

KEYNOTE ADDRESS
By Morton I. Sosland

Food and Fuel Forum
Agricultural Business Council of Kansas City
Governors' Room – American Royal
Kansas City, Mo.
October 23, 2008

My direction as to how I should begin this program was “to talk above the fray.” That is a position that I, as an editor for many years, have never assumed. In this particular case, “above” is probably higher than I would ever aspire to attain, no matter the spirit of the moment. Instead, I am inclined to dive right into the fray, as I really don’t believe that anyone can be or should be neutral about this subject. But before doing that, I did turn to my Oxford English Dictionary to learn about that word, fray, which, as expected, is defined as meaning “a disturbance, especially one caused by fighting.” I was particularly delighted to discover this quotation from John Donne: “The first blow makes the Wrong, but the second makes the Fray.”

Finding that bit of wisdom came on the same day I was scanning the web, as I often do, in seeing what people are saying about subjects of keen interest, and came across a blog provided by *Time* magazine. Its title was “Bread and Oil.” Wow, I thought, that’s a much more direct way of raising these issues than Bob Peterson conceptualized by choosing “Food and Fuel.” The *Time* article focused on the Middle East, noting that oil-importing countries, like Syria, were facing great problems in securing an adequate food supply in competition with oil-rich neighbors. Syrian farmers are particularly hard hit by the high prices for oil and fuel. The article quotes a farmer in the Euphrates River Valley, where wheat probably was first grown some millennia ago, as saying, “The government forgets that we grow our food crops with oil, not water.” On reading that, I kept wondering how an American corn farmer might modify that. Would he say, “We grow fuel using oil and plenty of water”?

In the interest of full disclosure, I need to tell you the positions from which I speak. I am a passionate supporter of the grain-based foods business; indeed, it was our use of this term in our magazines, *Milling & Baking News* and *World Grain* especially, that brought the concept of food based on grain to the consciousness of many of you as well as to the body politic. We do not just believe that bread is the Staff of Life, but we hold that increased consumption of these foods offers the best opportunity the world has for resolving issues of malnutrition and hunger. Thus, I believe that anything standing in the way of expanding the market for bread and similar foods — extraordinarily high prices, insufficient and poor quality crops, misguided government interventions and phony diet programs, to name a few of the most grievous — is to be opposed with utmost fervor.

I am also a fervent believer in the opportunities that new crops and new technologies may bring to the farmers of this country and to the entire world. Discoveries that will provide agriculture with an important role in the industrial or non-food sectors of the economy, as well as in the essential food side, deserve our total support. After all, depending on ingredients produced by a less than prosperous part of the economy, which has been the all too frequent experience of farmers in recent years, is as fraught with problems as counting on any supplier that is not doing well. Hardly anything could be more favorable for grain-based foods than to have the growers of grains enjoying a prosperity that came from new discoveries that opened new food and industrial use opportunities.

Let me insert here that while this forum is devoted to understanding the mutual roles of food and fuel in agriculture that we should not forget another issue that has deeply bothered thinking people in grain-based foods, and that is the loss of sizable wheat acreage to corn and soybeans. This major area shift was under way long before the fuel issue raised its head, reflecting significant improvement in yields of those two crops as well as agronomic advances that made their production suited to areas that used to produce mainly, if not solely, wheat. Genetic modification accounts for this sudden expansion in planting of corn and soybeans in states like North and South Dakota, and, yes, in Kansas. And it is the absence of genetic modification of wheat that explains why this crop is losing the yield derby to corn and beans.

Indeed, it might be said that the skyrocketing wheat prices of the past year were the way markets responded to this situation. With wheat yields still showing little improvement over the years, in contrast to the other grains, paying sharply higher prices poses the obvious answer to assuring a supply. Without delving too deeply into this issue, let me note that the lack of genetic modification of wheat largely is explained by the resistance of grain-based foods to the promise of this science on account of fears of consumer reactions. Even if these objections were eased, wheat will not be able to catch up any time soon in its genetic gains. This means the industry will have to pay more to keep production in line with requirements. Otherwise, we will have assured a continuation of the steady decline in U.S. wheat production.

The third area where I feel passionate enough to make me want to do battle in this fray is my staunch belief in the importance of export market development and growth. Exports are beneficial for both farmers and the grain-based food industry. Not only are expanding exports important to the well-being of the American farmer and the economy, but like industrial applications, exports are a powerful incentive to maximizing production. I need not delve into the importance of a reliable export supply to the food situation in many countries around the world.

There's hardly any condition more favorable to grain-based foods than farmers going all-out in seeking to produce crops. I am appalled by foreign trade analysts who define the U.S. role in exporting grain and grain products as the residual supplier, the supplier turned to only when other shippers fall short. Thus, it should be no surprise that I am a fierce believer in unfettered and unsubsidized multilateral trade, that I am disappointed with the failure of the Doha Round negotiations, and that anything that would artificially limit the ability of America to be an aggressive export marketer is as distasteful to me as was the late Dr. Atkins and his low-carbohydrate diet.

