



Crop Insurance: A Good Deal for Taxpayers?

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Last year farmers received \$746 million in net crop insurance payments. But the program cost taxpayers approximately \$2.5 billion, or \$3.31 for each dollar paid out. Since 2001, when the provisions of the Agricultural Risk Protection Act (ARPA) fully came into force, taxpayers have paid \$15.1 billion to deliver \$8.82 billion to farmers. This imbalance between taxpayer costs and producer benefits has led some to question whether money allocated to crop insurance might be more efficiently used elsewhere in USDA's budget. For example, producers would have received all \$15.1 billion if the funds had been sent out in the form of direct payments. Or, this \$15.1 billion could support the Conservation Reserve Program for nine years. Or, of course, our national debt would be \$15.1 billion smaller now without the program.

One difficulty in evaluating whether crop insurance funds are being used efficiently is the complex nature of the program. Simply put, relatively few people outside the industry really understand how the program works and what is being supported by taxpayer funds. In order to make a judgment about the program's relative merits, first we need to understand why it costs \$15.1 billion to deliver \$8.82 billion to farmers.



A Public-Private Partnership

The U.S. crop insurance program is funded by taxpayers, regulated by USDA's Risk Management Agency (RMA), but sold and serviced by private business. There are economic and historical reasons why the program is neither all public nor all private.

The private sector is good at developing insurance markets when the insured risks have the attribute that the premiums from the many will cover the losses of the few every year. Examples include fire losses, loss of life, and crop damage from hail. In any year, total insurance losses are fairly predictable, so premiums can be set to allow insurance companies to make a predictable rate of return.

The private sector is reluctant to offer insurance when insurance claims vary dramatically from year to year. Examples include floods, hurricanes, and crop losses due to droughts. When these events occur, annual premiums cannot cover losses, and bankruptcy for the insuring company is a real possibility. Most researchers have concluded that a purely private crop insurance market would not exist because the risks are too large. Thus, if we want to have a crop insurance program, then we

must have some degree of public sector involvement in providing backstop protection in large-loss years.

From Congress's perspective, the purpose of the crop insurance program is to reduce the need for annual declarations of agricultural disasters, with subsequent emergency spending bills. This objective will only be met if crop insurance is widely available and widely purchased. Beginning in 1980, Congress has passed a series of crop insurance reform packages designed to expand the program, primarily by giving large incentives to the private sector to make insurance widely available and to farmers to buy the product. With ARPA, crop insurance is available to nearly all crops, and the proportion of crop acreage that is insured is approximately 80 percent. But now that Congress has accomplished its objective, are the benefits from the program worth the costs? The last three columns of Table 1 (p. 3) show the three categories of taxpayer costs during the ARPA period. The first three columns show how the program has grown under ARPA.

Producer Premium Subsidies

Farmers must pay for crop insurance, but they pay only a portion of the amount needed to cover insured

ISSN 1080-2193
http://www.card.iastate.edu

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Iowa Ag Review is a quarterly newsletter published by the Center for Agricultural and Rural Development (CARD). This publication presents summarized results that emphasize the implications of ongoing agricultural policy analysis, analysis of the near-term agricultural situation, and discussion of agricultural policies currently under consideration.

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losses. Throughout the 1980s and 1990s, farmers were reluctant to buy enough crop insurance to satisfy Congress. So to get farmers to buy more insurance, ARPA dramatically decreased the portion that farmers must pay. Currently, farmers pay about 41 percent of the amount needed to cover insured losses. This large subsidy means that most farmers will get substantially more back from the program than they pay into it.

It is somewhat of a paradox why farmers require such large subsidies to buy a product that substantially reduces their financial risk. But farmers routinely reduce financial risk in a number of other ways. Growing more than a single crop, raising livestock, working off-farm, employing marketing tools, and adopting risk-reducing management practices—all work to reduce financial vulnerability. In addition, for the lowest-risk farmers, the price of crop insurance may not adequately reflect their risk. So one explanation for this paradox is that for many farmers, the amount of remaining financial risk they face may simply be too small to insure unless the price of insurance is low enough. The current 59 percent average subsidy seems to have reduced the price of insurance to the point where most farmers now consider it worthwhile to purchase. This premium subsidy is now so large that the average farmer in the program can expect a rate of return on the producer paid premium of 143 percent.

