the one most commonly used, has world population reaching 8.9 billion by 2050. The high projection has population going to 10.6 billion. The low projection, which has population peaking at 7.5 billion in 2039 and then declining, assumes that the world will quickly move below replacement-level fertility to 1.7 children per couple. If the goal is to eradicate hunger and illiteracy, we have little choice but to strive for the lower projection.<sup>3</sup>

Slowing world population growth means that all women who want to plan their families should have access to the family planning services needed to do so. Unfortunately, at present more than 100 million couples cannot obtain the services they need to limit the size

of their families. Since most of them are in countries where water scarcity is already a major issue, filling the family planning gap may be the most urgent item on the global agenda. The benefits are enormous and the costs are minimal.<sup>4</sup>

The good news is that countries that want to reduce the size of families quickly and stabilize their population can do so. For example, my colleague Janet Larsen describes how, in just one decade, Iran dropped its population growth rate from one of the world's fastest to one similar to that in the United States. When Ayatollah Khomeini assumed leadership in Iran in 1979, he immediately dismantled the family planning programs that the Shah had put in place in 1967 and advocated large families. At war with Iraq between 1980 and 1988, Khomeini wanted large families to increase soldiers for Islam. His goal was an army of 20 million. In response to his pleas, fertility levels climbed, pushing Iran's population growth up to 4.4 percent per year, a level approaching the biological maximum. As this enormous growth began to burden the economy and overburden the environment, Iran's leaders began to see that overcrowding, environmental degradation, and unemployment were becoming serious problems.<sup>5</sup>

In 1989 the government did an about-face and Iran restored its family planning program. In May 1993, a national family planning law was passed. The resources of several government ministries, including education, culture, and health, were mobilized to encourage smaller families. Iran Broadcasting was given the responsibility for raising awareness of population issues and of the availability of family planning services. Some 15,000 "health houses" were established to provide rural populations with health services and family planning.<sup>6</sup>

Religious leaders were directly involved in what

amounted to a crusade for smaller families. Iran introduced a full panoply of contraceptive measures, including male sterilization—a first among Muslim countries. All forms of birth control, including contraceptives such as the pill and sterilization, were free of charge. In fact, Iran became a pioneer—the only country to require couples to take a class on modern contraception before receiving a marriage license.<sup>7</sup>

In addition to the direct health care interventions, a broad-based effort was made to increase female literacy, boosting it from 25 percent in 1970 to more than 70 percent in 2000. Female school enrollment increased from 60 to 90 percent. Television was used to disseminate information on family planning throughout the country, taking advantage of the 70 percent of rural households that had television. As a result of the impressive effort launched in 1989, the average family size in Iran has dropped from seven children to less than three. During the seven years from 1987 to 1994, Iran cut its population growth rate by half, setting an example for other countries whose populations are still growing rapidly. The overall population growth rate of 1.2 percent in 2001 is only slightly higher than that of the United States.<sup>8</sup>

If a country like Iran, with a strong tradition of Islamic fundamentalism, can move quickly toward population stability, other countries should be able to do the same. Countries everywhere have little choice but to strive for an average of two children per couple. There is no feasible alternative. Any population that increases or decreases continually over the long term is not sustainable. The time has come for world leaders—including the Secretary-General of the United Nations, the President of the World Bank, and the President of the United States—to publicly recognize that the earth cannot easily support more than two children per family.

The costs of providing reproductive health and family planning services are not that high. At the International Conference on Population and Development held in 1994 in Cairo, it was estimated that a fully funded population and reproductive health program for the next 20 years would cost roughly \$17 billion annually by 2000 and \$22 billion by 2015. Developing countries agreed to cover two thirds of this, while industrial countries were to cover one third. Unfortunately, developing countries have fallen short of their pledge by roughly one third, while donor countries have fallen short by two thirds, leaving a combined gap of roughly \$10 billion per year.<sup>9</sup>

The United Nations calculated that these shortfalls were leading to a cumulative 122 million unintended pregnancies by 2000. Of these, an estimated one third ended in abortion. The remaining two thirds led to 65,000 deaths during childbirth and 844,000 women who suffered chronic or permanent injury from their pregnancies. The social costs of not filling the family planning gap are high.<sup>10</sup>

Reinforcing these U.N. calculations are data from the grassroots showing how access to family planning services helps couples achieve their desired family size. Surveys in Honduras show poor women having twice as many children as they want, while women in high socioeconomic groups are highly successful at having the number of children they desire. (See Table 10–1.)<sup>11</sup>