It also seems important to make another personal disclosure, and that is that my family, for more than half a century, has invested in wildcat oil well drilling, primarily in Kansas and Colorado. That personal interest has made me keenly aware of how the price of crude oil affects decisions about exploration and production of this major energy source. Let me simply state the obvious, that oil above \$100 per barrel is a level that assures maximum production and intense searching for new production sources, and that the drop below that level prompts caution when it comes to new leases and new wells.

So now you must be asking yourself what does this bread-eating, oil well drilling, industrial use and research proponent and sometime editor — who really prefers keeping his head low — think of the current debate. In this leap into the sky to get above the fray, let me begin by declaring my earnest hope that whoever wins the presidential election in several weeks' time puts on his urgent agenda the development of a long-range national energy policy. If the fundamental driver of that policy is meant to be ending the reliance of America on imports of foreign-produced oil, which is what most of us, I suspect, believe will be

the central theme, then we need to bring the nation's best minds to bear on determining how this should be done.

I hope you agree that such an action plan needs to include something that is notably absent from present policy, and that is the steps that will be taken to reduce our dependence not just on foreign oil, but our dependence on energy. The commonly accepted forecast that U.S. energy needs will rise into the foreseeable future at a rate of 2 per cent a year, which is almost double population growth, is, it seems to me, totally irresponsible in reacting to what is a national crisis of confidence about energy supplies as well as worries about the environment.

I'm willing to accept the forecast that boosting energy efficiency — not just lowering speed limits and not just turning down thermostats — can halve the projected growth in global energy demand within less than two decades. By boosting the level of output from a given amount of energy consumed, savings in energy use and enhancements to the environment are both achievable. These steps need adopting in both developed and developing countries, accompanied by coming up with energy-saving metrics that allow measurement of results.

Along with potentially huge savings in commercial or industrial uses, estimated to conserve 25 million barrels of petroleum per day, are the major gains possible in residential consumption by boosting the efficiency of appliances and by more efficient lighting.

Of course, achieving savings of those vast dimensions on a global basis are dependent on the adoption by governments, by industry and by residential occupants of methods and technologies that will make such savings possible. Sure, it requires government intervention in areas like fuel use per mile driven. Yes, the entire matter of the global environment and climate change are central to this debate — offering what should be the unusually attractive outcome of reduced dependence on a finite resource like crude oil and ending concern about a disastrous climate crisis as the result of carbon emissions and global warming.

I know that we are intent on addressing the food and fuel debate, but it doesn't take much examination to realize how that issue is only one — albeit an important one — among the many aspects of the likely solution of America's energy problems. Indeed, more often than not when solutions are put forward, the issues that occupy the attention of food-fuel debaters are not even touched upon as being part of the likely solution. Similarly, the drawdown of crude oil supplies, forecasts of future shortages and the looming climate crisis have prompted stepped-up research to find in agriculture ways of replacing any number of products that now use petroleum as their basic ingredient. Just recently, I read that Genencor, a unit of Danisco, the Danish food company, and Goodyear Tire & Rubber Co. have pressed forward with a collaboration seeking to find an agriculturally-based replacement for isoprene, the petroleum-derived product that is essential to the manufacture of vehicle tires made of synthetic rubber. The aim, like many other similar research undertakings, is to have the tire industry become less dependent on oil-based products. Millions of dollars have already been spent in this collaboration, and greatly increased spending has been budgeted, including having large-scale manufacturing under way by 2012.

Recently *Nature* magazine published its so-called "wedge" list of possible ways of introducing low-carbon energy production into the global economy as swiftly as possible. I stress that this approach requires staggeringly massive investments, which are believed necessary to avoid the global warming that will occur in the next 50 years absent these steps. Without endorsing that concept, let me simply note that this list includes concentrated solar thermal electricity generation; 700 new nuclear plants and replacement of 300 existing plants; 800 new coal-fired plants with all the carbon captured and permanently

sequestered; huge expansion of photovoltaics; steps to assure efficient industry and residences; minimum vehicle efficiency of 60 miles per U.S. gallon; vehicle fuel from cellulosic biofuels, and 2,000 gigawatts of power generated by new windmills. A gigawatt is 1 billion watts.

This list is highly important for what it includes as well as what it omits.

To underscore the immensity of this undertaking *Nature* points to the goal of securing 800 gigawatts of new power from coal plants with carbon capture and storage. It notes that this capture and storage represent a flow of carbon dioxide into the ground equal to the current flow of oil out of the ground. It would require, by itself, the re-creation of the world's entire oil delivery infrastructure for this new purpose.

And then there's the cellulosic biofuels, which I'm sure got your attention. It is apparent that the authors of this approach, like many other recommendations that we see these days, assume that the production of second generation biofuels, from cellulose, algae or whatever finally works, is a future certainty. The amazing thing here is the projection that following this path to solve the global climate and energy debate by replacing petroleum will require using a sixth — yes, 17 per cent — of the global crop acreage for producing this non-grain raw material. Nothing is said specifically about the immensity of this particular concept, which, if you think about it, has proportions analogous to the sequestration of carbon dioxide from coal plants.

