

A Series of Papers on  the 2007 U.S. Farm Bill

A FAIR FARM BILL *for* Renewable Energy



Institute for Agriculture and Trade Policy



The Institute for Agriculture and Trade Policy promotes resilient family farms, rural communities and ecosystems around the world through research and education, science and technology, and advocacy.

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About this publication
A Fair Farm Bill for Renewable Energy

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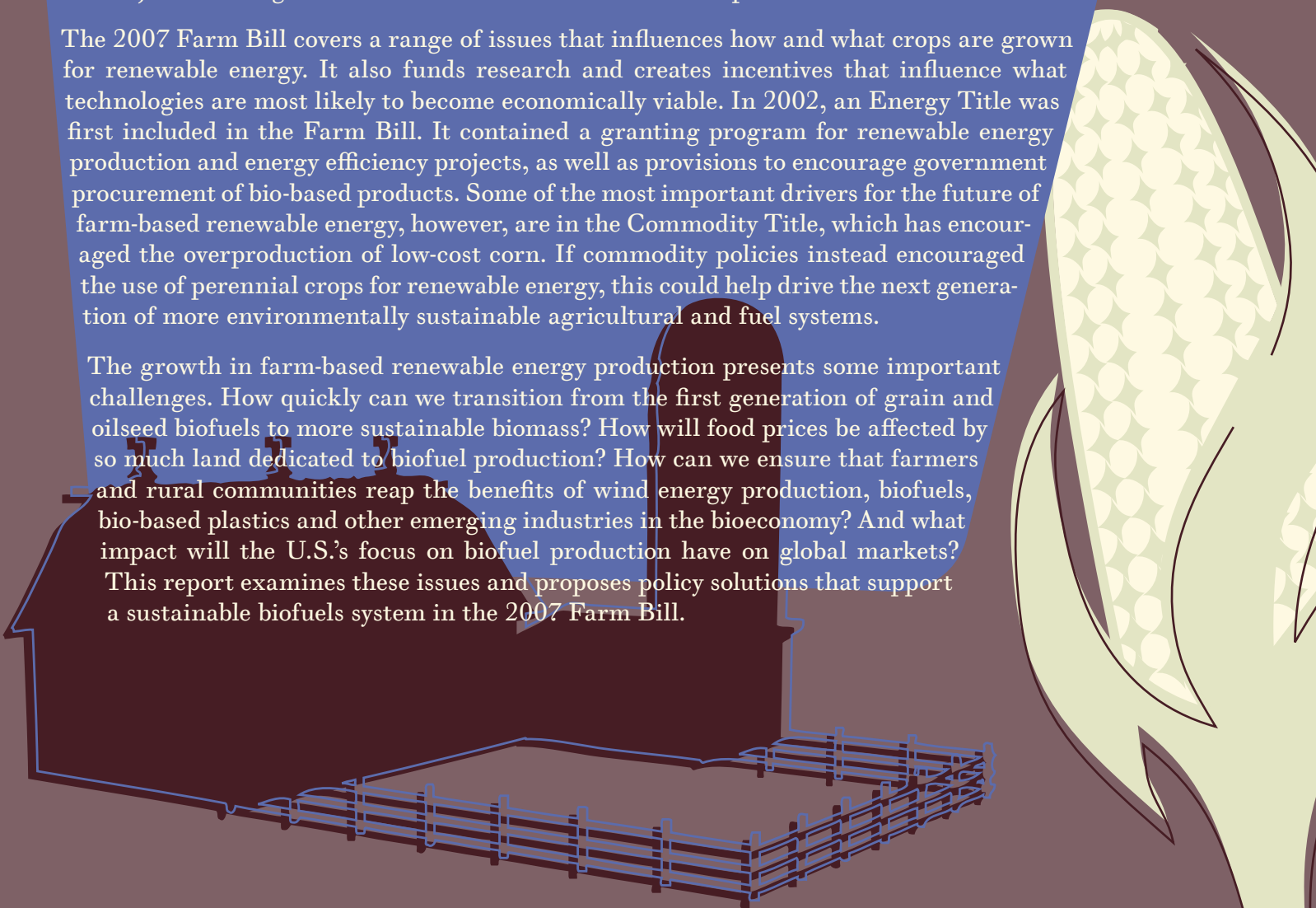
A NEW landscape

When the 2002 Farm Bill was written, farmers faced extremely low commodity prices for nearly all major commodities. The primary objective of Congress was to turn annual emergency payments into a more permanent safety net for farmers, and still be compliant with international trade rules. In 2007, the Farm Bill begins in an entirely different climate. Between 2001 and 2005, U.S. ethanol production doubled to more than 5 billion gallons of ethanol a year, and will likely double again in the next few years.¹ Farm commodity prices, particularly corn, are rising steadily. And agricultural groups are focused on meeting domestic demand for fuel, animal feed and food.