The benefits of restricting family size have been calculated for Bangladesh, where analysts concluded that the \$62 spent by the government to prevent an unwanted birth saved \$615 on other social services. Investing in reproductive health and family planning leaves more fiscal resources for education and health care. These numbers suggest that, for donor countries, providing the additional \$10 billion or so needed to ensure that all cou-

Table 10–1. *Honduras: Ideal and Actual Number of Children Born per Woman, According to Socioeconomic Level*

Socio-economic Level	Children Born Per Woman	Desired Family Size (number of children)	Difference
Low	6.9	3.4	3.5
Middle	4.1	2.9	1.2
High	2.7	2.7	0.0

Source: See endnote 11.

ples who wanted to limit family size have access to the services they need would yield high social returns in improved education and health care.<sup>12</sup>

### Universal Basic Education

One way of narrowing the gap between rich and poor is universal education, but currently some 115 million children between the ages of 6 and 12 do not attend school. They are starting life with a severe handicap, one that virtually ensures that they will remain in abject poverty and that the gap between the poor and the rich will continue to widen.<sup>13</sup>

Recognizing this, the United Nations set universal primary education by 2015 as one of its Millennium Development Goals. Some 88 countries will fail to achieve this if they stay on the present course. The need for much greater effort is obvious. The World Bank has taken the lead with its Education for All plan. If fully implement-

ed, all children in poor countries would get a primary school education by 2015. No child would be deprived of education because his or her parents cannot afford books and school fees.<sup>14</sup>

The benefits of education are many. The educational level of females is the principal determinant of the achievement level of their children. Children of educated mothers are better nourished not necessarily because the family income is higher but because the mother's better understanding of nutrition leads to a better choice of foods and healthier methods of preparation. It is the educational level of the mother that sets the tone for the family. Educating her is the key to breaking out of poverty.<sup>15</sup>

The education of girls leads to smaller families. In every society for which data are available, fertility falls as female educational levels rise. Simply stated, the more education women have, the fewer children they bear. And mothers with at least five years of school lose fewer infants during childbirth or due to early illnesses than their uneducated peers do. Among other things, these women can read the instructions on medications and they understand better how to take care of themselves during pregnancy. Economist Gene Sperling, the head of the Forum on Universal Education at the Brookings Institution, reports on a study of 72 countries that concluded that "the expansion of female secondary education may be the single best lever for achieving substantial reductions in fertility."<sup>16</sup>

Basic education increases agricultural productivity. Agricultural extension services that cannot use printed materials to disseminate information on improved agricultural practices are severely handicapped. So too are farmers who cannot read the instructions on a bag of fertilizer. The inability to read the instructions on a pesticide container can be life-threatening.

Under the World Bank's Education for All program, any country with a well-designed plan to achieve universal primary education should receive financial support. The three principal requirements are that a country submit a sensible plan to reach universal basic education, commit a meaningful share of its own resources to the plan, and have transparent budgeting and accounting practices. Monitoring 10 fast-track countries, singled out because they quickly submit solid plans for achieving the Education for All goals, could provide useful information on what works and what does not work in various social situations.<sup>17</sup>

At a time when HIV is spreading throughout the world, schools provide the institutional means to educate young people about the risks of infection. The time to inform and educate about the virus and about the lifestyles that foster its spread is when children are young, not when they are in their teens and often already infected. Young people can also be mobilized to conduct educational campaigns among their peers.

One great need in developing countries, particularly those where the ranks of teachers are being decimated by AIDS, is more teacher training. Providing scholarships for promising students from poor families to attend these training institutes in exchange for a commitment to teach for a fixed period of time, say five years, could be a highly profitable investment. It would help ensure that the human resources are available to reach the universal primary education goal, and it would also open the way for an upwelling of talent from the poorest segments of society.

Sperling believes that every plan should provide for getting to the hardest-to-reach segments of society, especially poor girls in rural areas. He notes that Ethiopia has pioneered this with Girls Advisory Committees. Representatives of these groups go to the parents who are seeking early marriage for their daughters and encourage

them to keep their children in school. Some countries, Brazil and Bangladesh among them, actually provide small scholarships for girls, thus helping to ensure that girls from poor families get a basic education.<sup>18</sup>

As the world becomes ever more integrated economically, its 875 million illiterate adults are severely handicapped. This deficit can perhaps best be dealt with by launching adult literacy programs using volunteers. The international community could offer seed money to provide the educational materials and the external advisors. But the actual programs would be staffed largely by local volunteers. Bangladesh and Iran, both with successful adult literacy programs, can serve as models.<sup>19</sup>