At the Bio International Convention held last June in San Diego, discussions of cellulosic biofuels, while focusing on the problems and high cost of converting cellulose, also addressed other issues involving this approach. One that should be especially striking to this audience is the immense handling, storage and transportation changes that would be required if cellulose-type products were being processed, as well as the prospect that in any process for converting cellulose into fuel a sizable quantity will remain that is suitable only for burning as plant fuel. This is what happens when sugar and bagasse are processed. As Peter Meyer wrote in a recent column in *Milling & Baking News*, "The consistent cost-advantages of corn-based ethanol are the utility and value of the feed being created as a by-product of corn ethanol production." Yes, as with millfeed in flour milling, the value of this by-product of corn ethanol production has a, maybe even the, central role in making the process economically sound.

While I believe that research aimed at extending the present brewing process to cellulose is properly focused on coming up with an efficient way of converting a wide range of stuff into alcohol, other areas — gaining value for the by-product and dealing with the massive volumes involved — merit emphasis. Indeed, precious little attention has been paid to the way corn ethanol production has quite literally transformed the business of country and subterminal elevators. I will never forget some years ago a chance encounter I had with the newly-retired manager of a large Iowa subterminal elevator who related to me that in the several preceding years a large investment had been made in adding unit-train loading capacity, only to have all of the grain now moving through that facility delivered by truck, and not train, to area ethanol plants. It doesn't take much imagination to appreciate how the sudden embrace of cellulosic ingredients, in response to new technology and market prices, could cause a revolution in grain marketing, storage and transportation systems beyond anything that has happened in the past, including the arrival of railroads.

At the same time, we should not neglect the thermal method by which waste products, including cellulose, are heated in order to produce a synthetic gas, which then may be converted into a liquid fuel. The third alternative receiving serious study is making biofuels from algae. Experiments, including sizable

algae ponds in Hawaii, have shown that certain types of algae produce substances that may be converted into fuels, using carbon dioxide as the feedstock. One company with access to Pacific Ocean waters has begun experimenting with how to move container-size loads of algae for processing into biofuels. Research on second generation biofuels has been under way for about 40 years, although its history is marked by many ups and downs in response to oil prices.

Having earlier chastised the grain-based foods industry for putting up the barriers that deprive wheat production of gaining from genetic modification, it is appropriate in the same context to warn against resisting the huge changes many of these developments presage for the structure of grain marketing and processing. Unless this industry keeps pace with advances in second generation biofuel research, which I realize has many hills yet to climb, it may find itself without a role in the evolution of an important new agricultural source of energy.

It's not too much of a stretch to draw a parallel between what might happen in the grain industry and how the generation of energy by wind has proceeded, haltingly, in America. Europe is way ahead of this country in the embrace of wind power, which in the United States has had to contend with environmental and scenic nay-sayers that almost always have given way to acceptance. In an article in a recent Sunday magazine of *The New York Times* about the difficulties that were faced by an offshore wind farm in Delaware, a parallel is drawn to the adventures of Don Quixote, the hero of Miguel Cervantes' early 17th century novel. You may remember that Quixote wanted to do battle with windmills, which he saw in his deranged mind as monsters on the horizon, overlooking their importance in making wheat flour available for baking bread. His sidekick, Sancho Panza, understood the windmills' role and constantly argued that they benefited humanity.

The growth of energy created by the wind to add power to the grid that some see as allowing plug-in vehicles is just one of those new sources of energy in the list I read earlier. According to the Sunday *Times* article, onshore wind power added more than 5,200 megawatts of new electrical capacity, which was nearly a third of America's new generating capacity in 2007. That exceeded all other forms of new electrical generation except natural gas, and provided enough to supply 1.5 million homes. Wind provides just 1 per cent of electricity output in America and 3.3 per cent in Europe, but growth is rapid.

It is only recently that anyone would seriously position electricity capacity as a potential competitor of liquid fuel to power automobiles and other over-the-road vehicles. That applies even to someone like me who spends a lot of time in Europe, often traveling on trains running on electric power. Like so much else that was driven by the oil price peaks of the past year, research on cars run by electricity has accelerated. Claims are heard of new portable electricity storage systems that will allow "refilling" a car with electricity in less time than it now takes "to fill her up" with gasoline, and of cars that can drive 500 miles on a single electric power charge.

Yes, of course, corn-based ethanol has a considerable advantage because of the accepted technology for making this fuel and its similarity to and compatibility with gasoline. The point I would make, though, is that the fray in which ethanol has been centered for the past year or longer might turn out to be of much less consequence than the outcome of efforts across the entire mammoth range of the search for new forms of energy.

In my view, it is not beyond possibility that the food industry, especially grain-based foods, will turn out to have a considerable stake in the maintenance of corn ethanol production at a level not greatly different from what is now on the horizon. After all, the diversion of ethanol demand to some of these

other energy sources, which is what the goal of much of this research seems to be, would be a serious blow to American corn farming and American agriculture. That is definitely not in the best interests of grain-based foods or of any other part of the global grain economy that we wish to see grow and prosper.

Agriculture ought to have a central position in the independent production of energy that America is now pursuing. Achieving that in balance with food requirements is both a serious challenge and a fantastic opportunity that merit our most earnest attention.

Thank you.