

Inside the Geopolitics of 21st Century Food Production

Agriculturists must understand the dialogue in order to weather the change.



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It is a deeply troubling time for agriculture as world opinion focuses on the environment and climate change. People not involved in farming, and with little comprehension, charge that agricultural practices are causing massive, destructive ecological impact.

Are these charges true? Let's take a look at some of the most common misperceptions about agriculture.

Ten Widespread Myths about Agriculture

Myth 1: Farms are taking up more and more land.

Less land is farmed today than ever before as farming becomes more efficient and productive. In the U.S. we are farming 300 million fewer acres than we did at the height of farming's land usage – acres that have been returned to nature and wildlife.

Myth 2: Our food is increasingly bad for us, even dangerous.

In the U.S. we have the most nutritious, low-cost food supply in the world. The ability of toxic bacteria to mutate to more dangerous forms is causing widespread concern, and steps are being taken by farmers, and especially food processors, to raise barriers to these hazards.

Myth 3: Big, absentee corporations build massive factory farms.

Farming is largely family-operated. The family business type of organization is best suited to the many uncertainties of farming. The U.S. agriculture census reports that 96% of farms are family owned.

Myth 4: We face a future of eroded farmland, a hollowed-out countryside, and scarier germs.

Environmentalists and organic adherents feel they are advancing their own cause by attacking conventional production agriculture. Trashing sound ag science is poor policy.

Myth 5: Farmers are not taking care of their land.

The essence of farming is stewardship of the soil, leaving it richer and stronger. Buildup and maintenance of soil organic matter is of first importance. Crop rotations, mulching and manure applications and adding soil organic matter are important practices in farming.

Myth 6: Fruits and vegetables, which are healthy, don't receive government subsidies like corn, from which unhealthy corn sugar is made.

Fruit and vegetable growers do not receive direct payments in the form of price supports, but do receive hundreds of millions of dollars in production research and marketing programs.

Myth 7: We need more local farms, instead of a few massive ones.

Actually, this already is happening. The number of farms that are 50-acres and smaller, which most often market locally, has jumped by 15% since the last ag census, by a big 68% since 1974.

Myth 8: Synthetic fertilizers used in conventional farming inhibit the biological factors that build soil carbon, which adds to long term destruction of the soil.

This is a widely spread criticism that has no basis in fact. Fertilizers such as nitrogen, phosphorus and potassium (NPK) are needed for plant growth, which through mulching and cover crops, restores carbon (soil organic matter) in the soil.

Myth 9: Farmers in Iowa contribute to the dead zone in the Gulf of Mexico through nitrogen and phosphorus runoff from their fields.

Considerable progress has been made in reducing runoff. No-till farming and buffer strips cut back on runoff. Precision farming and GPS systems with variable application capabilities tailor nutrients to soil needs and cut down on fertilizer use. New technology is just around the corner to further eliminate runoff. Meanwhile, other pollutants from sewage and industrial plants must be controlled also.

Myth 10: Our factory system of farming produces cheap food causing an obesity epidemic.

Americans are blessed with a low-cost food supply. Americans spend less than 10% of our income on food, compared to 30% in Russia and India. It isn't agriculture causing obesity; it is a decline in national fitness standards and an increase in the consumption of food prepared outside the home.

So, Why the Panic?

It's puzzlement for ag experts. On the one hand there is growing concern that we will not be able to provide enough food for a global population estimated to grow by 50% by 2050. On the other hand, conventional agriculture, based on sound science and best management practices, is demonized in the mainstream press and on the Internet, in blogs and in tweets, in a new wave of paranoia. Adding to the puzzlement, it is an indisputable fact that plants cannot survive without nutrients and protection against pests and diseases. Judicious use of nutrients and plant protectants is an absolute necessity if we are to feed the world in 2010, 2020, 2030, 2040 or 2050 and beyond.

Yet, strangely, few voices are being raised in support of a family-based agricultural system developed through our land grant colleges and based on years of research and development. There has been remarkable progress in efficiency, productivity and beneficial effects, especially in the crop protection sector.

The environmental lobby does not recognize the advances in technology that agriculture has made and that immeasurably improve the environment. Nor do environmentalists recognize that the regressive technology they favor will destroy global food security and a sustainable future for civilization.