Administrative and Operating Subsidies

It costs money to deliver crop insurance. Company salaries must be paid. Agent commissions must be paid. Loss claims must be verified and paid. And regulatory requirements must be met. In 1980, Congress decided that delivery of the crop insurance program should be given to the private sector so that the program could be expanded as rapidly as possible. Companies had an incentive to expand sales be-

cause they were essentially paid a sales commission. For each dollar of premium they brought in, companies were given a percentage. Currently companies are paid A&O (administrative and operating) subsidies equal to about 21.5 percent of the premium. With \$4 billion in premiums, this amounts to approximately \$840 million in subsidies.

The A&O percent subsidy has fallen steadily over the last 10 years from 31 percent in 1997. But this does not mean that companies are getting by on less total reimbursement. In 1997, total premiums were \$1.7 billion. By 2005, total premiums were \$3.95 billion. So A&O subsidies have increased by 60 percent since 1997 even though insured acreage has increased by only 35 percent.

The largest expense covered by A&O is agent commissions. Commissions vary dramatically across agents depending on how attractive an agent's customers are to a company. Some agents are paid up to 20 percent (or more) for each dollar of premium they bring to a company. It seems odd that farmers still need to be convinced by commission-based agents that they need to buy crop insurance. The program is now so well known and the premium subsidies are so large that perhaps Congress can finally declare success at meeting its 1980 expansion objective and begin to change the program.

Net Underwriting Gains

Crop insurance companies do not live on A&O subsidies alone. In years in which premiums exceed insurance claims, companies get to keep a portion of the difference, which is known as an underwriting gain. For example, in 2004, premiums exceeded claims by \$979 million. Companies were allowed to keep \$848 million of this difference. In years in which premiums are less than insurance claims, companies may have to pay a portion of the difference, an underwriting loss. In 2002, for example, claims exceeded premiums by \$1.15 billion. Compa-

Table 1. U.S. crop insurance program coverage, premiums, and costs

Year	Insured Acreage (million acres)	Total Premiums	Total Indemnities	Premium Subsidies (million \$)	A&O Subsidies	Underwriting Gains
2001	211	2,962	2,960	1,772	626	342
2002	214	2,916	4,067	1,741	743	-52
2003	217	3,431	3,259	2,042	859	378
2004	221	4,186	3,207	2,477	869	848
2005	246	3,949	2,351	2,344	(not yet available)	

nies had to pay the government \$52 million of this amount.

The 2002 and 2004 examples nicely illustrate why, on average, crop insurance companies generate additional funding for their activities. In years in which underwriting gains are positive, companies get to keep a larger proportion of the gain than they have to pay the government in years in which there are underwriting losses. The mechanism by which net gains and losses are determined is the Standard Reinsurance Agreement (SRA).

Companies generate net gains from the SRA in two ways. The first is by determining which of their customers are most likely to generate claims and then giving the premium from these customers and responsibility for any subsequent losses directly to the government. The average customer retained by a company therefore has a better risk profile than the average customer in the overall pool. Thus, average claims from the retained pool will be lower than the overall average, and the company will tend to make money.

However, the overall risk of loss from retained customers is still too large for companies to be willing to take on all losses. Hence the SRA is designed to have the government take on a portion of company losses when claims exceed premiums in exchange for companies giving the government some of their gains when premiums exceed claims. In essence, in exchange for companies taking on some of the risk of the

Table 2. Potential gains and losses to crop insurance companies under the Standard Reinsurance Agreement

Insurance Claim Scenario	Loss Ratio on Commercial Fund	Ratio of Net Gain to Total Premium	Net Gain to Companies (million \$)
Very Low	0.53	0.238	953
Moderately Low	0.72	0.136	546
Moderately High	0.76	0.115	462
Very High	1.28	-0.055	-223
Average	0.82	0.108	435

crop insurance program, the government is allowing companies to generate some gains.

