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INTERNATIONAL
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INSTITUTE

2033 K STREET, N.W.
WASHINGTON, D.C. 20006-1002
U.S.A.

PHONE: +1-202-862-5600

FAX: +1-202-467-4439

EMAIL: IFPRI@CGIAR.ORGWEB: WWW.IFPRI.ORG

SIX BILLION AND COUNTING POPULATION GROWTH AND FOOD SECURITY IN THE 21ST CENTURY

KLAUS M. LEISINGER, KARIN SCHMITT, AND
RAJUL PANDYA-LORCH

In 1999 the global population surpassed 6 billion. Never before in human history has the population of Earth been as great as it is today, and never before has it grown so rapidly within one century. Even though population growth is now slowing, absolute population growth will remain high for many years because of the dynamics already set in motion by a youthful age structure. The world has made important progress in slowing population growth, improving the food security and quality of life of the world's people, and protecting the natural resources on which development depends. But progress has not occurred everywhere, nor has it by any means affected everyone.

More people will inevitably mean greater demand for food, water, education, health care, sanitary infrastructure, and jobs, as well as greater pressure on the environment. There must come a point when population growth threatens global food security and the Earth's finite natural resources. But what specific threats does population growth present now and in the coming decades? How can the world achieve sustainable development in the face of an ever-growing population? To what degree can this task be accomplished through human inventiveness and new technology? How important is it to drastically slow population growth? What are the elements of an effective and human-centered population policy? These are the questions addressed by the book *Six Billion and Counting: Population Growth and Food Security in the 21st Century* by Klaus M. Leisinger, Karin Schmitt, and Rajul Pandya-Lorch, published by the International Food Policy Research Institute.

IMPACTS OF RAPID POPULATION GROWTH

All problems of underdevelopment are more difficult to resolve if a population has grown rapidly over a number of years.

Rapid population growth has severe consequences for countries' social and economic health. There is a direct, measurable correlation between the health of mother and child, the number of births per woman, the interval between births, and the timing of pregnancies in the life of a woman: the more children a woman bears, the shorter the spacing between births, and the younger (under 18) or older (over 35) a woman is, the worse the health of mother and child and the higher the mortality of both.

Better reproductive health is essential. Smaller families and an interval of at least 24 months between pregnancies can significantly strengthen the condition of mother and child. But improving reproductive health cannot be achieved by focusing on the women alone. The 1994 International Conference on Population and Development achieved a quantum leap on this issue by calling for an increased focus on male responsibility.

Very few countries have succeeded, under strong population pressure, in sustaining strong and stable constitutional conditions and civil and political rights. Moreover, rapid population growth prevents most governments from keeping pace with growing requirements for health and education services.

In addition, the doubling of world population over the past 40 years has put enormous pressure on the natural systems that support all life on Earth. Water supplies, the quality and availability of arable land, the world's forests, and the biological diversity of the planet are all at risk.

This pressure on natural resources also increases the burden of assuring food security for all the world's people. Over the next 50 years world population is set to increase by 3 billion, and possibly by as much as 4.5 billion. To meet the market demand of a growing and urbanizing population, most experts believe cereal production needs to be increased by about 35 percent and meat production by over 55 percent in the next 20 years.

ETHICAL DECISIONMAKING

Ethical population policies must be based on respect for human life. The dignity of human life and fundamental right to life are not psychological, physical, or intellectual achievements, and they are not tied to gender.

Population policy presents a number of ethical dilemmas, which require policymakers to weigh, for example, the well-being of the present generation against that of future generations and individual well-being against public welfare. An ethical population policy will primarily aim to create social and economic conditions that motivate parents to decide—in a voluntary and responsible fashion that takes account of the general welfare—to limit the children they have to a number compatible with sustainable development.

TWO VIEWS OF THE PROBLEM

Antithetical views on the implications of population growth for the future exist side by side, as they have for centuries. It is useful to divide the world roughly into two camps—pessimists and optimists—and examine their methods.

In many cases—though not all—pessimists take an actual set of conditions and extrapolate the most important trends of the past into the future. Pessimists define “sustainable development” as a relatively static concept—that is, future generations should be assured a comparable capital stock of natural resources to satisfy their needs. Pessimists conclude that the end of the current production, consumption, and

waste culture is nigh. We must therefore turn our backs on technology, with its empty promises of efficiency, embrace self-sacrifice, and limit our consumption to the level of subsistence.

Optimists think completely differently. They do not assume “other things being equal” since the real world is shaped by circular interdependencies, and inventiveness promises endless innovation. In other words, nothing stays as it is, since people respond intelligently to changing circumstances, conflicts, and scarcities. Research will produce new findings and an infinite array of technical innovations, thus preventing distribution conflicts between present and future generations.

In fact, neither a blind and care-free faith in technology nor the “worst-case” school of thought is a good guide to reality. Yet both positions bring to the table ideas that are important to population policy and sustainable courses of development.

The assumption that technical progress will continue to provide us with new options in the future is not overly optimistic. The replacement of scarce resources with other products, as posited by the optimistic school of thought, is now a reality. And where scarcity has led to higher prices, an increase in supplies has occurred—as with the production of food since 1974.

Innovation is not the only element on the road to sustainable development in industrial and developing countries, but without innovation everything else is to no avail. The so-called resource efficiency revolution has achieved im-

pressive results. If the same benefits can be achieved using fewer resources and with less stress on the environment, ecological threats will be less immediate. This will give us time to enhance the economic and social feasibility of declining birth rates.

Nevertheless, it would not be wise to rely exclusively on the availability of new technologies. First of all, technical progress and human inventiveness can make a positive contribution only if good governance and the will to improve are present. Second, by no means can all problems be solved technically. Copper may well be replaceable by carbon fiber for electrical transport, and from a material point of view it may be possible to substitute wild fish with fish bred in fish farms. But there is no adequate substitute for the ozone layer, one of our most important collective global commodities, or for biological species diversity, one of the cornerstones of life-form systems.

The current generation has an opportunity to strengthen the basic moral principles of solidarity and justice, marshal the political commitment necessary to implement these principles, stimulate individual ethical motivation, and mobilize the maximum measure of discipline and commitment possible at all levels of social activity. If we succeed in capitalizing on this opportunity, we could go down in history as the generation that did more than any other to turn humanistic visions into practical results. If we fail, however, we should not expect to be judged kindly by future generations.

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