

World Population: Will Billions Starve?

Herbert London, a professor at New York University, tells how one evening his ten-year-old daughter sat down at the dinner table and announced that she and her family were eating too much. By over-consuming, they deprived starving Cambodians of food, she said. London's daughter had learned at school that "there is a finite world food supply," and that Americans' over-eating means deprivation for others.¹

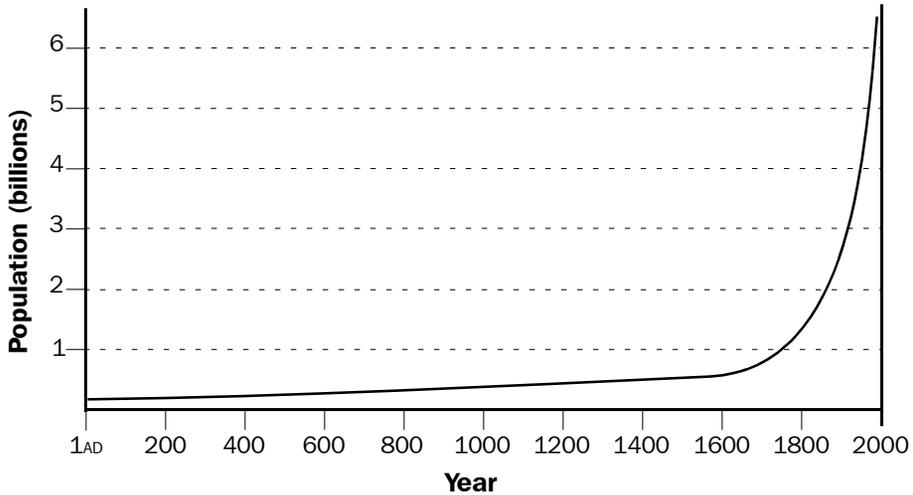
Our schools teach children that people are starving because:

- ◆ the world's population is growing too fast;
- ◆ the world can produce only so much food; and
- ◆ the people of the Western nations are consuming too much.

Population Growth Forever?

The typical text begins its section on population showing world population climbing at an alarming rate. It usually includes a graph like this.

Typical Graph of the Increase in World Population



The graph ends around the year 2000, creating a frightening picture of unending growth. The writing supports this image.

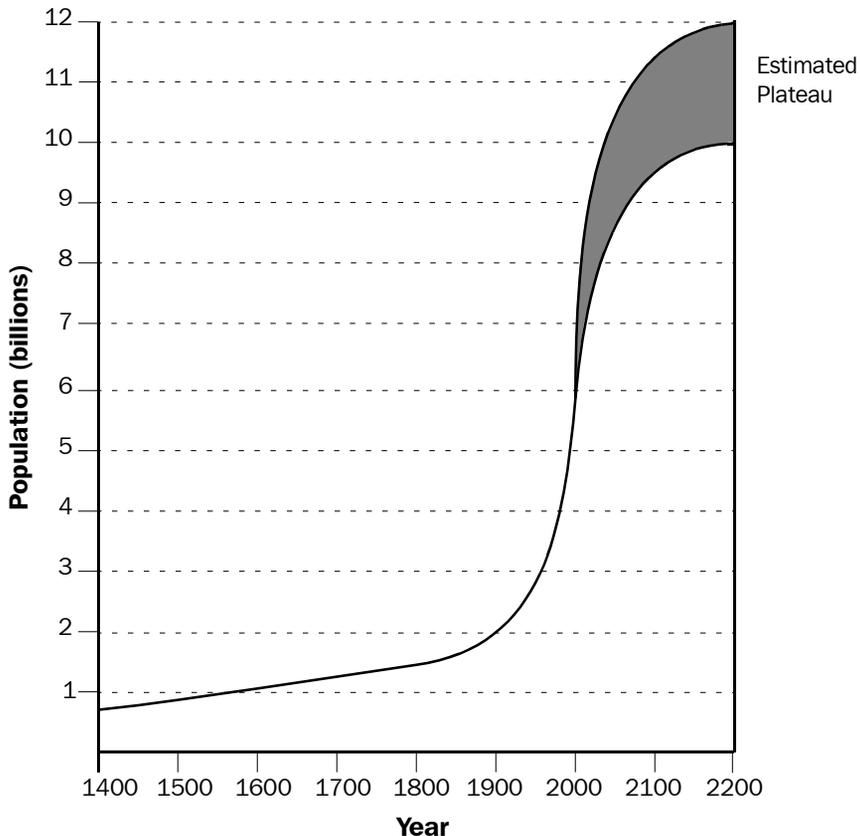
The text *Canada Today* says: “The world’s population is growing rapidly, and with it grows the demand for food. The greater is the population, the greater is the strain on the world’s food supply.”² Another text, promoting the concept “zero population growth,” says: “Like populations of locusts, rabbits, or deer, at some point the human population must stabilize or decline.”³