Table 2 summarizes estimates of the potential gains and losses to private crop insurance companies from operation of the current SRA. These estimates are based on loss experience from 1993 to 2005. The table presents four equally likely scenarios regarding crop insurance claims. As shown, we estimate that with \$4 billion in premiums, companies should expect to make \$435 million per year in net underwriting gains.

The first justification for these gains is to compensate companies for the risk that they retain. Note that in the high-loss scenario, we estimate that private companies would lose an average of \$223 million. Companies routinely argue that they need compensation for taking this risk away from the government. The price to taxpayers for companies taking this loss 25 percent of the time is the average gain that the companies receive 75 percent of the time, which amounts

to \$654 million. Clearly, the price government pays to induce companies to share risk is quite high.

The second justification often given for these gains is to compensate companies for the USDA requirement that all eligible farmers must be offered crop insurance. This means that companies cannot easily choose to whom they can sell insurance. But, the SRA provision that allows companies to transfer premiums and losses from their high-risk customers directly to the government seems like adequate compensation for this requirement.

Policy Choices

Since 1980 Congress has made expansion of crop insurance a consistent priority. To a large degree, ARPA has finally allowed Congress to achieve this objective. The cost is high, however. Program costs could be reduced if the mechanisms that Congress and USDA have implemented to succeed in this

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Global Prospects for Dairy in Argentina and Chile and Lessons for U.S. Dairy Industries

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In contrast to the Uruguay Round Agreement on Agriculture of the World Trade Organization (WTO), a successful Doha Round of WTO negotiations is likely to bring major changes in international dairy markets. Some countries protect their domestic producers by using restrictive tariff rate quotas (TRQ) and high over-quota import duties. And large export subsidies allow the European Union and other countries to continue to export dairy products despite high internal price supports. The significant tariff cuts and elimination of export subsidies currently proposed in the Doha negotiations would create notable shortages in international dairy markets in the near term. Rising world prices will undoubtedly generate a supply response in countries with historically strong dairy industries, such as New Zealand and Australia, but it is less clear which other countries will step up to fill the void created by the removal of subsidized products and meet market opportunities created by lower tariffs. Argentina and Chile are two potential beneficiaries of a new WTO agreement. We review key findings of a recent CARD study on these two countries' dairy sectors and draw lessons for U.S. dairy.

Argentine Dairy: Strong but with Continuing Challenges

Argentina has a century-old tradition of dairy production. In 1999, Argentina was 13th in global milk production, right behind New Zealand. In that same year, Argentina was a major



exporter of whole milk powder and a growing exporter of cheese. The economic crisis in 2001 prompted a severe contraction of dairy production. The sector has emerged from the crisis as a viable industry with tremendous potential.

Argentina has several critical assets that contribute to its competitive advantage in milk production. First, feedstuffs are abundant and of high quality. Argentina's primary milk producing regions co-exist geographically with its vast cropping regions, thereby assuring low feed costs. These regions have adequate land to facilitate both crop production and improved pasture, without intense competition. Second, Argentine dairy farmers have access to and use high-quality genetic stock. Third, Argentine dairy farms are generally well managed by experienced producers who can produce excellent quality milk. They have the infrastructure on the farms (automated milking and on-farm cold storage) to preserve the quality of the milk and to meet international standards for export.

Argentina has a competitive processing sector dominated by a number of large firms with a clear export orientation. Many of the top firms have long been involved with export markets and have built brand recognition in foreign markets. Moreover, the connections between domestic firms and international partners, such as Nestlé, Fonterra, and Saputo, give Argentine processors access to expanded marketing expertise abroad. These processors have proven they have the ability to meet international consumers' demand for quality and product safety.

The road infrastructure in Argentina is excellent, even in remote areas. This is in sharp contrast to Brazil and, to a lesser extent, Chile. The transportation and communication infrastructures seem more than adequate to allow quick price discovery and easy communication between the processors and farmers for sample test results and other marketing matters. Pricing incentives are already in place to pay farmers for low bacteria counts, high fat, and high milk-solid content.

