

THE
CORN
FACT
BOOK



CORN FARMERS
COALITION



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Executive Summary

Thanks to tech-savvy, innovative farmers, there is plenty of corn to eat, make ethanol, feed cattle and even export a big piece of America's largest crop.

In 2008, corn prices briefly doubled as a new type of customer — the ethanol plants that make automobile fuel from corn — began using more corn. Meanwhile people worried that floods in the Midwest would crimp the corn crop.

Corn's other customers started worrying about scarcities. And the resulting high prices pinched profits for these older, traditional customers for corn, like beef producers and food-makers. Used to decades of inexpensive, plentiful corn, these customers complained about Congress and the federal government promoting ethanol.

Their argument: If this new customer was going to use so much corn, the world had to choose between corn for food and corn for fuel; there simply wasn't enough to do both.

A Bogus Argument, a False Choice

Well, the debate, known by the short-hand "food versus fuel," is over. And, it turns out, we *don't* have to choose. There is plenty of corn to eat and plenty for making ethanol and plenty for feeding cattle and plenty more to export and still more to make chemicals and fabric. Prices have fallen back to around \$3.50 a bushel, 50 percent below the 2008 peak.

What happened? American corn growers — mostly small family farmers — produced the second-largest harvest ever in 2008, more than 12 billion bushels. Yields — bushels produced per acre — rose too. In fact, thanks to new technology, yields are likely to double in the next 25 years.

Huge combines guided by high-tech global positioning systems, now pick the corn and harvest kernels from the cobs right in the field — a century's worth of technology removed from farmers in horse-drawn carts who plucked each ear by hand.



Best of Both Worlds: More Corn, Cleaner Environment

Meanwhile, the environmental impact of growing corn declines every year:

- Biotechnology makes corn resistant to insects, which means less pesticides.
- Farmers grow five times as much corn as they did in the 1930s — on 20 percent less land.
- Farmers manage their fields differently, using reduced- or no-till management systems, which protects soil from erosion.
- And farmers today produce 70 percent more corn per pound of fertilizer than as recently as the 1970s.

Little of this would matter if we were talking about kale or broccoli. But corn is by far America's biggest crop, and the world's, too, bigger than wheat or rice or soybeans. Corn is a staple food in the Americas and much of Africa. Corn is one of the cornerstones on which our entire food system rests.

Surprise! Most of the Corn Grown Is Not for You to Eat

Yet few people realize only about 1 percent of the crop is the sweet corn that we buy frozen, canned or on the cob at the grocery store. The vast majority of the crop is instead commercial “field corn” used for other purposes.

Half the U.S. crop goes to feed cattle, pigs and poultry. Another quarter goes to ethanol, and 20 percent is exported. The rest goes to make food ingredients, chemicals, fabrics and plastic.

For years farmers have quietly grown all the corn the country needs, with little fanfare and little excitement but for the occasional natural disaster.

That changed in late 2007 when Congress increased the amount of ethanol and other biofuels it wanted blended into the nation's fuel supply to 36 billion gallons by the year 2022. That will equal 15 percent of the gas we use today — leading to less imported oil, greater national security and less pollution from gasoline. It has brought both kudos and criticisms to farmers.

Corn's Customers Complain about Competition

In 2008, sky-high oil prices pushed food prices to levels not seen in modern times. The food manufacturers didn't like it; the livestock feeding operations, accustomed to cheap corn, didn't like it. And the oil companies, feeling threatened by ethanol and trying to divert attention from their profits while their customers got creamed at the gas pump, didn't like it, either.



But, in fact corn prices haven't even kept up with inflation over the years. Below-cost feed saved the broiler-chicken industry more than \$11 billion and the pork industry \$8.5 billion between 1997 and 2005, Tufts University economists found.

The old corn customers cooked up a slick, expensive public-relations campaign to blame this new customer, ethanol, for driving up the price of corn and raising food prices. The country, they contended, had to choose between food and fuel when it came to corn.

As we now see, that was nonsense. It wasn't long last year before corn fell back to around \$4 a bushel as corn farmers kept the country and the world plentifully supplied with corn.

A New Coalition, a New Corn Story

Now that argument is over, our group, a coalition of corn farmers from 10 states, has allied with our trade association, the National Corn Growers Association, to highlight the contributions of today's high-tech and innovative corn farmers.

We are also working to reform and modernize the Farm Bill so it costs taxpayers less and provides an adequate safety net for the crucial agriculture industry.

And finally, we're educating legislators, the media and the public about corn. Yes, in the great scheme of things, in the midst of an economic meltdown and the beginnings of a new presidency, the problems of the corn industry might seem to rank way down the ladder.

Yet to think that way is shortsighted. If people know how important corn is to our food system, our economy and even our national security, and could understand the market a little better, we'd be less likely to have the kind of silly debate we had last year over food versus fuel. Instead let's not let this distract us from debating more important issues such as reforming the Farm Bill.

For there is plenty of corn to go around, and that is not going to change.





Introduction

Corn touches our lives every day. We:

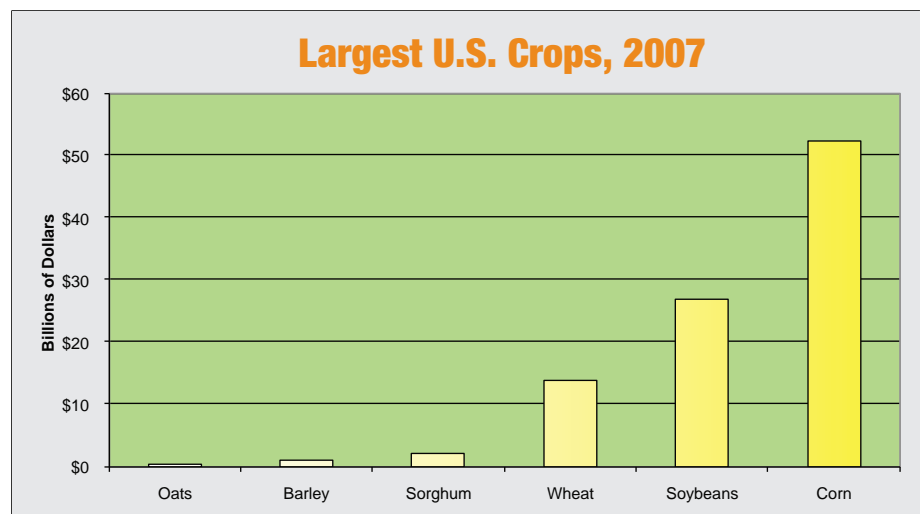
- eat or drink something made from corn or corn products, such as sweeteners or starch;
- eat beef, pork or chicken fed with corn;
- drive cars powered partly by ethanol made from corn;
- open boxes whose contents are protected by biodegradable plastic packaging made from corn;
- use fabrics, plywood and even pharmaceuticals made from corn.

Thousands of foods in your supermarket contain corn in some form — high-fructose syrup in the soft drinks, corn-fed fish or beef, caramel-flavored candy, canned fruit and ketchup.

Corn is a staple of American agriculture and a cornerstone of our economy. Yet few people realize that only a relatively tiny fraction of the crop goes into food. Far more is exported, fed to animals or made into ethanol.

Corn is America's biggest crop and the world's, too, bigger than wheat or rice or soy beans. Corn is a staple food in the Americas and much of Africa.

Because it pops up in so many places, it's hardly surprising that corn is news. What we want to do with this book is bring out the facts about corn in a straightforward, unvarnished manner in order to put the news in perspective.



Source: U.S. Dept. of Agriculture, National Agricultural Statistics Service

Here are the issues:

Thanks to technology, it takes *less* fertilizer and pesticide every year to grow more corn, the definition of a sustainable industry. But environmentalists worry large-scale corn farming puts unsustainable amounts of fertilizer and pesticides into the environment. The facts you will find in this publication show farmers are in fact good stewards of their land. They must be, since it is also their home and the source of their livelihood.

Well-meaning people worry that making ethanol is using so much corn that it is contributing to world hunger. But consider this fact: We grow enough corn in this country to export all the corn the rest of the world wants from us *and* make ethanol, feed people and animals, make biodegradable plastics and all the rest — and still have corn left over for emergencies.

And when speculators bid up corn prices, doubling them briefly in 2008, some not-so-well-meaning people, such as oil companies and grocery manufacturers, spotted an opportunity to blame ethanol. The reasons: Ethanol is a competitive threat to the oil companies; and the grocery manufacturers claimed a supposed shortage of corn meant consumers would have to pay more for food.

We now know that, despite their complaints, these industries were actually enjoying record profits. It turned out that the panic over the supply of corn in the summer of 2008 and the resulting spike in price was only temporary; there was in fact plenty to make ethanol, food and everything else that comes from an ear of corn. Despite the 2008 corn crop being the second-largest on record and corn prices falling back to normal, food prices have yet to come down.

The main culprit behind higher food prices turned out to be — no surprise — higher oil prices, which drove up production and transportation costs. The cost of corn, according to the federal government, is such a minimal part of the cost of making food as to be almost negligible.

Just the Facts, Please

Corn farmers are not used to this kind of controversy. For years we've quietly grown all the corn the country and the world needs, with little fanfare and little excitement except for the occasional natural disaster.

We have, admittedly, a bias in publishing this fact book. We are corn farmers. But we have compiled facts and figures from places like the federal government and respected universities.

