

FARMING IS A GLOBAL DRIVER

BY BARB BAYLOR
ANDERSON

Global changes in 2050 may come more quickly and urgently and expand exponentially. That's the assessment of Scott Aughenbaugh, fellow, Seven Revolutions Project at the Center for Strategic and International Studies, Washington, D.C. Agriculture could play a pivotal role within what he calls the seven drivers of change, he says.

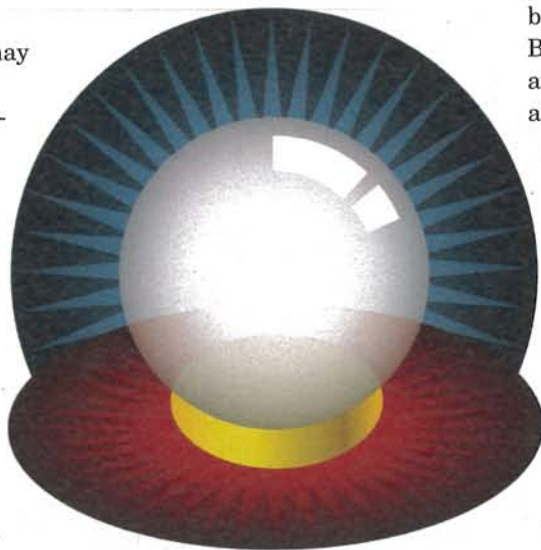
"In the 2030s and beyond, there are legitimate concerns about whether or not we can produce enough food," he says.

Aughenbaugh outlines the seven revolutions:

- ▶ Population
- ▶ Resource management
- ▶ Technology
- ▶ Information
- ▶ Economics
- ▶ Security
- ▶ Governance

Aughenbaugh includes food, water, energy and climate in resource management. While the U.S. can produce 5.3 times its 1910 output, food is not getting where it needs to. "Something needs to change to get food to the 65% of the world's hungry living in seven countries," he says. "We need to produce 70% more by 2050, predicts the Food and Agriculture Organization. But there will not be a huge change in the amount of arable land, as not much is available."

WATER. Only 4% of the world's water is accessible. About 70% of that is used in agriculture



worldwide and does not apply equally across the globe. Aughenbaugh says water for agriculture is predicted to grow less than 20% during the next 40 years. By 2050, half the world's population will be in water-scarce areas, and water cleanliness will be a concern.

ENERGY. "The share of fossil fuels in our global energy mix also is not going to decrease dramatically over the next generation. Renewable energy use will rise from 11 to 14%," he says. "Wild cards regarding energy use include geopolitics, growth from unconventional fuel sources, like shale gas and guar bean grown in India, infrastructure issues and climate change."

ECONOMIES. Additional growth and further complexity within the revolutions of technology, security and governance will impact the globe's future as well, Aughenbaugh anticipates. And he predicts a shift in the world's top 10 economic players.

"By 2030, the top economies will be China, U.S., India, Japan, Russia, Brazil, Germany, the U.K., Mexico and France," he says. "This will create changes in the middle class with more consumers worldwide seeking dairy, meat and processed foods. Concerns about the collective debt among the G7 economies in relation to gross domestic product also will need to be monitored."

PEOPLE. "Population sub-factors are growth, aging and urbanization," he says. "World population will grow from about 7 billion today to 9.3 billion by 2050. Rate of growth will eventually stabilize. India will overtake China in total population in less than a decade," Aughenbaugh says.

AGING. Life expectancy also will continue to rise from 46.6 years in 1950 to 69.3 in 2012 to 76.3 by 2050, according to data from the U.N. World Population Prospects 2010. Social systems are not set up to deal with an older population supported by fewer workers, he says.

CITIES. More people were living in cities than rural areas for the first time in 2008, and that will accelerate. Worldwide, 70% of the population will live in cities by 2050. In the U.S. that figure will be nearly 90%.

"This shift to more millions of people in cities will challenge recovery from natural disasters, transportation infrastructure, growing food for these populations and more," Aughenbaugh says.

"Overall, there are more promises and opportunities by 2050, but also more peril and instability." **CSO**