What the textbooks fail to show is that the *growth rate* of the world’s population peaked in the mid-1960s and is slowing in most nations. They also fail to point out that the world’s food supply has grown even faster than population has grown.⁴

In the 1960s, world population was growing at slightly over 2 percent per year, an unprecedented rate, but by the 1990s, the rate had dropped to 1.7 percent. It is expected to drop below 1 percent growth in the 2020s.⁵ Thus, although no one knows for sure, some demographers think that by about 2100 world population will level off at between 10 billion and 12 billion people.

A more realistic graph, which extends farther into the future, would look like this.

Realistic Graph of the Increase in World Population



Demographers now think that the rapid growth of population during the twentieth century may be a one-time thing. Certainly, it reflects the dramatic decline in death rates in this century. Improvements in health care, sanitation, and nutrition have resulted in fewer women and children dying in childbirth, more children reaching maturity, and more adults living to old age.

Population levels climbed so rapidly because, until recently, people continued to have as many children as they did in the past, when only a few children in any family were likely to survive. Birth rates have lagged behind the dramatic declines in death rates.

But now, birth rates are going down, too. In Mexico between 1965 and 1987, the birth rate decreased by more than a third. In Asia, the birth rate fell from 2.3 percent in 1970 to 1.9 percent in 1990. Only in Africa did the birth rate increase slightly. In several countries in Asia, Singapore, Malaysia, and Japan, birth rates have fallen so low that government leaders are considering incentives to increase birth rates!⁶

It Started with Malthus

Fears of overpopulation go back at least as far as Thomas Malthus, an early British economist. In 1798, Malthus sounded the alarm in *An Essay on the Principle of Population*. He argued that population would grow faster than food supplies, and thousands would starve.

Malthus thought that resources, including land for producing crops, were fixed. While food supplies could increase, they could not increase enough to keep up with rising population. Each new birth would mean that the same resources must be divided into ever smaller portions. Thousands of new births would mean thousands of new mouths to feed with those same fixed resources. Starvation would result when the supply of farmland was exhausted but population continued to increase.

Malthus did not anticipate how machinery, fertilizers, pesticides, modern seed-breeding techniques, modern transportation, and other factors would increase our ability to produce food. Today, Canadian farmers are held to strict quotas by the marketing boards preventing them from producing food at full capacity. And millions of acres of American farmland are deliberately kept out of food production.⁷

Human ingenuity keeps coming up with new technology, from new food varieties to new ways to raise crops. Such technology is likely to continue, says economist Julian Simon. “Tractors and wheeled irrigation pipes, which are making enormous contributions today, seemed quite unrealistic a hundred or fifty years ago.”⁸

A major study from the Food and Agriculture Organization of the United Nations (FAO) indicates that overall demand for food will grow at a slower rate in the future, reflecting slower population growth and the fact that many people now have adequate diets.⁹ The FAO study predicts that global capacity to grow more food will “not be a major obstacle” in providing enough food for the world’s population.¹⁰ On the contrary, some experts are worried less about population growth *per se* than that people are getting more wealthy. As incomes grow, demand for meat grows.¹¹ This will lead to major changes in agricultural production, but the changes reflect wealth, not hunger.

In spite of these findings, the authors of our children’s textbooks still see the issue in Malthusian terms.

- ◆ While noting that “modern developments allow people to produce and process more food than ever before,” one text warns that “the efficiency of the agriculture and food processing industries cannot increase forever . . . Yet the Earth’s population is steadily increasing—and with it, the demand for food.”¹²
- ◆ In *Earthcycles and Ecosystems*, a children’s book, Beth Savan writes: “human beings have multiplied too quickly, and we consume so many resources that we’re running out of some of them.”¹³

In later editions, by the way, Malthus was somewhat more optimistic than in his early writing. But that part of the message has not reached textbook writers.