Crop protection products have led the way for the steadily increasing productivity of American agriculture in a much more environmentally friendly way. There are revolutionary new products available today – readily referenced in the pages of the *Crop Protection Handbook* – that use new modes of action which are practically nontoxic and have little environmental effect compared to previous generations of products. Genetically modified seed has contributed also to beneficial effects, as have no-tillage systems made possible by new herbicide chemistry. Agriculture's record has been outstanding for its contributions to saving energy and water, soil conservation, integrated pest management, and sustainable practices.

Yet, ideologically driven detractors bent on doing things “naturally” are adept at using scare tactics and regulatory red tape to delay the progress of sound and verifiable agricultural science.

For instance, the vocal organic lobby led by the Rodale Institute and the Organic Center has many adherents, yet organic production supplies only 3% of all food sales. Supporters of organic farming view it not just as a beneficial technology but as a way of life. In some respects organic farming is, therefore, elitist because it is not productive enough and too wasteful of labor and land compared to its output. It is regressive technology. Nevertheless, organic has received a large boost with the drive for sustainability which draws most of its strength from large retailers fearful of consumer opinion. Organic supporters say that to be sustainable, it is necessary to be organic and that organic and sustainable are terms that are interchangeable. The flaw in this is readily apparent in that organic methods cannot possibly be productive enough to feed the growing world population.

The Stewardship Initiative for Specialty Crops (SISC) has initiated a metric review by which it hopes to rate crop inputs including crop protectants in terms of sustainability. It remains to be seen what effect this will have on crop protection practices.

Let New Technologies Prevail

The United States leads the world in advances in agricultural productivity and in the development of new technology. We have the most productive, efficient, and technologically advanced ag sector in the world. It is a surprise to most people that, while the manufacturing trade deficits continue to grow, the ag sector had a trade surplus of \$35 billion with \$115 billion of exports in 2008. We are the world's largest food exporter, and we have shown export surpluses over the past 15 years. The U.S. also is the leading exporter of advanced technology to developing countries. Our agriculture and food industry provides more jobs than any other, and is the second largest behind the U.S. government. Agriculture is a major supporter of our economy as it climbs out of the worst depression since the thirties.

Despite this outstanding record, government and state support of the land grant college system, whose teaching, research and extension molded American agriculture, is declining rapidly. Positions are not being filled and budgets are being cut. These cutbacks, extending back over a decade or more, are leading to an attitude of indifference and even accommodation to the hostile public opinion toward conventional farming practice.

As a result, a growing leadership void is being filled by large commercial research companies such the so-called Big Six – consisting of BASF Crop Protection, Bayer Crop Science, Dow AgroSciences, DuPont Crop Protection, Monsanto and Syngenta.

Much advanced technology is being researched, developed and marketed by these companies. Besides the seminal breakthrough with genetically modified cultivars, there are also revolutionary seed treatment systems, target premix products, plant stress protectors, and a host of new chemistry based on biocontrols, organic and products that are practically nontoxic to the environment.

Monsanto has declared its bold promise to double corn and soybean yields within three decades over the year 2000 average. The basis for this forecast is advanced generation traits that will provide seed with abilities to improve performance and yield such as drought resistance. But also involved is field research using precision agriculture for proprietary remote soil analysis software prescription planting tools, and elegant new plant protectants applied at mere ounces per acre.

The Future is at Stake

For those who are agriculturists, who know farming, and who have the technical knowledge to understand how agriculture has progressed, no less than the future of civilization as we know it is at stake. For what the environmental lobby proposes cannot support the level of productivity needed in the race for global food security.

No less than Bill Gates, the world's richest man, at a Food, Agriculture and National Security in a Globalized World symposium, called for governments, industry and environmentalists to set aside old divisions and join forces to help world farmers become more productive. Through charitable foundations, Gates has contributed \$1.4 billion in the past three years to stimulate food production in Southeast Asia and Africa.

What is needed is an end to the ideological war between supporters of conventional farming practices and the environmentalists. It is a fact that agricultural technology has become vastly more environmentally friendly as well as sustainable and it will continue that way. There is no need to choose between the advancing technologies of conventional farming versus organic. We can have both, and the vocal organic lobby, for their share, must refrain from trashing sound ag science proven over years of experience.