The World Bank estimates that external funding of \$2.5–5 billion a year would be needed if the 47 poorest countries are to achieve universal primary education by 2015. Doing this in the 88 countries that are unlikely to reach universal primary education by 2015 would cost perhaps three times as much. Even if it were to cost \$15 billion per year, it would still be a bargain. At a time when personal computers give many schoolchildren access not only to books but also to the vast information resources of the Internet, having other children who never go to school is no longer acceptable.<sup>20</sup>

### Curbing the HIV Epidemic

The key to curbing the AIDS epidemic is education about prevention. We know how the disease is transmitted. It is not a medical mystery. In Africa, where once there was a stigma associated even with mentioning the disease, countries are beginning to design effective prevention education programs. The first goal is to quickly reduce the number of new infections below the number of deaths, thus shrinking the number of those who are capable of infecting others.

Concentrating on the groups in a society who are most likely to spread the disease is particularly effective. In Africa, infected truck drivers who travel far from home for extended periods often engage in commercial sex, spreading it from one country to another. They are thus a target group in reducing infections. Sex workers are also centrally involved in the spread of the disease. In India, for example, the country's 2 million female sex workers have an average of two encounters per day, making them a key group to educate about HIV risks and the life-saving value of using a condom.<sup>21</sup>

Another target group is the military. After soldiers become infected, usually from engaging in commercial sex, they return to their home communities and spread the virus further. In Nigeria, where the adult HIV infection rate is 6 percent, President Olusegun Obasanjo requires free distribution of condoms to all military personnel. A third important group, intravenous drug users who share needles, figures prominently in the spread of the virus in the former Soviet Republics.<sup>22</sup>

The Global Fund to Fight AIDS, Tuberculosis and Malaria, established in 2001, needs \$10.5 billion for the next five years. Thus far, it has received pledges of just over \$3 billion. The stakes in this game are high. These diseases affect national security, social progress, and the global economy. If failed economies default on their debts, it will affect the entire world.<sup>23</sup>

At the most fundamental level, dealing with the HIV threat requires roughly 8 billion condoms a year in the developing world and Eastern Europe. Including those needed for contraception adds another 2 billion. But of the 10 billion condoms needed, only a billion are being distributed, leaving a shortfall of 9 billion. Costing only 3¢ each, or \$270 million, the cost/benefit ratio of supplying these condoms must go off the top of the chart. The

condom gap is huge, but the costs of filling it are small. In the excellent study entitled *Condoms Count: Meeting the Need in the Era of HIV/AIDS*, Population Action International notes that “the costs of getting condoms into the hands of users—which involves improving access, logistics and distribution capacity, raising awareness, and promoting use—is many times that of the supplies themselves.” If we assumed that these costs are six times the price of the condoms themselves, filling this gap would still cost only \$1.9 billion.<sup>24</sup>

Sadly, even though condoms are the only technology available to prevent the spread of HIV, the U.S. government is de-emphasizing their use, insisting that abstinence be given top priority. An effective campaign to stop AIDS cannot function without condoms.<sup>25</sup>

One of the few African countries to successfully lower the HIV infection rate after the epidemic became well established is Uganda. Under the strong personal leadership of President Yoweri Museveni, over the last dozen years the share of adults infected has dropped from a peak of 14 percent down to 5 percent. More recently, Zambia appears to be making progress in reducing infection rates among its young people as a result of a concerted national campaign led by church groups. Senegal occupies a position at the front of the pack because it acted early to check the spread of the virus, holding it to less than 1 percent today.<sup>26</sup>

The financial resources and medical personnel currently available to treat those who are already HIV-positive are minuscule compared with the number of people who need treatment. For example, of the 29 million people who were HIV-positive in sub-Saharan Africa at the end of 2002, only 30,000 were receiving the anti-retroviral drug treatment that is widely available in industrial countries. Africa today is a window on the future of

other countries, such as India and China, if they do not respond quickly to contain the virus that is already well established within their borders.<sup>27</sup>

### Health for All

While heart disease and cancer (largely the diseases of aging), obesity, and smoking dominate health concerns in industrial countries, in developing countries infectious diseases are the overriding health concern. Beyond AIDS, the principal infectious diseases are diarrhea, respiratory illnesses, tuberculosis, malaria, and childhood diseases such as measles.