Is Carrying Capacity Fixed?

Echoing Malthus, the texts perpetuate the idea that the Earth has a fixed “carrying capacity.” Carrying capacity is a term used by biologists to describe how much land is necessary to support certain numbers of animals. Our textbooks indiscriminately apply it to people, too.

- ◆ “The reason for considering the wealth and lifestyle of people in different regions is that these factors affect the Earth’s carrying capacity,” says *Science Probe 10*. “What would happen if all of the more than 5 billion people in the world lived in the way that the average Canadian lives? . . . The maximum population that the world can support will depend on the demand for resources that each person makes and the impact on the environment that each person has.”¹⁴
- ◆ Margaret Fagan’s text *Challenge for Change* says that: “As the human population continues to expand, the ability of the earth’s biological systems to support it adequately is diminishing.”¹⁵

But people, unlike animals, do not merely eat what food is available, and die if it isn’t around.¹⁶ People grow food and are capable of producing more of it if needed, so “carrying capacity” for humans is far different than for animals, if it has any meaning at all. Most scholars are confident that we have more than enough food to feed the world’s growing population. (One expert claimed some years ago that the world could feed 47 billion people with a diet of the kind Americans were enjoying in the 1960s.)¹⁷

In the 1950s, scientists developed new varieties of wheat and rice that dramatically increased food production, especially in Asia. These advances became known as the Green Revolution. Today, the Green Revolution continues. While scientists don't expect any single "miracle" crop, the new varieties continue to proliferate. They range from high-protein corn to grains that thrive in acidic soils.¹⁸ And yet, according to one text: "Critics of the Green Revolution claim that the increase in grain production has been achieved at the expense of social justice."¹⁹

Currently, world population is increasing at 1.7 percent annually, but production of wheat is increasing at 2 percent and rice at 3.5 percent.²⁰ Marketing boards restrict the amount that Canadian farmers can produce. They could increase their output if necessary, and would if permitted. Furthermore, the world currently has idle cropland that could be put under cultivation. The United States has about 60 million acres (24,281,136 ha) of unplanted farmland. Argentina has about 90 million acres (36,421,704 ha), now used for pastureland, that could be quickly cultivated.²¹

Feeling Guilty

These optimistic messages are drowned in a sea of blame. Instead of recognizing the role of modern technology in improving the lives of people all over the world, textbooks criticize the industrialized countries for their use of resources.

- ◆ A social studies textbook, *Canada Today*, states: "25% of the people in the world live in the first and second worlds [industrialized countries]. Found mostly in the northern hemisphere, the first and second worlds consume about 70% of the world's meat and 80% of its protein. They possess about 90% of its income."²² This textbook also reprints a full-page advertisement for the Foster

Parents Plan of Canada picturing starving children. The advertisement reads: “Do you have the courage to care?” The editorial caption asks: “How would you organize your school or class to respond to an advertisement such as this one?”²³

- ◆ According to another text: “Approximately 25 percent of the people consume 70 percent of the food. Food tends to go to the people who have the most money. Food that could feed people is also used to feed farm animals and pets.”²⁴
- ◆ The Canadian Junior Green Guide is more explicit: “If North Americans ate just 10% less meat, there would be more food available for 60 million more people each year. It just so happens that’s about the same number of people who DIE of hunger in the world each year.”²⁵ (Capitalization is in the original.)

These statements mislead our children. Whatever Canadians obtain from other countries they purchase from willing sellers. They don’t “take” things. They possess wealth because they produce wealth. They efficiently turn resources into output, much of which goes to foreign countries. Without western technology, productivity, and generosity, the poor nations of the world would be poorer still.

Does Population Growth Cause Poverty?

Many texts claim that a slower growth rate of population would reduce poverty. “Africa’s problems are related to its exceptional rate of population growth. The birth rate, 45 per thousand in the early 1980’s, is much higher than that of any other continent,” says the text *Canada in a Changing World*. It continues: “According to Edouard Saouma, director general of the Food and Agriculture Organization, ‘Many African countries, if they do not take positive action to encourage a drop in fertility rates, are speeding headlong towards disaster.’”²⁶

It is true that some nations with fast-growing populations are poor, but population growth is not the cause. Extreme poverty usually occurs because government policies prevent people from engaging in productive activities. In such nations rapid population growth can make life worse, but poverty is what makes population growth a problem. High levels of population do not themselves cause poverty, as recent studies have made clear.