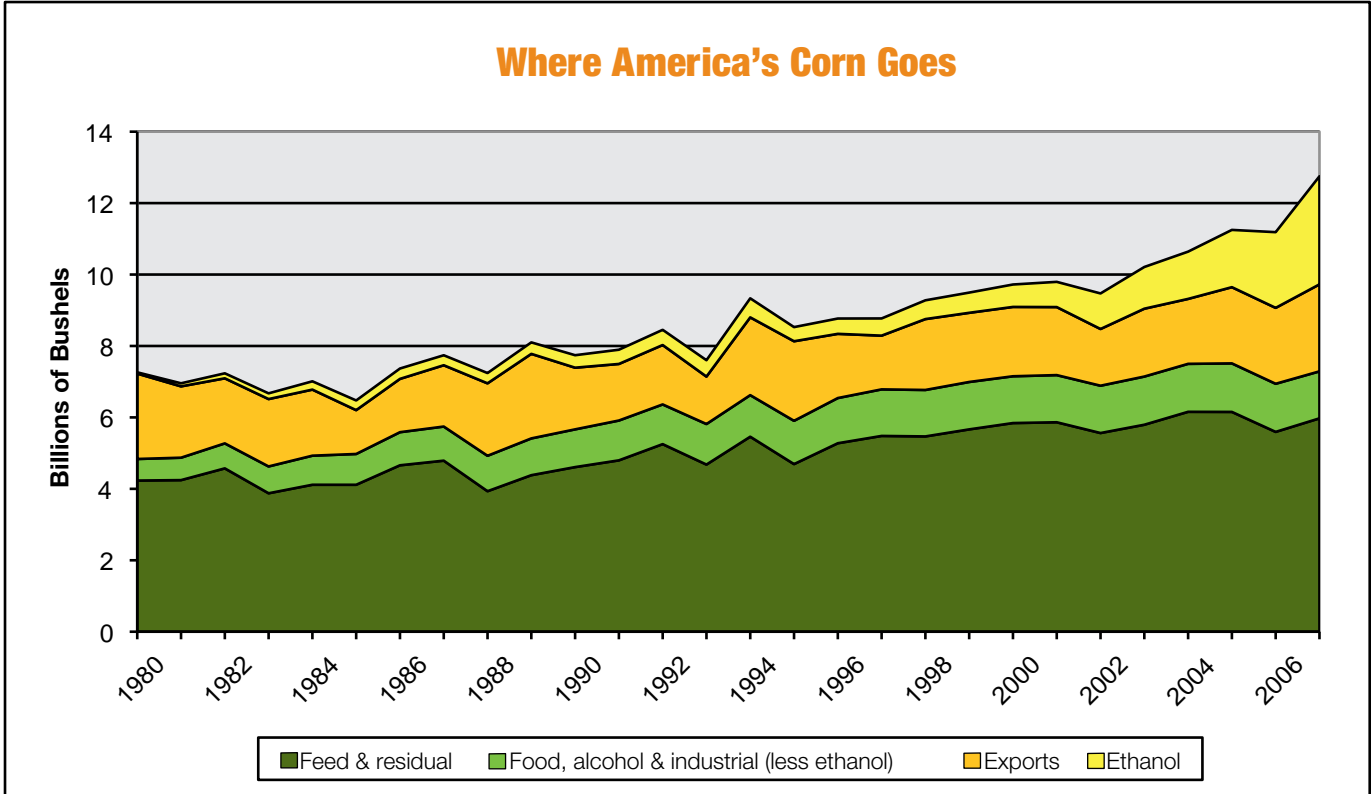
All but **1%** of the corn America produces is ***field corn.***

Corn is our largest crop because it is also one of our most versatile. All but 1 percent of the corn America produces is *field corn*

— industrial corn, if you will, almost half of which goes to feed cows, pigs and chickens, and another quarter of which goes to make ethanol. We export almost another quarter,



and much of the rest goes to making chemicals, fibers and food additives such as sweeteners. The miniscule amount remaining is popcorn or the vegetable, known as *sweet corn*, which we actually eat as corn on the cob or in succotash. Yet that's what most people think of when they talk about corn.



Source: U.S. Dept. of Agriculture, Economic Research Service

The corn industry is run by thousands of small farmers. It's not a huge business in dollars: The corn that farmers harvested in 2007 was worth \$52 billion. (The restaurant industry alone will do 10 times that much business.)

But American corn farmers are among the most productive in the world; they grow more than two-fifths of the world's corn.

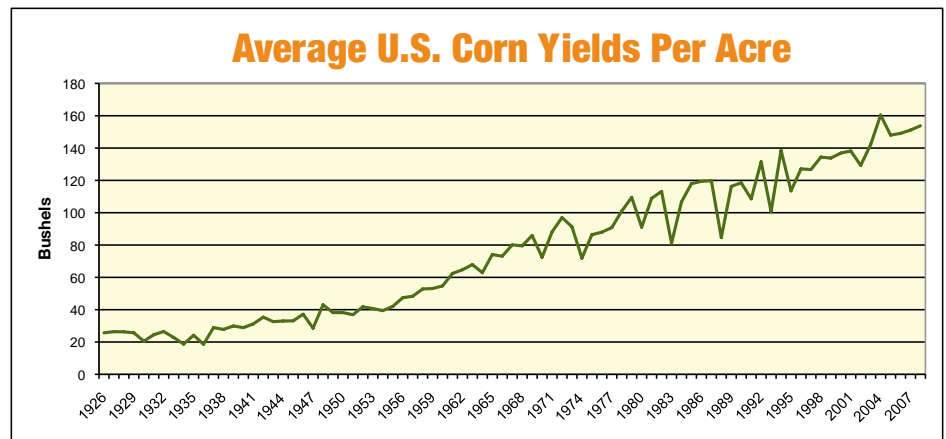
The corn that farmers harvested in 2007 was worth **\$52 billion.**

Corn is a stable economic engine when many industries are struggling. Corn keeps Texas feedlots, teeming with cattle, humming; keeps food prices down and offers Americans for the first time in our history a broad choice of affordable beef and chicken, pork, eggs and dairy products; and keeps the docks in Los Angeles busy winching big metal containers of corn onto ships headed for Colombia and Japan and Turkey.

Corn: A Short History

Corn has come a long way since the Mayans of Mexico first learned to domesticate the tall tropical grass they called maize about 9,000 years or so ago.

By the time Columbus arrived in the Americas in 1492, corn had spread and adapted to climates from the Andes to Canada.



Source: U.S. Dept. of Agriculture, Economic Research Service

In our country's early days, Native Americans taught the Pilgrims to grow corn, which helped keep the colonists of the Plymouth Colony from starving. Corn became a staple because it grew faster and was harder than any other food crop.

Before long, corn was an important early American crop, used to make whisky, corn bread, fritters, hush puppies, mixed with lima beans to make succotash, grits, hominy, chowders, puddings and the rest.

By 1900 tractors and other mechanized agricultural equipment had appeared, and corn production began to soar. In the 1920s, researchers began to crossbreed corn into hybrids that produced far more corn from the same number of acres.

These days, farmers **grow five times** as much corn as they did in the 1930s — **on 20% less land.**

The big animal feedlots came in the 1950s. By the 1960s, chemists were finding myriad new uses for corn, like making degradable plastics.

These days, farmers grow five times as much corn as they did in the 1930s — on 20 percent less land.

And the average yield per acre is expected to double in the next 25 years thanks to new technologies and more efficient farming.



Huge combines now harvest kernels from the cobs right in the field — a century’s worth of technology removed from the farmers in horse-drawn carts who plucked each ear by hand through most of history. Soon these combines will separate the kernels and cobs and unload them separately so the cobs can be used for making fuel.

Meanwhile, the impact of growing corn on the environment declines every year.

Today, farmers produce 70 percent more corn per pound of fertilizer than they did 35 years ago. New high-tech equipment puts fertilizer directly over the plants’ roots instead of spreading it on the whole field. Additionally, seed technologies are constantly improving corn’s fertilizer-use efficiency.

Today, farmers produce **70% more corn** per pound of fertilizer than they did **35 years ago.**

“No-till” cultivation, increasingly common, reduces soil erosion. It also lets farmers skip the step of plowing up old, dead stalks, which saves diesel fuel and builds up organic fertilizer in the soil.

Where All That Corn Goes

Through all these changes and all the new uses for corn, what we use corn for has remained largely unchanged for the last century. Most goes to animal feed.

It’s faster and cheaper to fatten cattle from 800 pounds to 1,300 pounds on a diet that includes corn than it is to feed them exclusively on grass.

But it is demand for ethanol that is growing fastest. Ethanol production jumped five-fold from 1.3 billion gallons to 6.5 billion in the last decade.

Spurring this growth is ethanol’s role in replacing the toxic gasoline additive MTBE and a congressional push for more domestic, renewable fuel. In 2007, Congress passed legislation calling for 36 billion gallons of ethanol and other biofuels to be blended into the country’s gasoline supply by the year 2022. That equals 15 percent of the gas we use now and would mean less imported oil, greater national security and less pollution from gasoline.

This major commitment to ethanol got the attention of other customers for corn

Worried about floods in the Midwest and fearing a shortage from all this new demand for ethanol, commodities brokers bid up corn prices to a record and unsustainable level for a short time in 2008.

That didn’t sit well with corn customers, who have been used to relatively cheap corn for decades. Corn prices rose by only a factor of three since 1949, while oil prices had jumped 26 times.

As sky-high oil prices pushed food prices to levels not seen in modern times, groups including the grocery manufacturers, the feedlots and oil companies tried through a slick public-relations campaign to shift the blame for high costs to ethanol while they enjoyed record profits.

These industries were so upset because they had become used to decades of buying corn at below what it costs farmers to grow it. In fact, corn prices haven't even kept up with inflation. For example, below-cost feed saved the broiler-chicken industry more than \$11 billion and the pork industry \$8.5 billion between 1997 and 2005, a study by economists at Tufts University found.

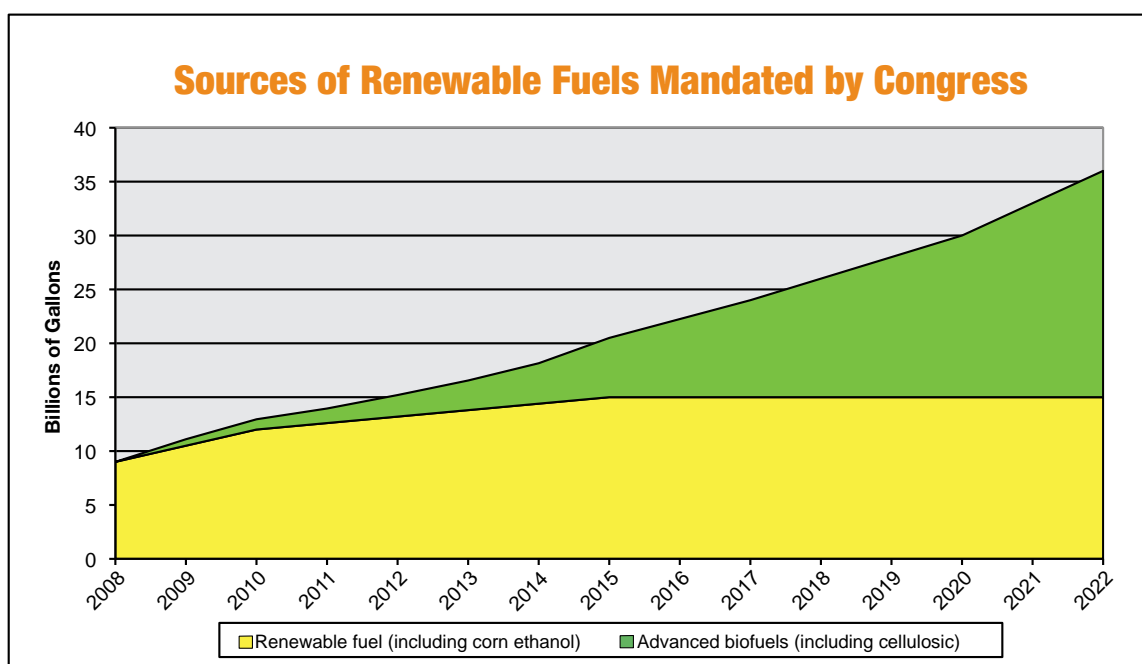
According to the Daily Livestock Report from the Chicago Mercantile Exchange in 2007, for instance, "pork producers are likely in the best financial shape ever."