Biofuels have emerged as one of the most promising new economic opportunities for rural America in a generation. President Bush's goal of cutting U.S. gasoline use by 20 percent in the next decade through the use of alternative fuels combined with the Energy Policy Act of 2005—which set a 7.5 billion gallon renewable fuels standard to be attained by 2012—have helped to drive the biofuel economy. But so has an abundance of cheap corn and soybeans, high gas prices, government support for ethanol, environmental concerns with a competing fuel oxygenate (MTBE) and major technological advances that have lowered ethanol production costs.

The 2007 Farm Bill covers a range of issues that influences how and what crops are grown for renewable energy. It also funds research and creates incentives that influence what technologies are most likely to become economically viable. In 2002, an Energy Title was first included in the Farm Bill. It contained a granting program for renewable energy production and energy efficiency projects, as well as provisions to encourage government procurement of bio-based products. Some of the most important drivers for the future of farm-based renewable energy, however, are in the Commodity Title, which has encouraged the overproduction of low-cost corn. If commodity policies instead encouraged the use of perennial crops for renewable energy, this could help drive the next generation of more environmentally sustainable agricultural and fuel systems.

The growth in farm-based renewable energy production presents some important challenges. How quickly can we transition from the first generation of grain and oilseed biofuels to more sustainable biomass? How will food prices be affected by so much land dedicated to biofuel production? How can we ensure that farmers and rural communities reap the benefits of wind energy production, biofuels, bio-based plastics and other emerging industries in the bioeconomy? And what impact will the U.S.'s focus on biofuel production have on global markets? This report examines these issues and proposes policy solutions that support a sustainable biofuels system in the 2007 Farm Bill.



Shifting FROM CORN

Much of the Midwest agricultural landscape is dominated by two annual row crops: corn and soybeans. Currently, 14 percent of the U.S. corn crop goes to ethanol production and 8 percent of soybeans are used for biodiesel. Conventional agricultural production practices used for these crops has contributed to soil erosion, degraded water quality in rivers and streams and pesticide contamination of drinking-water supplies. An expanded farm-based renewable energy production only makes environmental sense if it contributes to a more diverse landscape that does a better job of protecting soil and water resources.

Because of the current surge in corn prices, many farmers are shifting land that would normally be planted with soybeans, wheat or cotton to corn. Higher corn prices worry the meat and poultry industry, which has developed its entire business plan on cheap, plentiful corn and soybeans for animal feed. Companies like Cargill and Unilever have raised concerns about rising corn prices while others such as Tyson Foods are supporting the development of cellulosic ethanol produced from other feedstocks.

The challenge of the 2007 Farm Bill will be how quickly we can shift from a bioeconomy dependent on corn and soybeans to more sustainable biomass crops.

BIOECONOMY GLOSSARY

Biofuels are gas or liquid fuels derived from biomass.

Biomass is a very broad term used to describe any plant or animal material, including crops, trees, other plants and algae, but also manure, sludge, municipal waste and anything else organic in nature.

Ethanol is a two-carbon alcohol produced from starch found in grains—like corn—and sugar cane and sugar beets.

Cellulose is the carbohydrate that makes up a large portion of plant material (along with hemicellulose and lignin).

Feedstocks are raw material supplied to a machine or processing plant from which other products can be made.

Biomass IS BETTER

A biomass-based system has the potential for much higher production levels and better environmental and economic benefits nationwide. As opposed to corn and soybeans—grown primarily in the Midwest—the United States has a nationwide biomass production capability. Grasses, trees, crop and forest residues provide many times more biomass than corn ever could, and biorefineries could be developed to produce fuels, electricity and materials that normally are developed from petroleum.² A considerable amount of research and development is still needed, however, for the biomass sector to become economically competitive with petroleum-based energy and products.

A shift to biomass could provide significant environmental benefits. Perennial crops such as prairie grasses and fast-growing trees generally have less soil erosion, use fewer fertilizers and pesticides, increase water infiltration and retention, provide higher levels of biodiversity and wildlife habitat, and enhance carbon sequestration.³ The ability to use diverse feedstocks—including materials currently considered waste—would reduce the pressure to convert cropland to corn while providing a market for materials of marginal value.