Hunger amplifies the effects of infectious diseases. Diarrheal disease, which is seldom fatal in industrial countries, claims some 1.5 million lives each year, mostly of children in the developing world. Among well-nourished children, measles are rarely fatal, yet this disease kills some 800,000 children annually, nearly all of them weakened by hunger and easily overwhelmed. Respiratory illnesses, a minor problem in a healthy population, also take a heavy toll among children with weakened immune systems.<sup>28</sup>

Traditional infectious diseases, such as tuberculosis and malaria, annually claim 1.6 million and 1.1 million lives, respectively. Tuberculosis is particularly challenging for doctors because some strains are resistant to antibiotics. It is a leading health issue in Russia and neighboring countries as well as in developing ones.<sup>29</sup>

Malaria has a sharp geographic focus, with 90 percent of the 1 million deaths last year occurring in Africa. A Roll Back Malaria initiative from the World Health Organization (WHO) is designed to reduce the malaria threat. Among other things, it involves providing low-cost insecticide-treated bednets. New initiatives within Africa in malaria research and drug and vaccine development could also help curb the disease.<sup>30</sup>

Many countries that are no longer able to afford the vaccines for childhood diseases, such as measles, have fallen behind in their vaccination programs. Lacking the funds to invest today, they pay a far higher price tomorrow. There are not many situations where just a few pennies spent per youngster can make as much difference as vaccination programs can.<sup>31</sup>

Along with the eradication of hunger, the provision of safe water is one of the keys to better health for children. The realistic option now may be to bypass efforts to build costly water-based sewage removal and sewage treatment systems and to opt instead for water-free waste disposal systems that do not disperse disease pathogens, like the dry toilets described in Chapter 7. This switch would simultaneously help alleviate water scarcity, reduce the dissemination of disease agents in water systems, and close the nutrient cycle.

Beyond infectious diseases, air pollution, automobiles, and cigarettes claim millions of lives each year. WHO estimates that air pollution, largely from power plants and automobiles, claims 3 million lives a year. While most industrial countries have made progress in reducing urban air pollution, in developing countries this problem is worsening.<sup>32</sup>

Worldwide, automobile accidents kill 1.2 million people a year, making car ownership almost as dangerous as cigarette smoking. And cars are also a major source of the air pollution that kills drivers and nondrivers alike. If we allocate a third of air pollution deaths to pollutants from automobile exhaust, auto fatalities would exceed 2 million.<sup>33</sup>

Some leading sources of premature death are lifestyle-related. Cigarettes take a particularly heavy toll. WHO estimates that 4.9 million people died in 2000 of tobacco-related illnesses. Today there are some 25 known tobacco-related diseases, including heart disease, stroke,

respiratory illness, several forms of cancer, and male impotence. Cigarette smoke kills more people each year than all other air pollutants combined—nearly 5 million versus 3 million.<sup>34</sup>

Impressive progress is being made in reducing cigarette smoking. After a century-long buildup of a tobacco habit, the world is turning away from cigarettes, following the U.S. lead and with a strong boost from WHO leadership in its “tobacco free” initiative. This will no doubt be helped by the Framework Convention on Tobacco Control, the first international accord to deal entirely with a health issue, which was adopted unanimously in Geneva in May 2003.<sup>35</sup>

Ironically, the country that gave the world tobacco is now leading us away from it. In the United States, the number of cigarettes smoked per person has dropped from 2,844 in 1976 to 1,593 in 2002—a decline of 44 percent. Worldwide, where the downturn lags that of the United States by roughly a decade, usage has dropped from the historical high of 1,020 cigarettes smoked per person in 1986 to 878 in 2002, a fall of 14 percent.<sup>36</sup>

Indeed, smoking is on the decline in nearly all the major cigarette-consuming countries, including such strongholds as France, China, and Japan. The number of cigarettes smoked per person has dropped 20 percent in France since peaking in 1985, 8 percent in China since 1990, and 14 percent in Japan since 1992.<sup>37</sup>

One of the principal achievements of the international community in recent decades has been the eradication of smallpox, an effort led by WHO. This successful elimination of a feared disease, which required the worldwide immunization of the poorest of the world’s poor, not only now saves hundreds of millions of dollars each year in smallpox vaccination programs but also billions of dollars in health care, and has lightened the burden of

disease worldwide. Similarly, the WHO-led international campaign to eradicate polio is on the verge of eliminating another of the world's great scourges, one that did not distinguish between the rich and the poor.<sup>38</sup>

