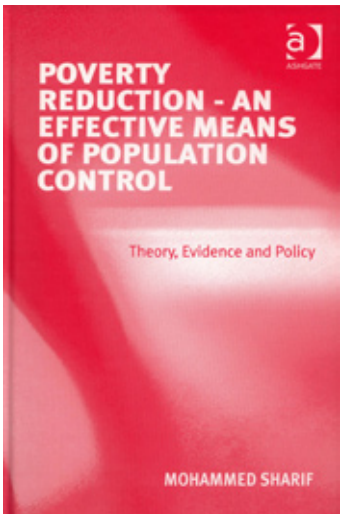
light of recent strides, interdisciplinary collaboration remains a challenge.

Climate change has emerged as the topic *du jour*, and human population and land-use interactions are both major causes of greenhouse gases and viable avenues for their reduction. At a time when urbanization and aging have replaced rural population growth and youthful population structures as the most-discussed demographic trends of the new millennium, the demands of rural population change and urban consumption on rural systems remain the primary drivers of land-use change. As research agendas shift towards climate change, human vulnerability, urbanization, and aging, the conversion of forests to agriculture by rural people still leaves the largest human footprint on the Earth's surface, with consequences both injurious and benevolent. The improved understanding of the connection between human activity and environmental concerns demonstrated in *Population, Land Use, and the Environment,* which synthesizes more than a decade of population-land use research, is both exciting and daunting.

Poverty Reduction: An Effective Means of Population Control



By Mohammed Sharif
London: Ashgate, 2007. 184 pages.

Reviewed by RACHEL NUGENT

Rachel Nugent is deputy director of the Center for Global Development's Global Health Programs. She has 25 years of experience as a development economist with the Population Reference Bureau, the Fogarty International Center of the U.S. National Institutes of Health, and the UN Food and Agriculture Organization, among others.

Population policy in developing countries has long been a controversial topic, not least because the vast amount of research devoted to understanding the key determinants of fertility behavior has been inconclusive. In addition, because population raises sensitive and ideological issues, population policy has been mired in political debates. The combination of slow progress in both the research and policy spheres on the role of population growth in development, and what governments should do to influence that growth, has pushed this crucial topic to the sidelines of most of the important development discussions of our day.

Fertility decisions are driven by a complicated set of social, economic, cultural, and technological conditions that are difficult to sort out. Government policy may be a minor influence on the fertility component of population growth, but in some places and times it can be an important agent of change, even simply by changing decisions at the margin. However, it is not easy to measure the impact of government policy—or any other factors—on fertility. Therefore, research has been sometimes contradictory, sometimes inconclusive, and the strongest results are highly site- and program-specific (see, e.g., Robinson & Ross, 2007; Schultz, 1997). In *Poverty Reduction: An Effective Means of Population Control,* Mohammed Sharif attempts to use both theoretical and empirical analysis to take a fresh look at the topic. Unfortunately, the book is contradictory and inconclusive—and certainly not fresh.

Until very recently, policy advocates and researchers seemed to agree that high rates of

population growth adversely affect development and poverty, and that family planning policies are important tools of development assistance. Recently, however, attention to international population issues has declined alarmingly, stemming from a combination of complacency (due to lower population growth in some countries) and a paucity of effective tools to meet the ongoing twin challenges of poverty reduction and fertility reduction (Cleland et al., 2006; Gwatkin, Wagstaff, & Yazbeck, 2004).

While fertility has declined in many developing countries, and most of the developed world is experiencing stagnant or declining populations, the "population problem" is not solved. In 16 developing countries, total fertility rates exceed 6.0, and low contraceptive prevalence is a major barrier to development (PRB, 2008). Fifty-five countries have fertility rates of 4.0 and higher. Depending on death rates in those countries, this implies their populations will double in 17 years or less. Finally, in these and other developing countries, the highest fertility rates are generally found among the poorest fifth of the population. Thus, the question of population growth and its relationship to poverty is not inconsequential, leaving substantial room for debate about appropriate policies.

Mohammed Sharif's book takes us back to an earlier time by re-opening the debate about whether family planning is good for poor families. Sharif's main arguments are that high fertility is a rational, often beneficial choice for poor families; and that poverty makes a higher number of children desirable. He concludes that only reductions in poverty will bring down fertility rates among the poor. Sharif examines these assertions empirically, and then derives policy implications from the results.

Researchers on this topic have always faced the challenge of demonstrating a direct causal relationship between poverty and fertility. Many correlates of poverty are also associated with high fertility rates. How do we know what causes what? Sharif devotes much of his book to cross-country regression analysis intended to demonstrate that poor people may be acting rationally in choosing large families. Unfortunately, the analysis presented is largely undermined by the failure of his data and methodology to adequately answer "what causes what?"