Taking the Starch Out of Corn's Detractors

The truth is that when the price of corn rises, very little is passed on to grocery shoppers. Only 19 cents of our food dollar goes to farmers, and less than a nickel's worth to corn farmers, according to the federal Agriculture Department. Furthermore, the corn used for ethanol is industrial-use field corn, not the sweet corn grown for human consumption.

And, in fact, if you needed further proof that ethanol and corn weren't behind the rise in food prices, consider this: As corn prices fell back to normal by the fall of 2008, food prices continued to rise faster than usual.

The majority of that increase in food prices continues to come from record-setting energy costs and stronger global demand for food; increased U.S.



Source: Renewable Fuels Association



agricultural exports resulting from stronger demand and a weaker dollar; and weather-related production problems in some areas of the world, according to the Agriculture Department.

The fact is that there is plenty of corn to go around. American corn growers — more than 90 percent small family farmers — produced more than 12 billion bushels in 2008, the second-largest

harvest on record. In 2007, after meeting all the needs for corn, there were still 2.2 billion bushels to put away against a rainy day.

And as the technology for making renewable fuels advances, demand for corn will level off. About half the renewable fuel that Congress mandated in 2007 must eventually come from somewhere other than field corn — weeds, refuse, switch grass or corn cobs, for instance. However, without corn to prime the ethanol pump and create a market, these other fledging fuel sources might never reach the mass-production stage.

While ethanol is the hot topic these days, corn has a bigger story to tell. In this fact book, a coalition of corn farmers in 10 states and the National Corn Growers Association bring you a straightforward look at corn, one of the nation's few growing businesses amidst the recession that began in late 2007.

Only 19¢ of our food dollar goes to farmers,
and **less than a nickel's worth**
to **corn farmers.**





Chapter One: The Uses of Corn

Corn prices haven't risen much for 60 years. The \$1.24 a bushel corn cost in 1949 had risen only by a factor of three to hit just \$4.20 by 2007 while oil rose 26 times. Inexpensive corn made it attractive to feed to animals and its abundance meant there was enough to use for making non-traditional products, from biodegradable packing peanuts to fabric.

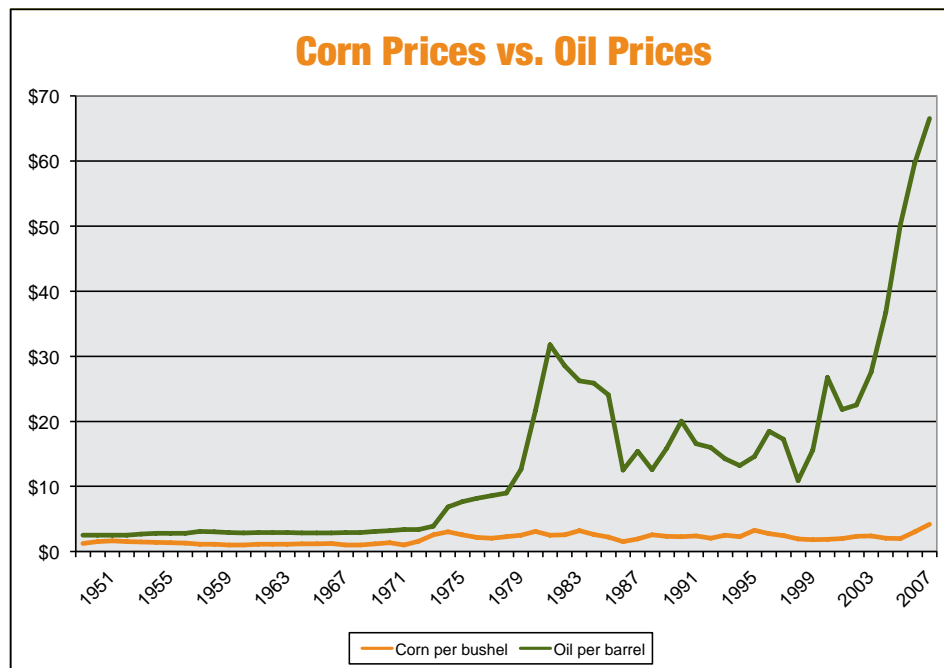
Let's look at how that happened:

As with other crops, corn harvests didn't increase much in the early years of the country. Farm implements like plows were powered by horse power — real horses, that is. There often weren't enough hands to plant and harvest a lot of corn. And yields were small because, before modern seed companies, farmers had only their own corn to choose from in selecting the best genetic traits.


As yields exploded in the 1950s, a flood of cheap corn came on the market. Most of this new corn went to feed animals, stimulating growth in the production of beef, pork and chicken.

In 1972, the U.S. sold a huge amount of wheat to the former Soviet Union and, with bad weather in the Farm Belt, triggered high prices and a food-shortage scare far worse than the contrived corn shortage that drove up prices in the summer of 2008. By 1973, housewives were even out protesting high prices in front of supermarkets.

The federal farm program began to change as the floor under the price of corn and other crops was removed. Farmers would still be reimbursed the difference between what they sold their corn for and the target price



Sources: U.S. Dept. of Agriculture, National Agricultural Statistics Service and U.S. Dept. of Energy, Energy Information Administration



the government set but, without the floor, corn prices dropped, benefiting companies that process corn into food and industrial products.

From then on, as corn got cheaper, farmers would have to grow more and more just to break even every year. Finding new uses for that corn started as an economic imperative for farmers but has led to creating new businesses and a place for corn as a strategic national asset.

If **corn prices** were rising as fast as **oil**, a bushel would sell for **\$13.50** today instead of around **\$3.50**.

Despite 2008's temporary run-up, corn prices lag inflation in terms of real dollars. Even at its record prices in June 2008, says the international investment

bank Barclays Capital, corn was still 40 percent below its inflation-adjusted peak in 1974. If corn prices were rising as fast as oil, a bushel would sell for \$13.50 today instead of around \$3.50.

Making Blouses from Corn

While still a relatively small business, making non-food products like clothes, plastics and other products is one of corn's fastest-growing markets. Making something other than food out of plants has been around a long time. However, with the rise of the oil industry, it was cheaper and easier to make products like plastic from petroleum.

But in the 1970s, during the first Arab oil embargo, oil got expensive. And people began to worry about the environment. The notion of using biotechnology to convert renewable, biodegradable agricultural products into industrial use on a large scale blossomed. Production of ethanol and other products increased.

The key step is converting a carbohydrate like corn starch to a chemical or usable fiber with biological catalysts such as enzymes and microorganisms. The result is a growing array of environmentally friendly products in health care, food and manufacturing based on corn-based sugars and starches.

A good example is polylactic acid, used in synthetic fibers for clothes, bedding, carpeting and in biodegradable plastics. The U.S. churns out as much as 80 million pounds of plastic a year, most of which is now made from petroleum products. Plastic made from corn is more environmentally friendly, is homegrown and clearly there is a huge market. Overseas markets such as Japan and Taiwan are major customer for these degradable products because they can be composted and removed from the waste destined for landfills, which are in short supply.

Another benefit: These industrial processes, including making ethanol, also create a high-protein animal feed known as distillers grains, too.

The National Corn Growers Association encourages innovative technology at a biannual forum of leading scientists called the Corn Utilization and Technology Conference, which works on finding new ways to use corn.

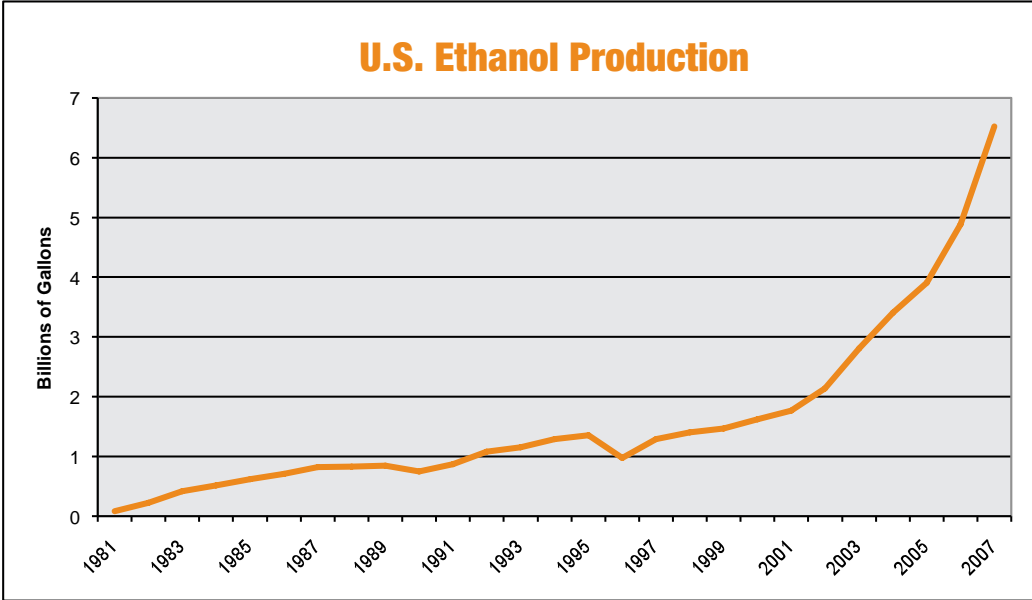


Farmers envision a day when these new technologies will create factories in the fields outside small towns and rural neighborhoods, creating good jobs and reversing the slow decline of many of these places.

