

Eating Lower on the Food Chain

1. **The issue:** Over the past 30 years, the human population doubled, while food production grew at an even faster rate. This meant that more people could be fed, and the average person's food intake increased from less than 2,000 calories/day (in 1962) to 2,500 calories/day (in 1995). This remarkable increase in food production resulted from technological advances that marked the "Green Revolution": better seeds, irrigation, fertilizers, pesticides, and food imports. The annual global food production in the late 1980s produced over 4 billion metric tons of food, of which cereals were the largest sector. This food fed 5.2 billion people, although over 1 billion people were undernourished. To feed the increased billions of humans who will be born in the next 40 years, more food must be produced. Increased production will come from increasing yield crops, putting more land into production, and increasing the number of vegetarians (relative to livestock consumers). It remains to be seen just how much technology will be able to increase food yields. Most productive land is already in production, and people who have the luxury of consuming animal products are not going to willingly give up this luxury.

What does this mean to you? Unfortunately, the increases in food yield seen in the past have been decreasing at an alarming rate. For example, wheat yields fell from an increase of 2.9% per year (from 1961 to 1979) to a 1.8% increase per year (from 1980-1997). During this same period (1980-1997), the human population increased by about 80 million people per year. During 2000-2004 there were four consecutive worldwide grain deficits. Many people say that the potential increases in yield will not be as spectacular as those of the past, since we are already using known technology, and most high-quality land is already under production and is also experiencing declines in productivity due to poor farming practices. Predictions for the ability of future food production to meet population growth are bleak: It is estimated that in 2030, food production will be 24% below the 1984 level.

Achieving sustainability: The question regarding food production is twofold: Will the rate of growth in food production keep up with population growth, and will environmental problems such as erosion and soil degradation further decrease productivity? Some scientists have estimated that at current rates of food production, the world can feed 6 billion vegetarians, 4 billion people on a 15% animal product diet, and 2 billion people on a 25% animal product diet (the typical North American). At the same time that the human population is increasing, the available land for increased production is being lost either to erosion or development. It is currently a mystery how we will feed the inevitable billions more humans who are waiting to be born.

Activity: In this activity, you will research a typical diet from various countries and determine the effects of such a diet on human health and the state of the environment

1. You will be assigned a country to research.
2. The countries we will study are: China, India, Germany, Kenya, Mexico, and Canada.
3. Each group will research the diet that is traditional for the AVERAGE person living in the country the group represents. Also, find the average daily caloric intake. To determine the appropriate dinner, consider the following:

main course, side dishes, dessert, drink, size of portion (serving size), and method of eating (china plates, wooden bowls, communal bowl, etc.)

Questions:

1. What was your meal like? Do you think you would like it? Do you think it would be enough for you to eat? Would you have had to share your food with many other people?
2. What country had the most desirable looking diet? What was included in this diet?
3. What country had the most varied diet? Where does this country stand in terms of development? How can these two factors be related?
4. Did students representing poorer countries seem to be jealous of the fare of the richer countries? Considering our eating habits, do we have enough food feed all the poorer countries?
5. From what you've learned, can the rest of the world afford to eat like those in North America? What are some solutions to the increasing hunger around the world?