Despite these advantages, Argentina's dairy sector faces significant challenges in expanding its production and exports. Since the financial crisis, a great source of uncertainty for investors in Argentina has been the instability of the Argentine currency and the threats of price control. The peso underwent a massive devaluation in 2002. The peso is now expected to appreciate in real terms against the U.S. dollar because of relatively high inflation in Argentina. Competitiveness based on the massive devaluation will be progressively eaten away by inflation. Argentina's domestic and trade policies add to the uncertainty for dairy producers. Argentina

imposes a 15 percent export tax on most dairy products, handicapping the industry. Value-added-tax refunds on exports were eliminated as well after 2001. The government has a history of adjusting the export tax rate as international prices change, and this discretionary approach to taxation adds to the uncertainty of future profitability for dairy producers and processors.

The export tax raises government revenues and lowers the cost of food for urban constituencies. Exports are a convenient source of fiscal resources. In addition, the government has threatened to impose a price freeze on dairy products, effectively resulting in administered price controls. These tactics have been employed in other agricultural sectors, most notably in beef. Price controls on consumer products have ripple effects; processors are then forced to lower raw milk prices to offset their lost sales revenue. The negative impact of these disastrous policies is seen in Argentina's country risk rating, which is among the worst in Latin America. Market access issues, mostly tariffs and TRQs, are the primary barriers to Argentine dairy exports. Argentina exports milk powder to OPEC countries (Algeria, Iran, Iraq, and Nigeria) that tend to have relatively low duties on powder. For example, Algeria applied a 5 percent duty on milk powder products. Subsidized products, primarily from the European Union, have some negative impacts on Argentina's potential foreign sales because Argentine exports compete with EU exports.

Chilean Dairy: Poised for Growth

Over the last two decades, the government of Chile has been committed to an open economy, which has led to extremely low tariffs by international standards, increasing competitiveness in export-oriented and import-competing sectors and to significant integration into

The significant tariff cuts and elimination of export subsidies currently proposed in the Doha negotiations would create notable shortages in international dairy markets in the near term.

world markets. As a result, Chilean agriculture has shown remarkable growth, both in terms of total value and productivity. The growth in agricultural exports is double that of the country's GDP growth, approximately 10 to 12 percent annually. The central valleys of Chile, with their temperate conditions and dry summers, produce most of the high-valued agricultural products. In the southern Los Lagos (10th) region, where roughly 70 percent of Chile's milk is produced, the climate is wetter, supporting lush grasslands and pasture. However, the bulk of Chile's population and demand for dairy products is further north in the Santiago area. Consequently, much of the milk produced in the south is processed for transport north as milk powder or shipped to export destinations. Only roughly half of the pasture resources in the 10th region is currently used, so there is great potential for substantial growth in dairy production.

Historically, Chile has been a small net importer of dairy products. In 2004, Chile became a net exporter of dairy products. While making this transition from importer to exporter, Chile's dairy production lost natural protection from tariffs and from the costs of international transportation. A reduction

in milk and dairy prices occurred in Los Lagos early in the decade, and milk production costs are now at levels that are competitive on world markets. Chile's pursuit of free trade agreements has opened doors for its dairy industry in foreign markets. The country has become the largest exporter of hard cheeses to Mexico, shipping roughly 18,000 metric tons of cheese annually under its preferential agreement. The agreement with China in 2005 is expected to lead to an increase in China's imports of Chilean whey powder in the near term and in cheese imports after five years.