Ethanol: the Corn in Your Gas Tank

Ethanol now uses a quarter of American corn, second only to animal feed. Because both the feed and export markets are relatively flat, ethanol is taking up the slack.

And ethanol is a clean, renewable fuel that is entirely domestic. Imagine, if you will, a U.S. capable of producing all the fuel it needs from a renewable, environmentally friendly resource within its own borders. It won't happen tomorrow, of course. But ethanol is a good start; is widely available now, unlike other renewable fuels; and bigger and better technologies are coming.



Source: U.S. Dept. of Energy, Energy Information Administration

Ethanol, also called ethyl alcohol, is a flammable, non-toxic, colorless, liquid.


Fermenting sugar into alcohol for drinking was one of the first chemical processes our ancestors discovered.

In fact, Henry Ford's 1908 Model T was one of the first flex-fuel vehicles; it could run on ethanol or gasoline.

After the first Earth Day in 1970 and the Arab oil embargo of 1973, Americans started to worry about the environment as well as fuel prices and supply. A handful of companies began churning out small batches of ethanol again.

In 2005 Congress passed the Renewable Fuels Standard in the Energy Act of 2005, which set targets for the amount of ethanol to be blended into the nation's gasoline supply.

Ethanol production soared to 6.5 billion gallons in 2007. Ethanol companies grew relatively large and even sold stock to the public.



In 2007, Congress raised the amount of ethanol it wants the country to use to 36 billion gallons by little more than a dozen years from now, in 2022. While 21 billion gallons of that must eventually be made from cellulosic materials — such as corn cobs, wood chips or grasses — the law has been instrumental in boosting demand for corn ethanol.

By 2008, more than 160 biorefineries were in action in America, bringing a boost to rural areas around the Midwest.

The law's purpose, it says, is to “move the United States toward greater energy independence and security, to increase the production of clean renewable fuels, to protect consumers, to increase the efficiency of products, buildings, and vehicles, to promote research on and deploy greenhouse gas capture and storage options, and to improve the energy performance of the federal government...”

The Energy Bill, however, had two unintended consequences. First, after floods hit the Midwest in 2008, speculators betting on a shortage ran up corn prices, bumping a bushel from around \$4 to \$8. That increased costs for corn customers.

And after Congress asked producers for yet more ethanol, the oil companies also realized they had a significant challenge on their hands: Ethanol is already 7 percent of the fuel we put in our cars and trucks. In fact, by the end of 2008, the amount of ethanol we were producing monthly nearly equaled the amount of gasoline we refined from all the oil we imported from Saudi Arabia.

When oil prices doubled in 2008, ethanol helped keep prices at the pump down, saving the average American family \$500 a year, according to a study by the Renewable Fuels Association using government statistics.

All of a sudden, corn was controversial. The food-makers launched a slick, expensive campaign against corn and ethanol with oil companies cheering

them on — a campaign based on misinformation and in some cases, outright lies.

They argued that ethanol took more energy to produce than it yielded; that diverting corn to

ethanol was raising food prices for Americans; and this purported shortage of corn was starving poor people abroad.

Corn ethanol, it's true, is not the sole solution to our energy problems. The jury is still out on the full range of environmental benefits. But the case the grocery manufacturers ginned up against ethanol is demonstrably flimsy. In fact, it's hard not to conclude that they have already lost this debate.

First, let's look at supply. There is plenty of corn to go around in the U.S. and enough to meet demand for exports. Every year since 1995, farmers got an average of three more bushels a year from the same acre of corn.

By the end of 2008, the amount of **ethanol** we were producing monthly **nearly equaled** the amount of **gasoline** we refined from all the oil we imported **from Saudi Arabia.**



Even with delayed planting and Midwest floods, 2008 was the second-largest corn crop on record. There is corn left over from 2007. So we will likely stockpile as much as a tenth of the crop this year. And farmers expect yields to double in the next 25 years.

Now for the environmental debate: Two studies that were not reviewed by other scientists and which Time magazine cited in a 2008 cover story hypothesized that an unintended consequence of making ethanol from corn would be more greenhouse gases released into the atmosphere as farmers clear new land around the world. The studies theorize that as an increasing amount of American corn is converted to ethanol, other grains must be grown elsewhere around the world to compensate, which will lead to the destruction of rain forests in the Amazon and environmentally sensitive land elsewhere.

But two Department of Energy scientists, Dr. Michael Wang of the department's Argonne National Laboratory and Zia Haq of its Energy Efficiency and Renewable Energy office, called the studies "speculative" and "limited" and said they "may misguide biofuel policy development."

A key flaw these scientists cited: The studies underestimated how fast American corn farmers are getting ever more corn from the same amount of land to meet demand.

At any rate, the 2007 energy bill recognized these concerns about land-use changes and required the Environmental Protection Agency to analyze the entire process of making ethanol, from growing corn to distilling the alcohol. If, as the two studies suggest, the indirect impact of changes in land use on the environment is detrimental, the government will take away tax credits to ethanol.

The EPA is already studying the issue and preliminary findings suggest corn ethanol is, all things considered, considerably better for the environment than gasoline. Amid the long and sometimes heated debate between ethanol proponents and detractors, some of the most recent studies indicate that modern ethanol plants and farming practices cut greenhouse gas emissions far more than previously estimated.

One study recently published in the *Journal of Industrial Ecology* found that greenhouse emissions from corn ethanol are as much as 60 percent lower than gasoline.

| U.S. Ethanol Plants, 2007 | | |
|----------------------------------|-------------------------|--|
| State | Number of Plants | Production Capacity (Millions of Gallons) |
| Iowa | 28 | 1,862.5 |
| Nebraska | 18 | 1,017.5 |
| Illinois | 7 | 881.0 |
| South Dakota | 13 | 607.0 |
| Minnesota | 16 | 604.6 |
| Wisconsin | 7 | 408.0 |
| Indiana | 4 | 292.0 |
| Michigan | 4 | 214.0 |
| Kansas | 8 | 212.5 |
| Missouri | 5 | 186.0 |
| North Dakota | 3 | 123.0 |
| Texas | 1 | 110.0 |
| Colorado | 3 | 85.0 |
| California | 4 | 68.0 |
| Tennessee | 1 | 67.0 |
| Arizona | 1 | 55.0 |
| New York | 1 | 50.0 |
| Kentucky | 2 | 35.4 |
| Oregon | 1 | 35.0 |
| New Mexico | 1 | 30.0 |
| Wyoming | 1 | 5.0 |
| Georgia | 1 | 0.4 |
| Totals | 130 | 6,948.9 |

Source: Renewable Fuels Association

The U.S. Department of Energy calculates that using 6.5 billion gallons of ethanol in 2007 reduced greenhouse gas emissions by about 13 million tons. Studies also show ethanol reduces tailpipe carbon-monoxide emissions by as much as 30 percent.

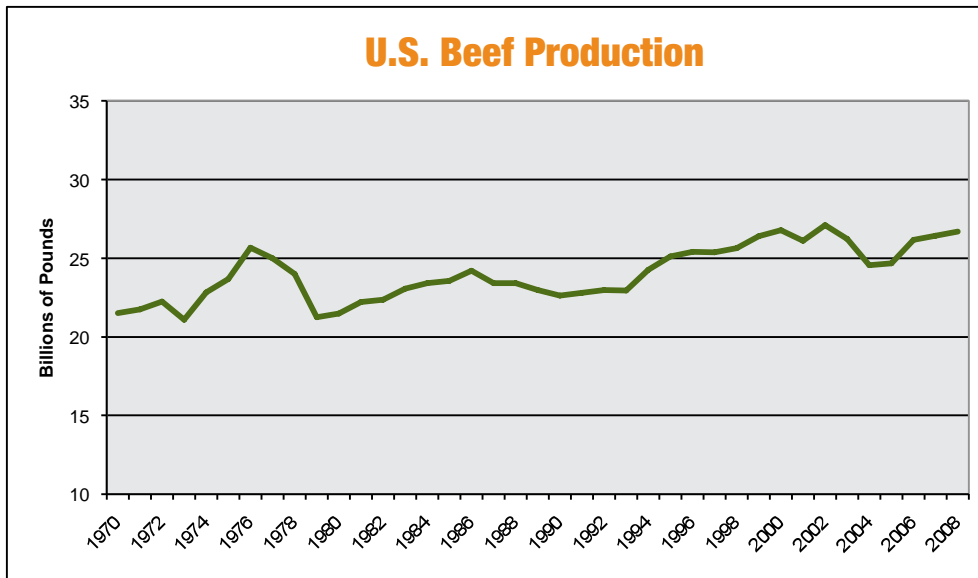
The bottom line: Ethanol has energized the corn business while providing renewable energy. It has helped raise corn prices above the cost of production, allowing the markets to pay farmers for their crops instead of government support programs. And it has boosted tax revenue from rural areas.

Feeding Animals

The livestock feeding operations that grow beef, poultry, pork and the dairy farms that produce milk are corn's biggest customers, using almost 6 billion bushels annually, or almost half of the corn crop.

Corn makes possible a wide variety of fresh, inexpensive meat and poultry. Few people realize this is a relatively recent development.

Corn has made beef the single largest business in American agriculture, with more than 1 million businesses, many of them small, says the National Cattlemen's Beef Assn. — the typical herd size is 40 cattle.



Source: U.S. Dept. of Agriculture, Economic Research Service

The young animals these ranchers raise have been going to big animal-feeding operations since the 1950s. They bring animals to market more efficiently than ranchers who raise cattle solely on grass.

It was only with the coming of the feedlots that most people could afford to eat meat every day — sausage for breakfast; bologna sandwich for lunch; pork chops for dinner.

These modern livestock-feeding operations brought industrial-production techniques to raising animals for food. They

bring together thousands of steers at a time to be fattened humanely and according to federal regulations. The average cow now yields almost 600 pounds, up from 400 just 40 years ago. Each year the industry turns out more than 26 billion pounds of beef.

That made it a \$75 billion industry in 2007, triple what it was a decade earlier. That year spending on beef was \$250 for every man, woman and child in America, who consumed an average 63 pounds (60 for chicken).



However, critics such as Michael Pollan (author of the *New York Times* bestseller *The Omnivore's Dilemma*) contend the feedlots require widespread use of antibiotics for cattle which, these critics say, threatens to generate microbes resistant to antibiotics that could not only strike down cows but also, eventually, humans.

