

Challenge of feeding world biggest ever

By WILLIE VOGT

THERE are a lot of mouths to feed in the world, and the number continues to rise. Sometime later this year global population will cross the 7 billion mark, about 12 years after crossing the 6 billion mark. As part of the look ahead in the Farming 2020 series, it makes sense to consider the true challenge ahead for agriculture — population.

Ironically, the population growth rate is actually slowing; however, population growth will continue.

"We think we might cross the 8 billion mark in another 13 years



— or by 2024," says Carl Haub, Conrad Tauber chairman of population information, Population Reference Bureau, a global non-profit group that analyzes population trends.

But such projections, Haub reminds us, depend upon assumptions that birth rates in developing countries will decline

Key Points

- Population growth is seen as slowing as development rises.
- Slower growth is not no growth. Expect 9 billion by 2050.
- U.S. farmers will be challenged in new ways.

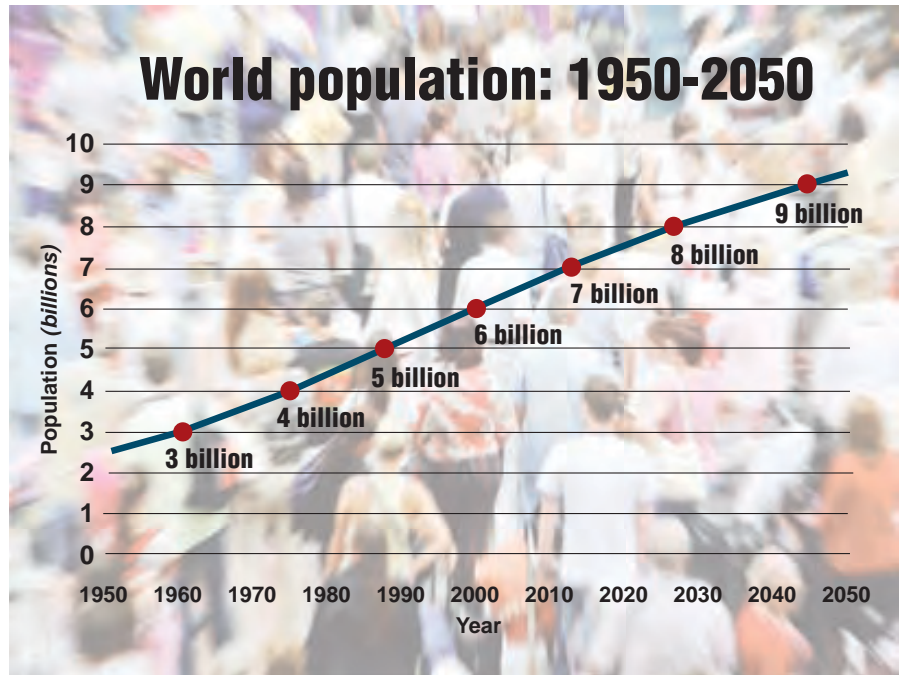
smoothly, and not all are doing so. It could be that the 8 billion benchmark will be reached in less time than the sixth or seventh.

Slow, but growing

Haub acknowledges that the growth trend is slowing, but also notes that global numbers will pass the 9 billion mark by 2050 even at this slower rate. Again, the key is the projected birth rate in developed and developing countries. "It's tradition to assume that all the growth is in the developing countries," Haub says. "That's the area traditionally defined by the United Nations as Africa, Asia and South America."

He notes that projecting population numbers is no easy task, and demographers and analysts usually assume a smooth transition as countries become more industrialized until the birth rate falls to less than two children per woman. Below that rate, population growth slows or stalls out.

However, Haub notes, predicting population trends can be a challenge. For example, he



MOVING TARGET: While predicting population growth is hard and most see a decline in the growth rate, the world's farmers will still be asked to feed 9 billion people, or more, by 2050.

notes that sub-Saharan Africa remains a "huge question mark" for population analysts. "The assumption is that we would have — in our estimate — sub-Saharan Africa adding 1 billion in population by 2050 if, and only if, the birthrate comes down smoothly, and it's not," he says.

He explains that in some countries the birthrate has declined to four to 4½ children per woman, but governments are not pushing that. In fact, he says, some governments say they need more people to develop their economies, so they want to see rising birthrates.

The challenge ahead

But sitting out there at 2050 is a number few quibble with for the moment — that 9 billion figure. It's a number that brings some staggering realities to global agriculture. For example, by some estimates farmers today will have to produce more food in the next 40 years than all of agriculture produced in the last 10,000.

Yet the technology put to work in agriculture during the last 70 years has already allowed for most of the U.S. population to move to urban areas, and has allowed the average farmer to boost productivity so that each of today's farms feeds more than 150 people. Further advancements continue to boost efficiency and productivity.

Yet when looking at the population figures, along with land use and resource questions, it's hard not to wonder if farmers are up to the challenge. Haub, who

Farmers can answer the challenge in 3 key areas

THERE are three key areas of investment farmers will continue to improve upon going forward. As the world's population crosses 7 billion this year, these are areas to keep in mind for the future growth of your farm and the industry.

Technology. Investing in precision ag technology that will allow you to put seed, crop protection and fertilizer right where it's needed will maximize not only land use, but also crop production. The rising use of row shutoffs for planters and spray boom shutoffs for sprayers provides an economic benefit on input saved and a rising return on crops planted.

Machinery. The backbone of modern agriculture is your iron fleet. Moving ahead, you'll want to maximize the investment in new ways by analyzing which machines will provide the most flexibility to farm more ground, while keeping your capital investment under control.

Biotechnology. The "software" of agriculture, this 15-year-old technology continues to revolutionize the industry. The rise in water-optimized genetics will be the hot topic for 2011 as farmers put this new tech to work on their farms. Maximizing crop production under moisture stress shows the potential of the technology.

has worked overseas, notes that politics are a problem. Would-be farmers in some African countries sit idle because they don't have the cash to buy seed or fertilizer, but they have arable land that can be productive.

Working out those issues will take diplomats and educated leaders. The U.S. farmer has a leg up thanks to a system built around tech advancement and investment. Rising food prices remain a concern, and it's a problem that won't go away.

You'll be challenged, too, to get more per acre. According to a report by the industry group Crop Life International, the ratio of arable land to population is

declining by 40% to 55%. That means producing more food on less land. Add in that 3.9 billion people are living under severe water stress, and you'll find you have less water to use, too.

The future? "Even if the world moved to two children born to each woman fairly quickly, population growth won't stop anytime soon," Haub notes.

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Population by the numbers

First billion.

It took all of history until 1800 to reach the first-billion mark. The next billion came 130 years later in 1930, and less than 100 years later the population will hit 8 billion (2024).

40%.

The share of the rural population will fall to this level by 2030, with even less in the country for Europe and the United States.

1.02 billion hungry.

The United Nations Food and Agriculture Organization estimates that as the number of people who were undernourished worldwide in 2009.

50,000 gallons.

The Field to Market study (by the Keystone Alliance) saw this reduction in the water needed to raise an acre of irrigated corn in the last 20 years. In cotton, the amount of water needed has declined 30% in 20 years.

\$83 billion per year.

The amount of money the United Nations predicts must be invested in agriculture for developing countries if we're to feed 9.1 billion people by 2050.

Sources: Population Reference Bureau, CropLife International and the United Nations Food and Agriculture Organization