Chile's 10th region shares many characteristics with the dairy areas in New Zealand. However, Chile's dairy sector has been oriented toward non-seasonal production for decades to provide a steady supply of milk and dairy products to Santiago and other population centers. If Chile is to expand its influence on international dairy markets, the dairy industry will need to embrace a more export-oriented approach to production and marketing. This will require investment so that dairy farms can upgrade to meet international quality standards. Chile currently lacks the financial and support services necessary to modernize its dairy operations, particularly using seasonal production, which is popular in New Zealand. Farmers find it difficult to secure financing for investments and for working capital. Likewise, the local insemination, veterinary, and contract labor systems needed for efficient management of a seasonal dairy operation are not in place. Milk-processing capacity is near full utilization, and additional capacity currently under construction is partially offset by the closure of a number of small cheese plants. In contrast to Argentina, Chile is a safe and profitable investment location and receives the best risk

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Agricultural Situation Spotlight

Acres Shifts Follow Price Signals

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USDA recently released its first planting estimates for the 2006 crops. Comparing these estimates to the planting intentions gathered in March of this year, corn acreage increased while soybean acreage declined. For corn, Iowa plantings rose by 200,000 acres and national acreage increased by 1.35 million acres. Soybean plantings fell by 300,000 acres in Iowa and by 1.97 million acres nationally.

The difference between planting intentions and planted acreage was created by a combination of weather events and crop price movements. The March planting intentions showed that agricultural producers were concerned with the projections of higher input costs for fuels and fertilizers. That concern was backed up by their intention to plant more soybeans and less corn, a movement from a higher-input-intensive crop to a lower-cost crop. The June planting report indicates farmers backtracked somewhat on this move. Weather conditions through April and May allowed planting to proceed at a brisk pace. This gave producers opportunities to put more corn in the ground than they expected. Also, as shown in Figure 1, crop price movements since the end of March have favored corn over soybeans. For the harvest futures contracts for 2006, corn prices have increased by 5 percent while soybean prices have increased by 2 percent. These relatively higher corn prices throughout the planting season also provided incentives to producers to shift acreage back to corn.

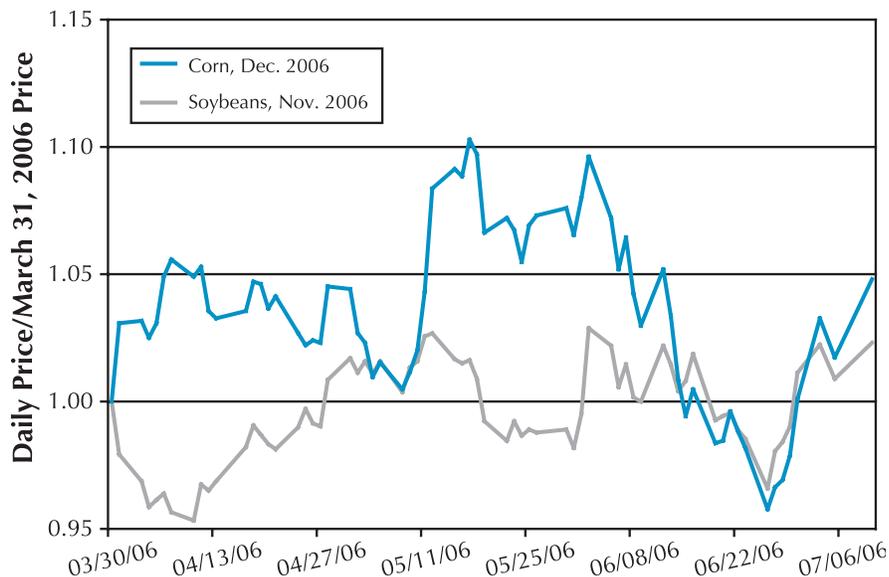


Figure 1. 2006 crop price movements since March 30, 2006

Projections for 2006 and 2007

Table 1 contains two sets of net return projections for corn and soybeans. The only differences between the two projections are projected harvest time prices. The trend yields are estimated from national yield data for 1980-2005. Harvest price projections are taken from the December 2006 corn and the November 2006 soybean futures contracts. Variable costs of production estimates are obtained from USDA's Economic Research Service. Net return per acre is computed as the trend yield times the harvest price less the variable costs of production. As the table shows, based on March 30 prices, corn held a slight advantage over soybeans in net returns. Price movements since then have added to corn's advantage, so that now corn net returns are projected to be \$30 per acre over soybean net returns. Producers saw strong eco-

nomical incentives to back away from their March planting intentions and return acreage back to corn.