The Farm Bill could provide incentives to shift some crop acreage into diversified nonfood feedstocks such as perennial, native grasses.

Food **VERSUS** Fuel

The tension between beef, chicken and hog producers—who use about half the U.S. corn crop—and the ethanol industry’s growing appetite for corn is creating a divide within agribusiness. The livestock industry claims that higher feed prices will result in higher meat and dairy prices and may even limit Midwestern livestock production.

There are several reasons to believe that food-vs.-fuel concerns may be overstated. First, agribusiness has always responded quickly to high prices in the past either by expanding production domestically, increasing imports or substituting new crops. In fact, USDA economists project consumer prices for pork, beef and turkey will actually decline in 2007 despite rising corn prices.⁴ Second, one of ethanol’s coproducts is distillers dried grains with solubles (DDGS), a high-protein animal feed particularly important for cattle. DDGS has an average protein content of 27 to 30 percent—three times higher than corn. The USDA believes that DDGS will displace roughly half the soy and cornmeal used today.⁵

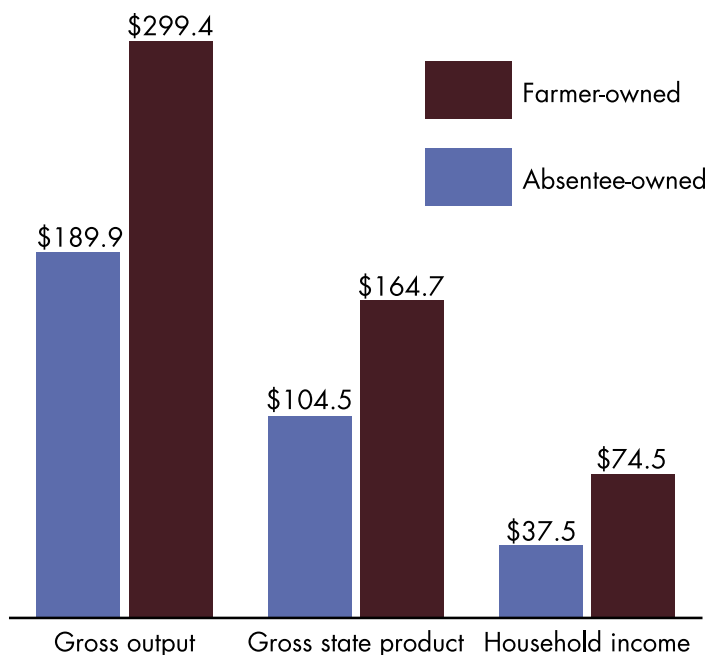
U.S. meat and poultry production has long benefited from extremely cheap corn. According to research from the Global Development and Environment Institute at Tufts University, from 1997 to 2005, feed prices were an estimated 21 percent below production costs for poultry and 26 percent below costs for the hog industry. Tufts’ researchers estimated the cumulative savings to the chicken industry from below-cost feed was \$11.25 billion during those years; industrial hog operations saved an estimated \$8.5 billion.⁶ Returning to a fair market price for corn would have the added benefit of making healthier and more environmentally friendly grass-fed beef more competitive.

LOCAL **ownership**

In the first wave of ethanol plants, farmers not only supplied corn but, in many cases, also owned the plant. That paradigm is now changing with multinational companies and Wall Street investors entering the ethanol marketplace. Refinery ownership by local farmers and community members is seen as the key aspect to sustainable rural development. Local ownership assures the facility is, to some extent, based on local resources and need and that much of the money generated remains in the local economy. Recent studies show the benefits of smaller, locally owned refineries for communities are much higher than from absentee owners—including a onetime boost of about \$142 million to the local economy, the creation of about 40 full-time jobs, and an increase in annual direct spending in the community of around \$56 million. And the spending of dividends by community investors also has a ripple effect, adding an average of 821 jobs and \$37 million in household income, than what a community would gain from an absentee-owned plant.⁷

The 2007 Farm Bill should set policies that promote farmer- and community-owned facilities. Policies in Minnesota offer a strong example for the federal government: Some created in the late 1980s gave farmers assistance in starting up refineries through a loan program and provided incentives to in-state ethanol production for the first 15 million gallons of ethanol produced each year. This approach helped grow the biofuels sector so today, more than three-quarters of Minnesota’s present ethanol-production facilities are majority farmer-owned.