Sharif compiled data on poverty and related variables for 83 developing countries from various UN sources to test multiple specifications of his model. With countries as the unit of analysis, he finds that high fertility is not a cause of poverty, and illiteracy is not causally related to contraceptive prevalence. Sharif concludes that the fertility choices of poor developing-country citizens are rational, and argues by implication that international family planning advocates have failed because they have not understood poor families' choices and decision-making processes. Half of Sharif's message is certainly right: Poor people are rational. But they are also extremely constrained in their choices, access to information, and time horizons. As a result, their choices may not be optimal—for themselves or society. Sharif does not explore this possibility, and therefore the book does not advance our knowledge of what policies would be useful in reducing these constraints.

Setting aside the book's polemics attacking international family planning advocates, Sharif's cross-country analysis of the determinants of poverty suffers from measurement and econometric issues—not the least of which is the problem of intervening variables. No reasonable person doubts that poverty affects childbearing decisions in a household, and that numbers of children affect a household's likelihood of being impoverished—but many other variables intervene as well. Researchers have spent years trying to specify models in which fertility choice can be isolated from the variables that determine it. Yet Sharif cites almost none of the voluminous empirical and methodological literature in this area (e.g., Birdsall et al., 2001; Eastwood & Lipton, 1999; Schultz, 2005; Livi-Bacci & De Santis, 2004; Oxford, 1994). And some of his results are anomalous; for example, he finds that—in addition to fertility—urbanization and illiteracy have no effect on poverty.

It is difficult to compare Sharif's data and results with other studies. For his preliminary

The highest fertility rates are generally found among the poorest fifth of the population.

assessment of poor people's rationality, he relies on (quite old) data from the government of Bangladesh, even while noting its poor reliability. He uses the UN Statistics Division for cross-country data, but not the Demographic and Health Surveys for important variables such as unmet need, which is commonly defined as the percentage of women or couples who wish to postpone or avoid pregnancy but who do not use contraception.

What causes high fertility? Sharif calculates both poverty and fertility as functions of independent variables, and then in the second stage estimates each as a function of the predicted value of the other. He finds that fertility and poverty are negatively related. He interprets this finding to mean that children serve as assets for poor, rural families and are therefore desired. Thus, he concludes that high fertility is not only a rational, but also a beneficial choice for poor people.

Sharif acknowledges that family planning programs have increased contraceptive use across the world, but points out that the increase is found largely among the well-off in developing countries, and not among the poor. He faults the UN Population Fund for pushing family planning as the solution to high fertility, and recommends that policymakers focus on other factors that underlie poverty.

In these conclusions, Sharif may be half-right. It is reasonable to push for poverty reduction through a multi-pronged approach that addresses underlying causes. No country or global policymaker would dispute the importance of that goal. But what is the policy lesson from his finding that high fertility reduces poverty? And how much can we rely on that finding? Unfortunately, despite the benefit of a much stronger intellectual foundation to draw upon than earlier population policy researchers, Sharif has not made headway in the analytical challenges of separating determinants of fertility from those of poverty and other related factors.

Most observers would not doubt Sharif's assertions that there are close links between fertility and his selected variables. Where they would part from him is in accepting the anomalous results of his econometric analysis, and in deriving policy conclusions from those inconsistent and confusing relationships. Policymakers will obtain little guidance in finding the road ahead from this backward look at population policy.

References

Birdsall, Nancy, Allen C. Kelley, & Steven Sinding. (2001). *Population matters.* Oxford: Oxford University Press.

Cleland, Bernstein, et al. (2006). "Family planning: The unfinished agenda." *The Lancet 368*, 1810-1827.

Eastwood, Robert, & Michael Lipton. (1999). "The impact of changes in human fertility on poverty," *The Journal of Development Studies 36*(1), 1-30.

Gwatkin, Davidson R., Adam Wagstaff, & Abdo Yazbeck. (Eds). (2004). *Reaching the poor with health, nutrition, and population services.* Washington DC: World Bank.

Livi-Bacci, Massimo, & Gustavo De Santis. (2004). *Population and poverty in developing countries.* Oxford: Oxford University Press.

Oxford, Cassen. (Ed.) (1994). *Population and development: Old debates, new conclusions.* New Brunswick, NJ: Transaction Publishers.

Population Reference Bureau (PRB). (2008). *World population data sheet 2008.* Washington, DC: PRB.

Robinson, Warren C. & John A. Ross (Eds.). (2007). *The global family planning revolution.* Washington, DC: World Bank.

Schultz, T. Paul. (1997)."The demand for children in low-income countries." In Mark R. Rosenzweig & Oded Stark (Eds.), *Handbook of population and family economics* (pp. 349-430). Amsterdam: North Holland.

Schultz, T. Paul. (2005). *Effects of fertility decline on family well-being: Opportunities for evaluating population programs.* New Haven, CT: Yale University.