Looking forward to the 2007 crop year, the current price signals are pointing even more strongly to corn. Figure 2 shows the relative changes in corn and soybean harvest futures prices for the 2007 crop year. Since March, the December 2007 corn futures price has risen 31¢ a bushel, an 11 percent increase. The November 2007 soybean futures price has risen 35¢ a bushel, a 5.5 percent increase. These moves put December 2007 corn at over \$3.00 a bushel and November 2007 soybeans at \$6.67 a bushel. To put these prices in perspective, let's look at the 1990-2005 average futures prices for the December corn and November soybean contracts from mid-July, one and a half years before harvest. Corn prices averaged \$2.52/bushel while soybeans

Table 1. 2006 projections for yields, prices, and costs of production

	Corn	Soybeans
	as of 3/30/06	
Trend yield (bu/acre)	147.80	41.70
Harvest price (\$/bushel)	2.60	6.16
Variable costs of production (\$/acre)	207.20	96.63
Net return (\$/acre)	177.08	160.03
	as of 7/10/06	
Trend yield (bu/acre)	147.80	41.70
Harvest price (\$/bushel)	2.73	6.30
Variable costs of production (\$/acre)	207.20	96.63
Net return (\$/acre)	195.56	165.98

averaged \$5.81/bushel. So both the corn and soybean prices going into 2007 are well above average levels. In fact, over those 16 years, none of the corn prices exceeded \$3.00 a bushel, and only in one year did the soybean price register above \$6.67 a bushel (\$7.02 in July 1996 for the November 1997 soybean contract). But the corn price is 22 percent above average while the soybean price is 15 percent above average. Both prices indicate demand for more acreage of both crops, but the corn signal is stronger.

Table 2 shows projections for corn and soybean net returns based on trend yields, current futures prices for 2007, and increased production costs. For the variable costs of production, the 2007 value is the 2006 value plus an upward adjustment reflecting the same percentage growth in costs as was experienced between 2005 and 2006. Corn's projected net return gap over soybeans increases to \$60 per acre. These projections indicate that we should expect to see increased corn acreage in 2007.

Drivers of Corn Demand

The strength of the corn and soybean prices is somewhat surprising given the last two production years. For both corn and soybeans, the 2004 crop year is the all-time record for production and the 2005 crop year is the second highest. So recent production has not been lacking. Corn stocks are up slightly from last year and soybean stocks are at record levels, up 42 percent from last year. So crop stocks are not low. Expected strong demand for the crops seems to be the driving factor behind the strength in corn and soybean prices.

Part of that demand is coming from the livestock sector. In the past two years, cattle and hog producers have made a lot of money, an economic signal to expand their herds.