ECONOMIC IMPACTS OF COMMUNITY-OWNED VS. ABSENTEE-OWNED FACILITIES IN MILLIONS OF DOLLARS



Source: John Urbanchuk. “Economic Impacts on the Farm Community of Cooperative Ownership of Ethanol Production” for the National Corn Growers Association. September 2006. <<http://www.ncga.com/ethanol/pdfs/2006/FarmerOwnedEthanolEconomicImpact.pdf>>

A *global* PERSPECTIVE

There is little question that the ethanol explosion will impact U.S. corn exports. USDA reported recently, “that much of the additional corn needed for ethanol production will be diverted from exports.”⁸ If only a quarter of ethanol plants currently proposed in the Midwest come on line, exports from the Midwest’s corn belt could be cut in half.⁹

Some have raised concerns that more corn for U.S. domestic use means there will be less corn available for the world’s poor. Exports consume roughly 16 percent of the U.S. corn crop, a percentage which declined over the last 25 years as international competitors capture many emerging markets. Data from the United Nations Food and Agriculture Organization (FAO) shows 55 percent of U.S. corn exports are directed to other wealthy countries; only 0.0064 percent goes to the 11 most undernourished countries. The reality is that U.S. corn exports are traded to countries that pay the most for them.

Exported U.S. corn has had a negative effect on farmers in poor countries. Since the 1996 Farm Bill, U.S.-based grain companies have exported corn at approximately 20 percent below their costs of production, a practice known as dumping. Farmers in poor countries are hurt by dumping because it pushes them out of local markets and severely limits their ability to compete in export markets. The dumping of U.S. corn into Mexico has been credited with pushing approximately 1 million Mexican farmers off the land. Remarkably, Mexican corn farmers are now expanding corn production due to higher global prices associated with U.S. ethanol demand.¹⁰

While rising global corn prices may benefit farmers in poor countries, there are concerns about how an expanded global bioeconomy could effect countries that are food insecure. In particular, if food-insecure countries produce biofuels for export, it could not only hurt their ability to feed themselves, it could also damage the environment and resource base.

Renewable *energy* IN THE FARM BILL

The 2002 Farm Bill included for the first time an Energy Title, designed to support renewable energy and greater energy efficiency on farms. Assessing the 2007 Farm Bill will be fairly simple in years to come. If, in a generation from now, the United States is still producing the majority of its renewable fuels from annual row crops, and if farm-based renewable energies continue to play an inconsequential role in our nation’s energy security, then the 2007 Farm Bill will have been a failure from an energy perspective. However, if we build a renewable-fuels system based on perennial crops and local ownership, then the 2007 Farm Bill will have been a success.

Here are concrete policy steps to take that will usher the bioeconomy toward a more sustainable future:

Expand the Conservation Security Program. The CSP already has in place mechanisms and incentives to reward farmers willing to shift program crop acreage into sustainable bioenergy feedstocks. Conservation goals are achieved through 5- to 10-year contracts that provide farmers with technical assistance and financial incentives that

encourage higher conservation performance. Incentives are offered for on-farm energy conservation, on-farm use of biofuels, as well as production of renewable electricity. New enhancements could help shift existing row-crop acreage to sustainable bioenergy feedstocks and encourage the cellulosic feedstock production in a targeted region to entice new bioenergy plants. Additional incentives could encourage farmers to grow sustainable oil crops for community-based biodiesel use. Historically, the major obstacle to implementing CSP provisions has been the unwillingness of both the Bush administration and Congress to fully fund the program, which has limited its implementation. CSP needs to be funded and eligibility expanded nationwide to all U.S. farmers.

Establish a farmer-owned strategic biofuels feedstock reserve. Such a reserve would bolster the storage capacity for bioenergy feedstocks that fit within the Conservation Security Program. The reserve would make sustainably grown biomass feedstock a more reliable energy source (e.g., providing a backup storage in times of drought or other shortages). Ensuring a dependable, long-term sup-

ply of these raw materials is critical to the uninterrupted operation of the renewable bioenergy industry.