- ◆ Evidence that population growth hurts economic development is “weak or nonexistent,” reports Allen C. Kelley in a prominent economic journal, the *Journal of Economic Literature*.²⁷
- ◆ “Concern about the impact of rapid population growth on resource exhaustion has often been exaggerated,”²⁸ say the prestigious National Research Council (NRC) and the National Academy of Sciences (NAS).
- ◆ Some of the richest countries in the world have high population densities and few natural resources. These include Hong Kong, Japan, and Singapore.

China: One Child or Else

The Chinese government’s one-child policy has led to high levels of abortion, in some cases coerced abortions and sterilizations, and even to reported infanticide, reflecting a cultural preference for males. One text is straightforward about the disturbing conditions: “The armed forces wanted males and openly encouraged the murder of baby girls. Global outrage over this infanticide led the Central Committee to modify its strategy in 1984.”²⁹

But others give tacit approval. “Although the situation in China may seem like a great restriction on the freedom of some individuals, further expansion of the Chinese population would lead to far worse

consequences for the entire population,”³⁰ says the Kendall/Hunt text *Biological Science: An Ecological Approach*.

Similarly, the text *Patterns of Civilization* notes the difficulties the Chinese face in finding ways “to provide for and develop their vast human resources.” It states that “the Chinese government has encouraged people to marry later and have fewer children than in the past.”³¹

In general, our children’s texts approve of active government intervention to control population growth. The Glencoe text *World History: The Human Experience* explains that food production cannot keep up with population growth in many countries. It then points out that many of these countries are using population control measures and specifically cites Thailand, where over 70 percent of the families practice family planning aggressively pushed by the government.³²

Experts are not really sure why birth rates are falling dramatically around the world. The dramatic declines in China’s population growth rates started well before the “one-child” policy began in 1979. Some experts believe that the declines were due to major improvements in infant mortality (parents then had more confidence that their children would live to maturity) and to government campaigns urging fewer children and later marriages.³³

In Singapore, birth rates fell in the 1960s and 1970s. Thomas Poleman of Cornell University points to government programs there, especially the decision to make large families wait the longest for new government housing, as a major cause.³⁴

The declines also reflect families’ changing wishes about family size.³⁵ Among the reasons behind these changes are economic growth and the shift away from agriculture in many developing countries.

- ◆ In countries where agriculture is the primary occupation, even very young children can be productive and families do not need to invest much in their education. (Before the mechanization of

Canadian agriculture, farm families were large and children helped work the fields.) Many children add to the family's labour supply and wealth.

- ◆ In industrialized countries, children must be educated before they can be productive. They don't add to the family's wealth until many years after they are born, and investing in their education is expensive. In these countries, parents tend to have fewer children.³⁶

Why Do People Starve?

If there is enough food to go around, why do people starve? The primary answer is politics. In recent years, famines have swept through parts of Africa, as they did in China and the Soviet Union earlier in this century. Droughts have been a factor, but war, political strife, and government policies are the central cause.

Many countries "have suffered or are still going through severe disruptions caused by war and political disturbances," explains the Food and Agriculture Organization of the United Nations.³⁷ In Ethiopia and Somalia, for example, warring parties have used food as a weapon to starve regions of the country. When the rest of the world tried to help by sending food, poor roads, lack of storage facilities, and conflict between troops made it difficult to get food to those who needed it.

Even when war is not going on, government policies can hurt food production. This has happened in many countries in the world, but these policies are particularly severe in the Sahel region south of the Sahara Desert. Many African governments there control the price of grain and keep the prices paid to farmers low.³⁸

Despite all these problems, African food production has increased in Kenya, Zimbabwe, the Ivory Coast, and South Africa in recent

years. Crop production in Africa could double with new technology.³⁹ In any case, says Dennis Avery of the Hudson Institute, “Africa is a vestige of the hunger problem which once faced all of the Third World—it is not a forerunner of impending famine for the Earth.”⁴⁰

Talking to Your Children

With this background, you can readily answer questions that your children may ask about food and population. Here are some possible questions and answers.