But the Food and Drug Administration, the U.S. Department of Agriculture and even the United Nations have a different view.

“For food animals, the gains that have been made in food-production capacity would not have been possible without the ability of safe and effective drugs to contain the threat of disease to animals,” say the FDA’s veterinarians.

The United Nations’ World Health Organization says antibiotics “are vital medicines for the treatment of bacterial infections in both humans and animals”

Feeding People

The corn we know best is the corn we see on our plates. This is sweet corn or corn on the cob. Yet it is by far the smallest part of the crop, less than 1 percent of the corn grown for domestic consumption in 2007, or a scant 193 million pounds.

According to the Agriculture Department, only 19 cents of every dollar you spend on food goes to farmers. And corn farmers get only a few cents of that. Labor costs add 38 cents, while packaging, transportation, energy, advertising and profits account for 24 cents.



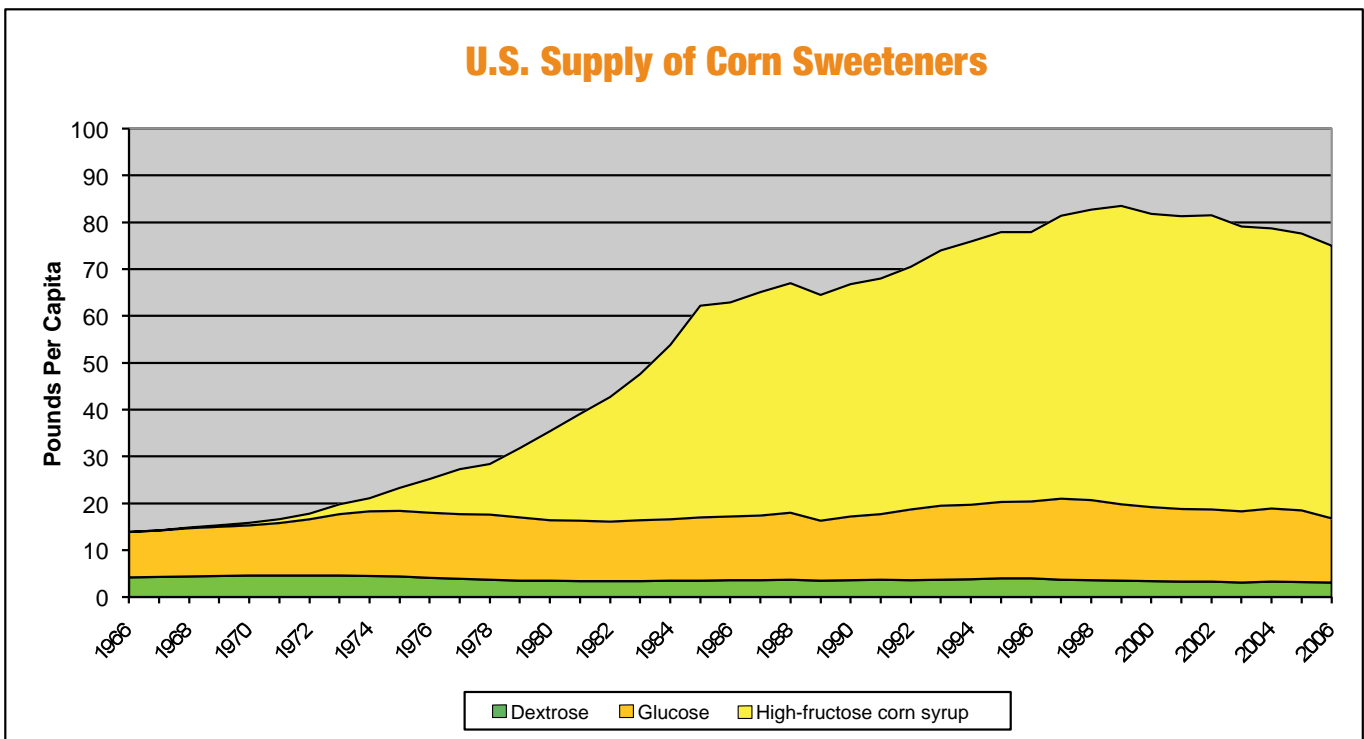
Source: USDA’s Economic Research Service

Foods like cereal, snacks and soda sweetened with corn syrup contain very little corn, so even big drops or rises in the price of corn don't make much difference. A box of corn flakes contains 10 ounces of corn, or about a nickel's worth — even at \$5 a bushel.

The cost of a barrel of oil, according to the global consulting firm LECG, has two to three times more impact on retail food prices than grain prices, especially in 2008 as oil prices jumped to record highs.

Corn's biggest and most valuable use in foods is as a sweetener, especially high-fructose corn syrup. While some critics object to what they contend is the subsidizing of a major cause of obesity through farm subsidies, the American Medical Association and the pro-consumer Center for Science in the Public Interest say the sweetener is no better or worse than regular sugar when consumed in moderation.

“The special harmfulness of high-fructose corn syrup has become one of those urban myths that sounds right, but is basically wrong,” says Michael Jacobson, executive director of the consumer group.



Source: U.S. Dept. of Agriculture, Economic Research Service



Chapter Two: The Supply of Corn

Despite the panic in 2008, when corn prices doubled, farmers provided plenty of corn to go around and will continue to do so. Farmers produced 12 billion bushels, or \$52 billion worth of corn, which also makes it by far America’s most valuable crop.

In fact, American farmers produced the five largest corn crops in history during the past five years. Even after supplying food-makers, ranchers, ethanol producers and grain exporters, America will *again* be able to save 10 percent of this year’s harvest for the future.

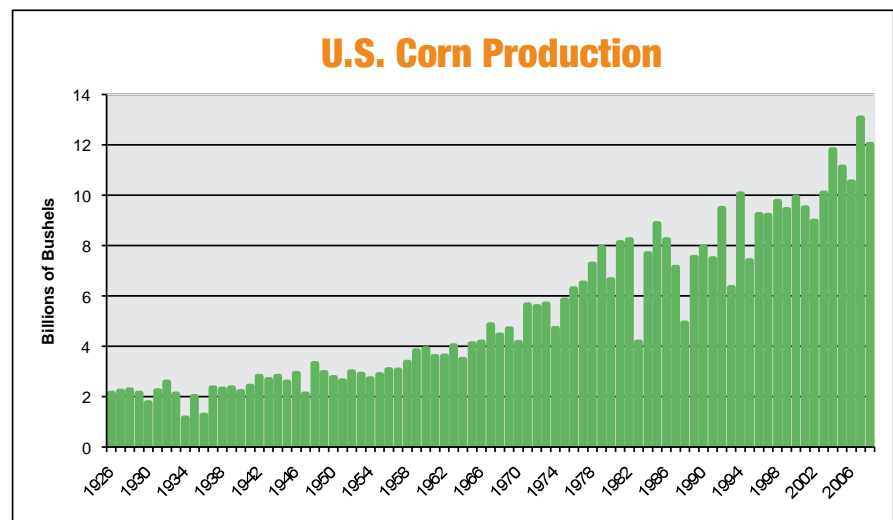
Corn production has marched steadily upward for decades while using fewer acres.

Farmers today grow five times as much corn as they did in the 1930s — on 20 percent less land. That is still 13 million acres, or 20,000 square miles, twice the size of Massachusetts. The yield per acre has skyrocketed from 24 bushels in 1931 to 150 now, or a six-fold gain. And the Agriculture Department expects the average yield per acre to double in the next 25 years.

What is driving this revolutionary change? For starters, corn is genetically modified to be resistant to insects, fungus and even drought.

And farmers are using cutting-edge technology that uses less energy and cuts waste. Many farmers, for instance, use global positioning systems to apply fertilizer, using soil analysis and detailed maps of their fields downloaded to the tractor’s computer to know how much fertilizer to apply to each part of the field.

These “precision farming” techniques also include using GPS to measure crop yields in each part of the fields, using this to tweak the amount of fertilizer to apply



Source: U.S. Dept. of Agriculture, Economic Research Service

the following year. Precision farming techniques are also used in applying the application of crop-protection products for better yields and better environmental protection.

The Forecast: Enough Corn for All Users

As for demand for corn, it is at an all-time high, thanks mostly to corn's newest market, ethanol. But so is the supply, thanks to the innovation we detail in this book.

Ethanol, which consumed a quarter of the corn crop in 2008, will jump by half in the next decade, consuming a third of the crop, the Agriculture Department forecasts. Eventually, corn used for ethanol will recede as a share of the corn crop as biofuels producers refine the technology for making fuel from other plant materials.

Corn used to make processed food — and especially for industrial uses like making chemicals — will grow significantly, perhaps as much as 40 percent.

On the other hand, corn for animal feed and reserves, now 45 percent of consumption, will rise no more than 3 percent by 2018, shrinking to 40 percent of the pie. In fact, the Agriculture Department says use of corn for industrial products and food-processing will surpass animal feed in the 2009 harvest season.

Meat is a growing industry with healthy exports. However, demand for corn from livestock and chicken producers has been relatively flat for a decade as the livestock industry becomes more efficient and the feedlots replace some corn with distillers grains, a by-product of producing ethanol.

Corn exports will continue to be relatively flat too, growing only 5 percent, according to the Department of Agriculture. Most of our corn exports are destined to feed livestock, rather than be used for direct human consumption.

One Bushel of Corn (56 lb.) Provides:

31.5 lb. of starch

OR

33 lb. of sweetener

OR

2.8 gal. of fuel ethanol

OR

22.4 lb. of PLA fiber/polymer

Plus:

17.5 lb. of distillers dried grains with solubles*

13.5 lb. of gluten feed**

2.6 lb. of gluten meal**

AND

1.5 lb. of corn oil**

*In dry grind ethanol process.