Another impressive gain on the health front has come from a campaign led by UNICEF to treat the symptoms of diarrheal disease with oral rehydration therapy. This remarkably simple technique, the oral administration of a mild saline solution, has been extremely effective—reducing deaths from diarrhea among children from 4.6 million in 1980 to 1.5 million in 1999. Few investments have saved so many lives at such a low cost.<sup>39</sup>

A recent study commissioned by WHO Director-General Gro Harlem Brundtland looked at the economics of health care in developing countries and concluded that providing the most basic health care services—the sort that could be supplied by a village-level clinic—would yield enormous economic benefits for the developing countries and for the world as a whole. The authors estimated that providing basic universal health care in developing countries will require donor grants totaling \$27 billion in 2007, scaled up to \$38 billion in 2015. Of the first commitment, for 2007, \$6 billion is already being provided by donors. In addition to basic services, this figure includes funding for the Global Fund to Fight AIDS, Tuberculosis and Malaria and for universal childhood vaccinations. The report estimated that the total program would cost one tenth of 1 percent of the gross national product of industrial countries. Thus health care is a prime example of an ounce of investment being worth a pound of cure.<sup>40</sup>

### **School Lunches for the Poor**

For more than 50 years, every child in public school in the United States has had access to the school lunch

program, ensuring one good meal each day. George McGovern and Robert Dole, both former members of the U.S. Senate agricultural committee, believe this program should be exported to the world's poorest countries.<sup>41</sup>

The U.S. national school lunch program was launched in 1946 largely as the result of data accumulated during the war showing that one third of the country's youths were physically unfit for military service, mainly because of a poor diet. In retrospect, there has been no denying the benefits of the national school lunch program that has continued uninterrupted for 56 years. McGovern writes that shortly after he became director of the Food for Peace program in the early 1960s, the Dean of the University of Georgia called him to say that the school lunch program had done more to develop the South than any other federal program.<sup>42</sup>

The appeal of school lunch programs for children in other countries is even greater than in the United States because these children are hungrier. Children who are ill or hungry miss many days of school. And even when they are there, they do not learn as well. Jeffrey Sachs, director of Columbia University's Earth Institute, notes, "Sick children often face a lifetime of diminished productivity because of interruptions in schooling together with cognitive and physical impairment." But when school lunch programs are launched in low-income countries, school enrollment jumps. The children's attention span increases. Their academic performance goes up. Fewer days are missed from school, and children spend more years there.<sup>43</sup>

Girls benefit especially. Drawn to school by the lunch, they stay in school longer, marry later, and have fewer children. This is a win-win-win situation. Adopting this program in the 44 lowest-income countries would cost an



tion growth in half between 1951 and 1958, was one of the first countries to benefit from the demographic bonus. South Korea and Taiwan followed, and more recently China has benefited from the earlier sharp reduction in its birth rate. This effect lasts for only a few decades, but it is enough to launch a country into the modern era.<sup>48</sup>

This chapter has discussed the social preconditions for accelerating the shift to smaller families. These include filling several funding gaps—those needed to reach universal primary education; to fight infectious diseases, such as AIDS, tuberculosis, and malaria; to provide reproductive health care; and to contain the HIV epidemic, among others. Collectively, the seven initiatives discussed are estimated to cost another \$62 billion a year, which could be shared by the United States and other industrial countries. (See Table 10–2.) Encouragingly, several countries in Europe are convinced of the need to forge ahead in this direction.<sup>49</sup>

The heaviest investments in this effort center on education and health, which are the cornerstones of both human capital development and population stabilization. Education includes both universal primary education and a global campaign to eradicate adult illiteracy. Health care includes the basic interventions involved in controlling infectious diseases, beginning with childhood vaccinations. Adopting the basic health care program outlined in the report to WHO would itself save an estimated 8 million lives per year by 2010. This proposed initiative is a life-transforming one that can literally alter the course of history. It is a way of raising educational levels, improving health, and accelerating the shift to smaller families, a prerequisite of breaking the poverty cycle.

Helping low-income countries break out of the demographic trap is a highly profitable investment for the world's affluent nations. Industrial-country investments

Table 10–2. *Additional Annual Funding Needed to Reach Basic Social Goals*

Goal	Funding (billion dollars)
Universal primary education	15
Adult literacy campaign	4
Reproductive health and family planning	10
Closing the condom gap	2
School lunch programs for 44 poorest countries	6
Assistance to preschool children and pregnant women in 44 poorest countries	4
Universal basic health care	21
Total	62

Source: See endnote 49.

in education, health, and school lunches are in a sense a humanitarian response to the plight of the world's poorest countries. But more fundamentally they are investments in the world in which our children will live.