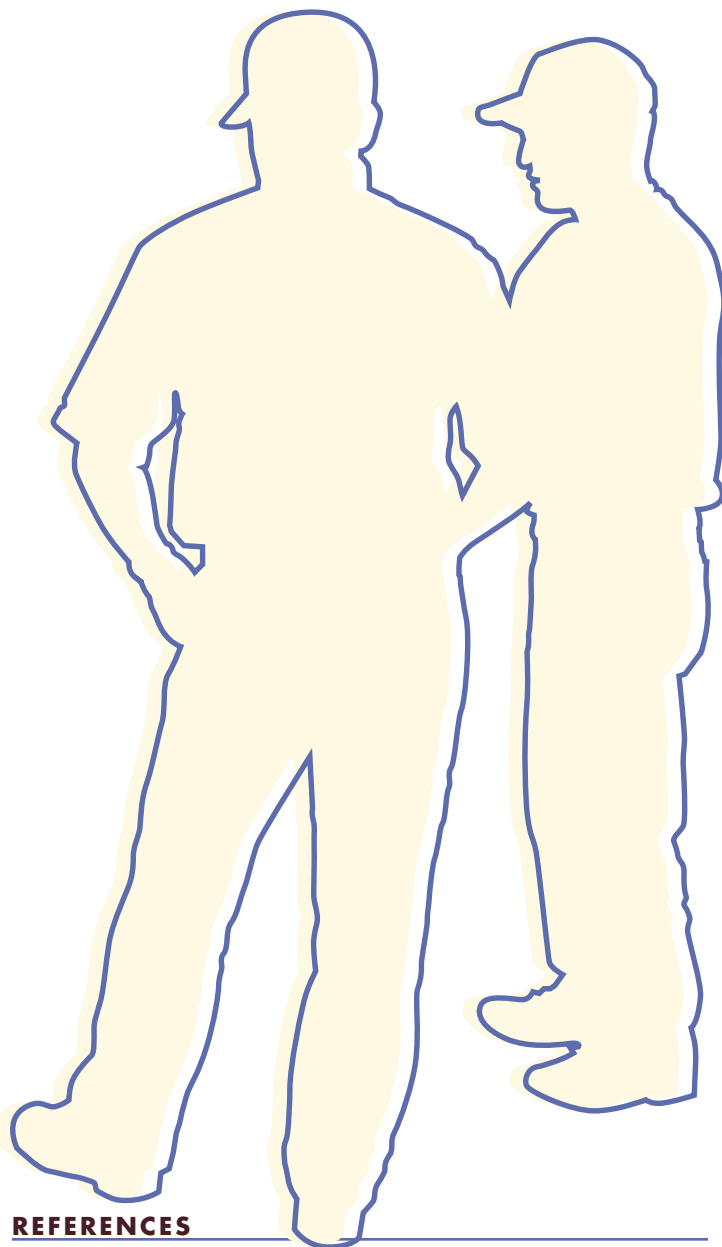
Support the integrity of the Conservation Reserve Program. With 26 million acres of land contracts set to expire in the next three years, CRP must not be weakened in the rush to energy independence. Existing CRP lands should be kept in the program and continue to meet their broad range of conservation objectives. To secure the continuing public environmental and wildlife benefits these crops can provide, Congress should offer incentives to farmers to keep acres that are not re-enrolled in native perennial plants. This could be achieved by encouraging landowners to enroll expiring CRP land into an expanded CSP or a new "Next Generation Bioenergy Program."

Create farmer incentives for the next generation of bioenergy crops. To accelerate the transition to emerging cellulosic and biodiesel production technologies, farmers need incentives to grow more sustainable biomass crops. Farmers should be offered long-term contracts for following sustainability guidelines in the production and harvest of perennial, native, cellulosic feedstocks on agricultural lands.

Build market demand for sustainable feedstocks. Though farm-based programs can mitigate farmers' risk, the best way to encourage widespread conversion of existing acres to sustainable biomass crops is with long-term, stable markets. Incentives for industrial facilities to use sustainable biomass as a heat and energy source can help assure that perennial crops can compete against lower cost and, often, lower public value feedstocks. Ranging from biomass handling infrastructure support to low-interest loans, grants and incentive payments, there are multiple ways to create market access and demand for sustainable biomass crops.

Encourage local ownership and markets. Bioenergy facilities bring new jobs and markets to rural areas, but the benefit is greatly enhanced when farmers and community members invest in facilities. Federal programs can promote local ownership by providing communities planning and financial assistance, and by the establishment of purchasing, grant, licensing and loan preferences for community and locally-produced bio-based energy and products.

Support state bioenergy policy innovation and coordination. States can help lead the way in effective policies and programs for sustainable bioenergy production. Legislation introduced in Minnesota in 2007 provides an array of mechanisms to promote a sustainable bioenergy sector. Other states are working on similar policies. Federal policy should support these types of state-based innovations and learn from their successes and failures.



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