**In wet mill ethanol process. Gluten feed is 20 percent protein and gluten meal is 60 percent protein.

Source: National Corn Growers Association

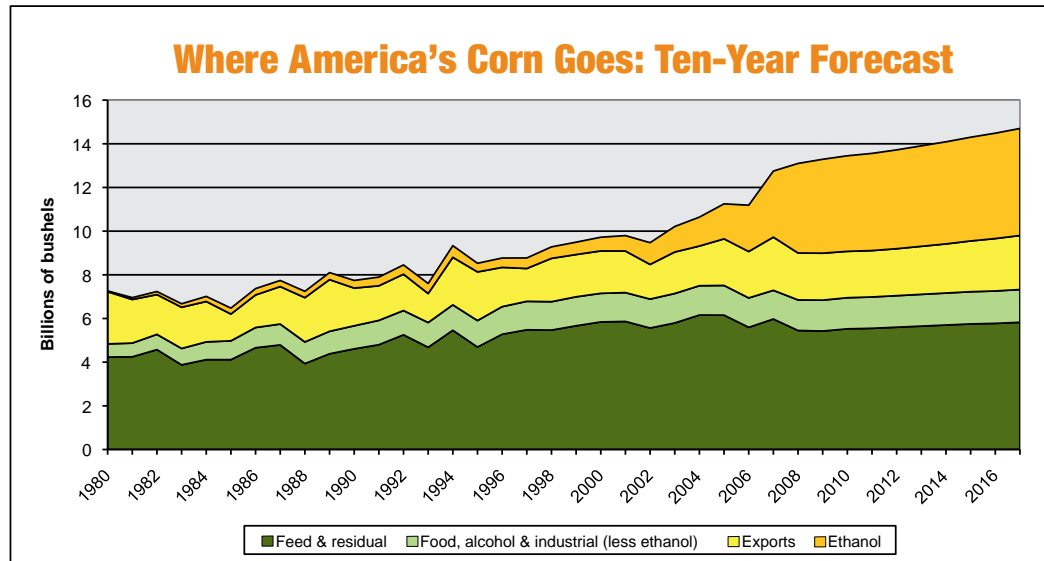


In 2007, corn farmers reacted to demands by planting 94 million acres, a 20-percent increase. After a decline in 2008, as other crops grew more valuable, corn acreage will increase and remain above 90 million acres for the next decade, the Agriculture Department projects.

But the outlook for corn prices isn't good. The department forecasts prices to continue to rise slightly through 2010 thanks to increased ethanol production, then decline to around \$3.60 a bushel for the rest of the decade as both the animal feed and ethanol business slow.

A more recent survey by the Congressional Budget Office says approximately the same thing: Prices will bottom out at \$3.65 a bushel by 2012 and rise no higher than \$3.94 through 2019.

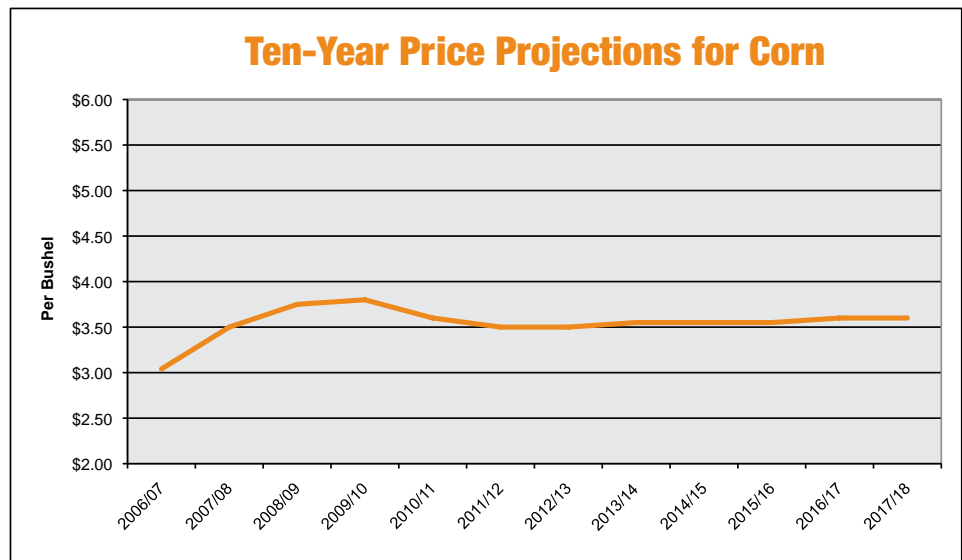
Most importantly, though, the corn crop will continue to expand every year, the Agriculture Department forecasts, so that there will still be more than 8 percent of the crop left over by the end of the year in 2018.



Source: U.S. Dept. of Agriculture

Exporting to the World

For much of their history, Americans spent most of their income on food. Now we spend just 10 percent, says the Agriculture Department. Households in less-developed countries like India often spend 50 percent of their income on food. Even countries in Europe spend more than twice what U.S. consumers spend. Americans have more money to spend elsewhere — in their children's education, travel, houses and cars.



Source: U.S. Dept. of Agriculture

We produce enough corn that we can export one in every five rows of corn each year, most of it going to animal-feeding operations abroad.

Our corn exports, however, haven't changed much and aren't likely to in the future.

We produce enough corn that we can export
one in every five rows
of corn each year.

Much of the rest of the world is getting more productive and hence more self-sufficient. Plus fears of genetically modified American corn have slowed

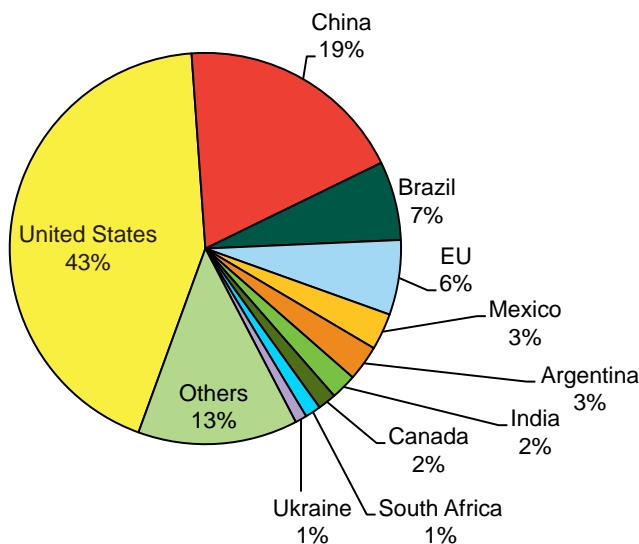
exports, the General Accountability Office says, even though U.S. authorities and scientists say these fears are completely unjustified.

Still, while the \$13 billion exported corn brought in during 2008 didn't dent our enormous, petroleum-inflated trade deficit, it remains one of the few bright spots in the U.S. balance of trade.

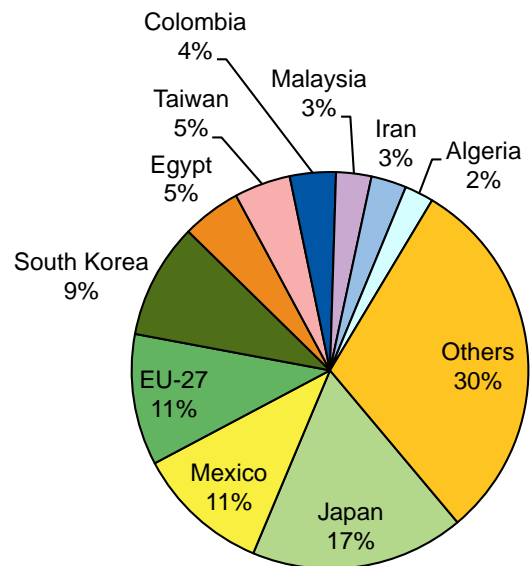
In 2008, our biggest customers were Japan, which took 17 percent of our corn exports; Mexico, 11 percent; and South Korea, 9 percent.

Our position as a leading corn grower and exporter isn't likely to change much in the foreseeable future. The U.S. grows by far the most corn in the world, at 43 percent, followed by China, 19 percent, and the European Union and Brazil, both around 6 percent.

World Corn Production, 2007/2008



Top Corn Importers, 2007/2008



Source: U.S. Dept. of Agriculture, Foreign Agriculture Service

Technology Reduces Corn's Environmental Impact

Since the 1970s and the birth of the environmental movement in the U.S., corn growers have been using sound practices in managing the land and using less pesticides and fertilizer.

As technology advances, farmers have used it to both increase productivity and profitability while being stewards of the environment.

After all, their families live on the farm, and the land is the farmer's primary asset, often passed on the next generation.

Reduced tillage and other farm management practices have **reduced soil erosion 43% in 20 years.**

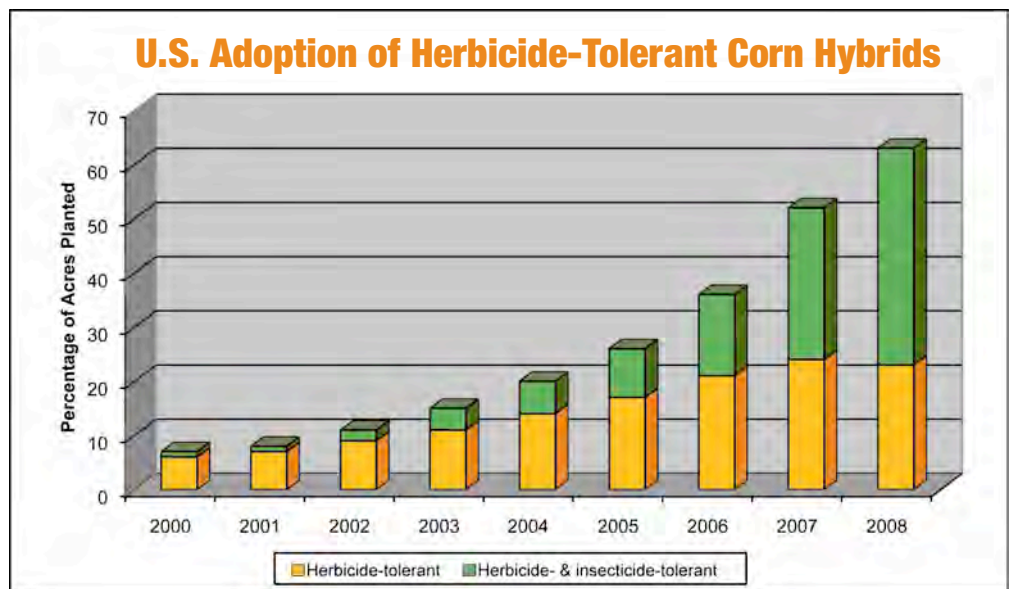
Those concerns make a difference. A 2006 U.S. Geological Survey report on the quality of the nation's streams and ground water found

pesticides "at concentrations far below federal or state standards and guidelines for protecting water quality"

Furthermore, improvements in crop-protection products in the last 20 years have made them less toxic and more degradable.