- ◆ Are there too many people?

No. The Earth’s “carrying capacity” is enormous. Human ingenuity is more than equal to the challenge of meeting the demands of a growing population.

- ◆ Does population growth cause starvation?

No. Food production has increased faster than world population, and this trend is likely to continue. Political strife and misguided governmental policies are the most important factors leading to starvation.

- ◆ Are Canadians consuming too much?

This is a moral question that each family must answer for itself. But the important point for your child’s environmental education is that Canadians produce as much as they consume, and what they consume from other countries they purchase from people who sell it willingly. They don’t “take” anything from anybody.

- ◆ Should governments try to control population?

Again, this is a moral question that each family will answer for itself. It appears that government programs to control population have had some success but that economic growth will be more important over the long run.

Activities for Parents and Children

Here are some activities and discussions that you can share with your children to develop a more accurate understanding of population and food problems.

Think about Earlier Generations

Many people these days are learning about their “roots” through genealogy. Your family’s history can quell worries about overpopulation, too. Gather your children around the kitchen table with a large sheet of paper and develop a family tree for the past few generations. Talk about the past and present generations and their lifestyles.

Typically, past generations had a lot of children. Some of them died at early ages. Those who survived had to go to work when they were very young, and, for many, there was no such thing as retirement. People worked as long as they could—but they died earlier than they do today.

Few families traveled far from home because there were no cars or planes. Families seldom took vacations because parents had to work most of the year. Home entertainment consisted of reading, playing the piano, or, later, listening to the radio. Food was less available, with much less variety.

Discuss your family history. Compare it with the experience of other Canadians, as indicated by the table on page 80. As Canada’s population grew, family size declined, and life expectancy rose. In economic systems characterized by private enterprise, more population does not reduce prosperity.

Family Size, Total Population, and Life Expectancy in Canada

	Average Size of Family	Total Population (in thousands)	Life Expectancy (year)
1901		5,371.3	
1911		7,206.6	
1921	4.3	8,787.9	59.37
1931	3.9	10,376.8	61.00
1941	3.9	11,506.7	64.58
1951	3.7	14,009.4	68.51
1961	3.9	18,238.2	71.14
1971	3.7	21,568.3	72.74
1981	3.3	24,343.2	75.39
1991	3.1	28,120.1	77.80
Source: <i>Historical Statistics of Canada</i> , page A255; <i>Canada Yearbook 1991</i> , page 88, 106; <i>Canada Yearbook 1997</i> , pages 77, 116, 174			

A Trip to the Supermarket

Take your children on a trip to the supermarket. Discuss the foods that weren't available when you were your children's age. Did you have as many frozen foods? Did you have as many fresh fruits and vegetables during the winter? What about new varieties such as kiwi, starfruit, and bok choy? Think of some foods that were available to you but not to your grandparents. Discuss the improvements in transportation and technology that have increased the quantity, variety, and quality of foods. Compare the prices of chicken and lobster. Chickens are raised by farmers who must buy or grow the grain to feed them. Lobsters live in the ocean and people merely have to catch them. Yet lobsters cost more than chickens. Farmers can produce as many chickens as people are willing to buy, but lobsters are in limited supply.

During the Great Depression, one politician promised "a chicken in every pot"—that is, that someday every family would be able to af-

ford to eat chicken. Today chicken is so inexpensive that it can be sold in fast-food restaurants. Stop at the produce section, where prices vary considerably from day to day. An early frost can stunt Okanagan fruit; and floods may wipe out Arizona's lettuce crop. When such natural disasters occur, supply goes down and the price goes up. Some people buy apples instead of oranges or use less lettuce. But the higher price also encourages producers to find or grow more oranges and lettuce, if they can. The result is that, while prices fluctuate, there is always a diversity of produce in most stores.

Plan a Garden

Imagine that the only food that your family will eat will come from your garden. Looking at a calendar, plan when you will plant, how long certain crops will take to mature, and when they will be harvested. At harvest time, what will you do with all the fresh food? How will you preserve it for the winter? How will the quality compare with that of fresh food?

Consider how many of your family's favorite foods would not be available if they had to depend upon just what their garden can grow. Point out how many foods come from other parts of the country or even other nations. Some apples come from Europe; some kiwis come from New Zealand; many fruits and vegetables come from Mexico and the United States.