Reduced tillage and other farm management practices, meanwhile, have reduced soil erosion 43 percent in 20 years, says the Agriculture Department. A farmer can save as much as 3.5 gallons of fuel an acre from no-till farming.

Through farm bill conservation programs, farmers are reducing soil erosion, improving water quality and increasing wildlife habitat.



Source: U.S. Dept. of Agriculture, National Agricultural Statistics Service



Corn farmers participate in state, local and national programs that idle the most environmentally sensitive land.

Farmers are also finding ways to better manage water. As competition for it intensifies in some areas of the country, they are using new technology, from soil-moisture testers to subsurface irrigation techniques, to reduce water use. Less than 15 percent of all the corn farmland in the U.S. is irrigated. The remaining acres rely solely on rainfall.

Less than 15%
of all the corn farmland in the U.S. is *irrigated.*

And farmers produce 70 percent more corn from a pound of fertilizer than they did 35 years ago.

Biotechnology: Getting the Most from a Seed

As early as 1941, American scientists coined the term “genetic engineering,” also called biotechnology.

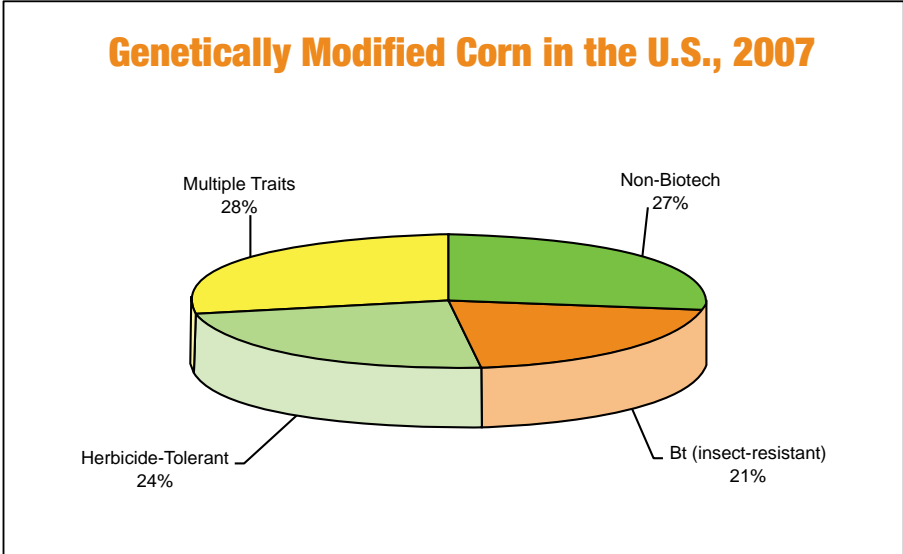
Biotech, however, really got underway in the 1990s, and now bioengineered crops are everywhere.

By 2005 the U.S. was the world’s biggest grower of biotech crops with more than half. It’s thought global farm income would have been about \$5 billion less that year without those crops. The biggest gainers have been soybeans and cotton. However, corn boosted farm income by more than \$3 billion by 2005.

Farmers can increase production by using seeds genetically modified to produce plants that can make their own pesticides, resist drought or even contain extra nutrients.

Already, for example, genetically engineered, insect-resistant cotton, soybeans and corn mean farmers can use less synthetic pesticides that may contaminate groundwater and soil.

Herbicide-tolerant corn is particularly compatible with no-till agriculture that helps preserve topsoil from erosion. Reduced tillage improves the soil structure, increasing water movement through the soil following irrigation or rain and holds it there.

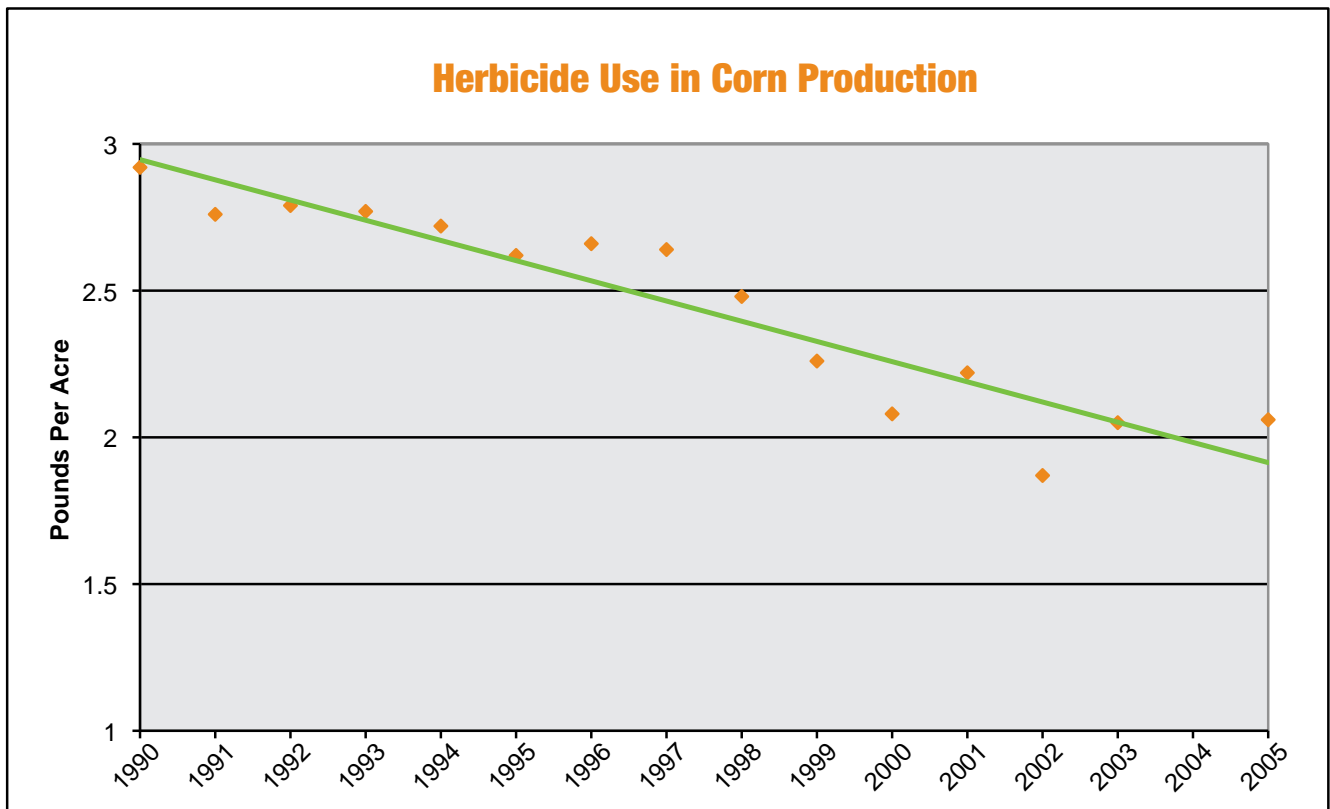


Source: U.S. Dept. of Agriculture, National Agricultural Statistics Service

Agricultural biotechnology has been used to protect crops from devastating diseases that could wipe out the crop and create food and feed shortages.

Despite the advantages, GMOs, or genetically modified organisms, have stirred controversy, especially abroad. The Agriculture Department says those fears are unfounded.

“The USDA’s Animal and Plant Health Inspection Service and the EPA review any environmental impacts of such pest-resistant biotechnology-derived crops prior to approval of field-testing and commercial release,” says the Agriculture Department.



Source: U.S. Dept. of Agriculture, National Agricultural Statistics Service

“There’s a misconception that it would be better to go back to more primitive methods of agriculture because chemicals are bad or genetics is bad. This is not true,” wrote Patrick Moore, co-founder of the environmental group Greenpeace.

“We need to use the science and technology we have developed in order to feed the world’s population, a growing population. And the more yield we get per acre of land the less nature has to be destroyed to do that... It’s simple arithmetic. The more people there are, the more forest has to be cleared to feed them, and the only way to offset that is to have more yield per acre.”



Chapter Four: The Farmer

Many Americans believe the day of the small farmer is over. But corn production remains a small-business industry, according to the Census of Agriculture.

Individuals or families own the vast majority of corn farms — 85 percent, or about 300,000 out of 350,000 — and grow about the same percentage of the harvest. Another 5 percent are family-held corporations; 10 percent are owned by partnerships. The remaining handful — less than 2,500 — are owned by other types of corporations or estates, trusts and institutions.

Individuals or families own 85% of corn farms.
Another **5%** are **family-held corporations.**

The Federal Bureau of Labor Statistics, says that most farms employ only the farmer and perhaps a family member or hired hand or two.

Fewer than 3 percent of corn farms gross more than \$1 million a year. A solid majority (almost 60 percent) gross less than \$100,000 a year.

And the average corn farm has fewer than 200 acres. Only 6 percent are bigger than 2,000 acres, according to government statistics.

Agriculture still has a hugely important place in this country. There were 1.3 million farmers, ranchers and agricultural managers in 2006, according to the federal Bureau of Labor Statistics, not many out of a work force of 146 million. (About 80 percent of the farmers and ranchers are self-employed.)

But farming isn't merely an iconic activity, a tradition that ties us symbolically to the founding of the nation: It is the economic foundation on which our country first grew strong.

Farms in all of agriculture, including corn, are consolidating, which with increased productivity means there are fewer jobs down on the farm. Yet there has also been significant growth in businesses related to corn, such as bio-refining, making equipment and developing new biotechnology products.

U.S. Corn Production by State, 2007

| | Acres Planted (1,000s) | Acres Harvested for Grain (1,000s) | Average Yield (Bushels Per Acre) | Total Production (1,000s of Bushels) |
|----------------|------------------------------|---|---|---|
| Alabama | 340 | 280 | 79 | 22,120 |
| Arizona | 55 | 23 | 185 | 4,255 |
| Arkansas | 610 | 590 | 168 | 99,120 |
| California | 650 | 200 | 180 | 36,000 |
| Colorado | 1,200 | 1,060 | 142 | 150,520 |
| Connecticut | 26 | - | - | - |
| Delaware | 195 | 185 | 97 | 17,945 |
| Florida | 75 | 35 | 95 | 3,325 |
| Georgia | 510 | 450 | 130 | 58,500 |
| Idaho | 310 | 105 | 165 | 17,325 |
| Illinois | 13,200 | 13,050 | 175 | 2,283,750 |
| Indiana | 6,500 | 6,370 | 155 | 987,350 |
| Iowa | 14,200 | 13,850 | 171 | 2,368,350 |
| Kansas | 3,900 | 3,700 | 140 | 518,000 |
| Kentucky | 1,450 | 1,360 | 129 | 175,440 |
| Louisiana | 740 | 730 | 165 | 120,450 |
| Maine | 28 | - | - | - |
| Maryland | 540 | 455 | 103 | 46,865 |
| Massachusetts | 18 | - | - | - |
| Michigan | 2,650 | 2,350 | 124 | 291,400 |
| Minnesota | 8,400 | 7,800 | 146 | 1,138,800 |
| Mississippi | 960 | 940 | 150 | 141,000 |
| Missouri | 3,450 | 3,250 | 142 | 461,500 |
| Montana | 84 | 38 | 145 | 5,510 |
| Nebraska | 9,400 | 9,200 | 160 | 1,472,000 |
| Nevada | 5 | - | - | - |
| New Hampshire | 14 | - | - | - |
| New Jersey | 95 | 82 | 125 | 10,250 |
| New Mexico | 135 | 55 | 175 | 9,625 |
| New York | 1,050 | 550 | 127 | 69,850 |
| North Carolina | 1,100 | 1,020 | 100 | 102,000 |
| North Dakota | 2,550 | 2,350 | 116 | 272,600 |
| Ohio | 3,850 | 3,610 | 150 | 541,500 |
| Oklahoma | 320 | 270 | 145 | 39,150 |
| Oregon | 60 | 35 | 195 | 6,825 |
| Pennsylvania | 1,410 | 980 | 128 | 125,440 |
| Rhode Island | 2 | - | - | - |
| South Carolina | 400 | 370 | 100 | 37,000 |
| South Dakota | 5,000 | 4,500 | 121 | 544,500 |
| Tennessee | 870 | 785 | 106 | 83,210 |
| Texas | 2,150 | 2,000 | 148 | 296,000 |
| Utah | 70 | 22 | 148 | 3,256 |
| Vermont | 92 | - | - | - |
| Virginia | 550 | 405 | 85 | 34,425 |
| Washington | 195 | 120 | 210 | 25,200 |
| West Virginia | 46 | 27 | 111 | 2,997 |
| Wisconsin | 4,050 | 3,280 | 135 | 442,800 |
| Wyoming | 95 | 60 | 129 | 7,740 |
| Total U.S. | 93,600 | 86,542 | 151.1 | 13,073,893 |

Source: U.S. Dept. of Agriculture, National Agricultural Statistics Service

Farming helps create perhaps as many as 24 million more jobs in other industries, everything from chemical factories to truck drivers to meat-packing plants to supermarkets.

Farming is now a fundamental strategic asset: After all, if we can't feed and fuel ourselves, we are at the mercy of others. Our dangerous addiction to imported fuel is the perfect example of putting our future and our economy in the hands of others.

Farmers grow corn in almost every state, from Maine to New York to New Mexico to California.

Growing Corn: Long Days, Lots of Work

"The work of full-time farmers, ranchers, and agricultural managers is often strenuous," says the Bureau of Labor Statistics. "Work hours are frequently long; and these workers rarely have days off during the planting, growing, and harvesting seasons.

"Nevertheless, for those who enter farming or ranching, the hard work is counterbalanced by their enjoyment of living in a rural area, working outdoors, being self-employed and making a living off the land."

So complicated is farming technology these days that, instead of the traditional path of learning the business from his or her father, increasingly farmers earn at least a two-year associate degree from a college or university.

It will continue to be tough for small farmers. The long-term trend of farm consolidation will continue, says the Bureau of Labor Statistics, for at least the next decade, which means a "moderate" decline in on-farm employment of 8 percent.

"The continuing ability of the agriculture sector to produce more with fewer workers will cause some farmers to go out of business as market pressures leave little room for the marginally successful farmer," says the bureau. "As land, machinery, seed, and chemicals become more expensive, only well-capitalized farmers and corporations will be able to buy many of the farms that become available.



Job Outlook for Farmers, Ranchers and Agricultural Managers

| Occupation | 2006 Employment | 2016 Projected Employment | Projected Change, 2006-16 | |
|--|-----------------|---------------------------|---------------------------|---------|
| | | | Number of Jobs | Percent |
| Agricultural managers | 1,317,000 | 1,230,000 | -87,000 | -7 |
| Farm, ranch, and other agricultural managers | 258,000 | 261,000 | 2,900 | 1 |
| Farmers and ranchers | 1,058,000 | 969,000 | -90,000 | -8 |

Source: Bureau of Labor Statistics

“These larger, more productive farms are better able to withstand the adverse effects of climate and price fluctuations on farm output and income.”

Corn will still provide jobs because so many farmers are retiring in the next decade. Three quarters of the 280,000 corn farmers are 45 or older.

More farmers are getting degrees because these days they must now know as much about international markets and biotechnology as they do about the engines of their combines and the land. Computer-literate, savvy about business and markets, technically proficient, farmers must deal with a business that has changed as profoundly as any aspect of American life during the past 100 years.

The trusty old tractor and combine of the past are not only bigger but laden with computers, satellite links and GPS technology.

And farmers must be effective marketers to get a reasonable price for their crop. The Chicago Board of Trade discloses commodity prices daily. Many farmers use financial tools such as forward contracting or hedging to mitigate risk. Commodity markets, in fact, with weather are the two biggest risks farmers face daily.





Chapter Five: The Politics of Corn

For decades, U.S. farm policy ensured abundant — and thus cheap — corn.

For three quarters of a century, the Farm Bill has been at the heart of that policy and at the heart of the corn business as well, as important as weather or crop prices or technology.

The Farm Bill is also a key piece of federal policy on health and nutrition, since more than \$200 billion of the bill's \$300 billion in federal expenditures over its five-year life are for food stamps and other food programs for the poor. That is why so many urban legislators, too, vote for the bill every five years. Of the \$300 billion program, less than a quarter goes to farm programs.

Farmers receive what are called direct payments to make up the difference between their cost to grow corn and what the market offers to pay them for it. These payments now total roughly \$5 billion a year to farmers of corn, wheat, soybeans, rice, cotton, sorghum, barley and other crops.

Of the **\$300 billion** program, **less than a quarter** goes to farm programs.

When the Farm Bill came up for its five-year renewal in 2007, critics and corn farmers thought the time ripe for change.

They pushed to reform the way the government implements the Farm Bill. Farmers argued government support should provide only a safety net and be supplied only when needed the most, and especially in disaster years. Corn farmers argued government support isn't necessary when yields are good and prices make it profitable to grow corn. After a major effort and much opposition, we now have the Average Crop Revenue Election program, or ACRE. ACRE is a revenue-based system that looks at overall farm stability instead of market price only.

Farmers can elect to enroll in ACRE, which pays them only if they are facing drops in revenue from bad weather or declining prices. Farmers who choose ACRE accept a reduction of 20 percent in direct payments in return for a revenue-based safety net. Corn growers believe that safety nets should be used only on behalf of farmers who are in trouble because of crop disasters, not for millionaires who aren't even growing food on their land.

“Changing how subsidy programs operate is critical to achieving reform that has a long-term impact,” says the Iowa State Center for Agricultural and Rural Development in supporting ACRE. Corn farmers agree.

So ACRE is a step in the right direction, Farmers want to continue moving in this more market-oriented direction.

What’s Next With Farm Policy?

Former Iowa governor and new agriculture secretary Tom Vilsack is not likely to make major changes right away.

By appointing him, President Obama reiterated the administration’s commitment to ethanol, despite the mud thrown at it throughout 2008 by opponents. The Renewable Fuels Standard (passed in 2005 and expanded in 2007) will assure more ethanol is used in gasoline, a measure supported by the Obama Administration.

Corn farmers believe this is positive for the economy, national security and consumers. According to a study commissioned by the Renewable Fuels Association, increased ethanol production will:

- add more than \$1.7 trillion to the economy between 2008 and 2022;
- generate an additional \$436 billion of household income for Americans during that time;
- support creation of as many as 1.1 million new jobs;
- generate \$209 billion in new federal tax receipts.

“Tom understands that the solution to our energy crisis will be found not in oil fields abroad,” Obama said in nominating Vilsack, “but in our farm fields here at home.”

The EPA continues to study ethanol’s environmental impact. The tariff on imported ethanol expires in 2010 and is likely to come up for discussion the year before.

Then there’s ethanol’s role in helping reverse the decline of the rural economy,

which was experiencing a long, slow drain that was leaving vast swatches of the American interior studded with withering small towns, poverty and the dying of a way of life.

Increased **ethanol** production **will add** more than **\$1.7 trillion** to the economy between 2008 and 2022.

Ethanol brings good jobs and prosperity to declining areas (Service and manufacturing now provide more jobs in rural areas than farming, according to government figures.) The Farm Bill has provisions for rejuvenating rural areas, too.



As for the Farm Bill, some experts say it's unlikely it will be revisited until 2012, at least the provisions on farm supports. But as we look ahead, it's important to get these issues right because ultimately the financial health of farming is tied to the strength of the economy, the health of the environment, trade relations and our place in the world as at once a global player and yet a country able to supply itself with all the food it needs.

One thing is clear: Being sufficient in growing our own food and our own fuel is a huge strategic asset; a necessity for us. In a dangerous and uncertain

world, we can no longer rely on hostile countries for our oil. We may overlook them in favor of soldiers and guns and ships, but our food and fuel systems are crucial to our national security and our economy in these uncertain times.

"We are in a period now of intense volatility," says Clayton Yeutter, agriculture secretary under President George H. W. Bush. "Farmers here and in other countries are really struggling to figure out how to handle this."

We've detailed in this Fact Book how important corn is. Our corn farmers are the world's most productive; our corn crop is used to make dozens and dozens of products; we grow all we need and enough for a reserve and for exports.

We should do nothing to imperil this.

Being sufficient in **growing our own food**
and **our own fuel**
is a **huge strategic asset.**

The Corn Farmers Coalition — an alliance of the National Corn Growers Association and 10 state corn associations — educates policy-makers in Washington about how innovative farmers are growing more corn every year with fewer resources while protecting the environment.



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COALITION

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