Your children will learn that there is more to the abundance of food on our tables than simply growing it. They will learn the importance of food preservation, processing, and distribution.

Notes

- 1 Herbert I. London, *Why Are They Lying to Our Children?* (New York: Stein and Day Publishers, 1984), 31–32.
- 2 Angus L. Scully et al., *Canada Today, Second Edition* (Scarborough, ON: Prentice-Hall Canada, 1988), 405.

- 3 Peter Beckett, et al., *Science Probe 10* (Scarborough, ON: Thomson Canada, 1995), 447.
- 4 Indur M. Goklany, "Feeding the World's Billions Without Crowding Out the Rest of Nature" (Washington, DC: Department of the Interior, Office of Policy Analysis, November 1995).
- 5 Dennis T. Avery, *Global Food Progress 1991: A Report from Hudson Institute's Center for Global Food Issues* (Indianapolis: The Hudson Institute, 1991), 72, fig. 1-5.
- 6 Jacqueline R. Kasun, *Population and Environment: Debunking the Myths* (Baltimore, MD: Population Research Institute, 1991), 3.
- 7 Avery, 16.
- 8 Julian Simon, *The Ultimate Resource* (Princeton: Princeton University Press, 1981), 67.
- 9 Alexandratos, Nikos, *World Agriculture: Towards 2010* (Chichester, England: Food and Agriculture Organization of the United Nations and John Wiley & Sons, 1995), 124.
- 10 Alexandratos, 130.
- 11 Thomas T. Poleman, "Income and Dietary Change," in *Food Policy*, Vol. 20, No. 2 (1995), 49-159.
- 12 Frank Baumann, et al., *Science Probe 8* (Toronto: John Wiley and Sons Canada, 2nd ed., 1993), 366.
- 13 Beth Savan, *Earthcycles and Ecosystems* (Toronto: Kids Can Press, 1991), 25.
- 14 Beckett, 457.
- 15 Margaret Fagan, *Challenge for Change* (Toronto: McGraw-Hill Ryerson, 2nd ed., 1991), 23.
- 16 See the discussion of carrying capacity in Simon, 177.
- 17 Colin Clark, *Population Growth and Land Use* (New York: Macmillan, 1968), 153.
- 18 Avery, 90.
- 19 Stewart Dunlop, *Towards Tomorrow: Canada in a Changing World* (Toronto, ON: Harcourt Brace Jovanovich Canada, 1987), 102.

- 20 Avery, 10.
- 21 Avery, 18.
- 22 Angus L. Scully, et al., *Canada Today* (Scarborough, ON: Prentice-Hall Canada, 1988), 413.
- 23 Scully, 422.
- 24 Myrtle Siebert and Evelyn Kerr, *Food for Life* (Toronto: McGraw-Hill Ryerson, 1994), 301.
- 25 Teri Degler and Pollution Probe, *The Canadian Junior Green Guide* (Toronto: McClelland and Stewart, 1990), 77.
- 26 Dunlop, 82.
- 27 Allen C. Kelley, "Economic Consequences of Population Change," *Journal of Economic Literature*, 26 (December 1988), 1685–1728.
- 28 Quoted in Julian Simon, *Population Matters: People, Resources, Environment, and Immigration* (New Brunswick, NJ: Transaction Publishers, 1990), 230.
- 29 Alyn E. Mitchner and Joanne R. Tuffs, *Global Forces of the Twentieth Century* (Edmonton: Reidmore Books, 1991), 248.
- 30 Milani, 932-3.
- 31 Burton F. Beers, *Patterns of Civilization* (Toronto: Prentice-Hall, 1984), vol. 2, 173.
- 32 Farah and Karls, 961.
- 33 Thomas T. Poleman, *Population: Past Growth and Future Control*, Working Paper, Department of Agricultural, Resource, and Managerial Economics, Cornell University, Ithaca NY, September 1994, 8.
- 34 Poleman, 8.
- 35 Lant H. Pritchett, "Desired Fertility and the Impact of Population Policies," *Population and Development Review*, March 1994, 55.
- 36 Avery, 70.
- 37 Alexandratos, 53.
- 38 Avery, 53.
- 39 Avery, 47.
- 40 Avery, 20.