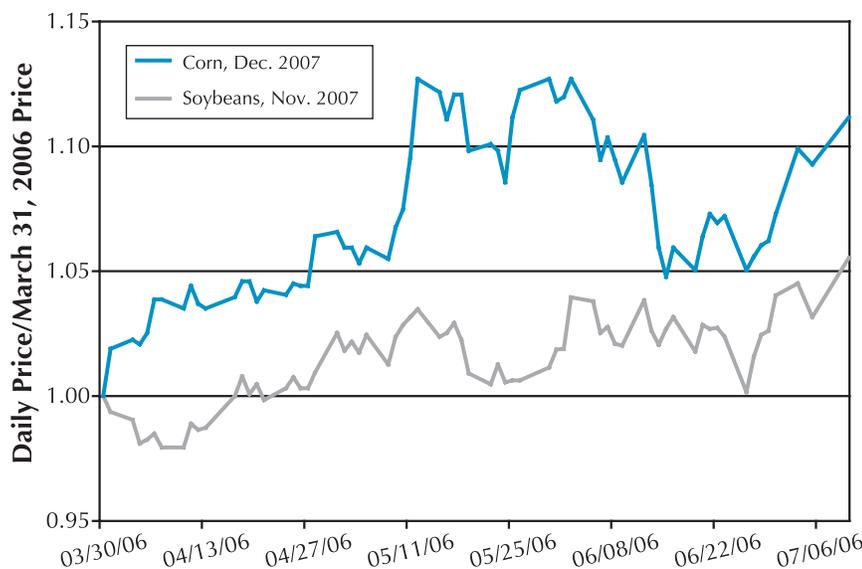


Figure 2. 2007 crop price movements since March 30, 2006

Table 2. 2007 projections for yields, prices, and costs of production

	Corn	Soybeans
Trend yield (bu/acre)	149.70	42.20
Harvest price (\$/bushel)	3.09	6.67
Variable costs of production (\$/acre)	223.70	104.25
Net return (\$/acre)	238.12	177.22

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Can South America Pick Up the Soybean Slack?

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The astounding ramp-up in U.S. ethanol production means that acreage planted to corn in the United States will significantly increase over the next five years. The number one source of additional corn acres will be converted soybean acres. Other sources will be converted pasture, land taken out of the Conservation Reserve Program, and land taken out of other crops, primarily wheat. Chad Hart shows elsewhere in this issue that the market is already signaling farmers to convert soybean acres to corn acres. Decreased U.S. soybean acres means increased demand for substitutes for U.S. soybeans, which include soybeans from other countries and other oilseeds from the United States and elsewhere.

By far the largest supplier of substitutes for U.S. soybeans is South American soybean production. But South America production is seemingly less predictable now than it used to be. Figure 1 shows that the average yield in Argentina and Brazil in the last three years has been well below peak levels in 2000 and 2002. Drought, Asian soybean rust, and a slowdown in conversion of virgin lands have all worked to slow down yield growth. What is perhaps more surprising is that the number of hectares harvested in these two countries actually fell this year after showing a smaller-than-normal increase last year. Again, the impact of drought, as well as increased production costs and relatively weak prices, is showing up in decreased harvested land.

The common assumption is that as more U.S. land is devoted to corn to produce ethanol, South America will continue to ramp up production to meet increased world demand for oilseeds. As shown in Figure 2, together, Brazil and Argentina have already surpassed the United States in soybean production. South America will need to continue to increase production significantly to offset declines in the United States as well as to meet projected growth in world demand for oilseeds.

World soybean prices are likely to increase as U.S. acreage declines. This increase in price will induce more production in South America. The responsiveness of South American soybean production to this price increase will determine how quickly the United States will shift to corn. Livestock feeders and consumers of corn and oilseeds worldwide have a large stake in seeing South America get back to its historical path of production growth. ♦

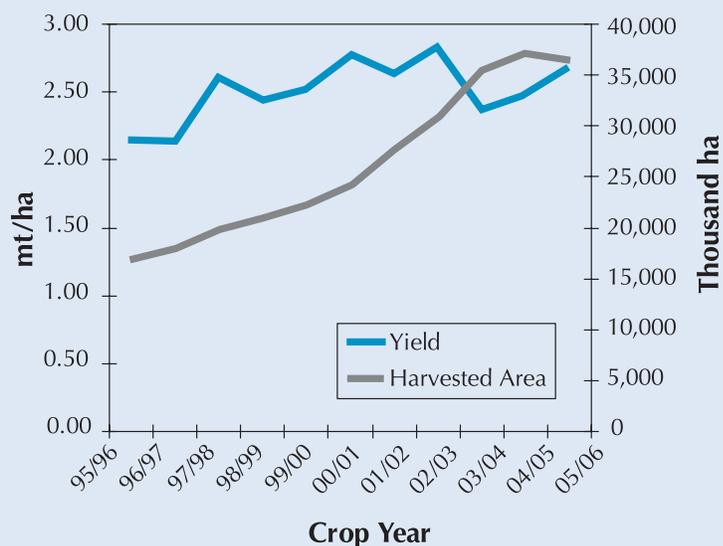


Figure 1. Soybean yields and harvested area in South America

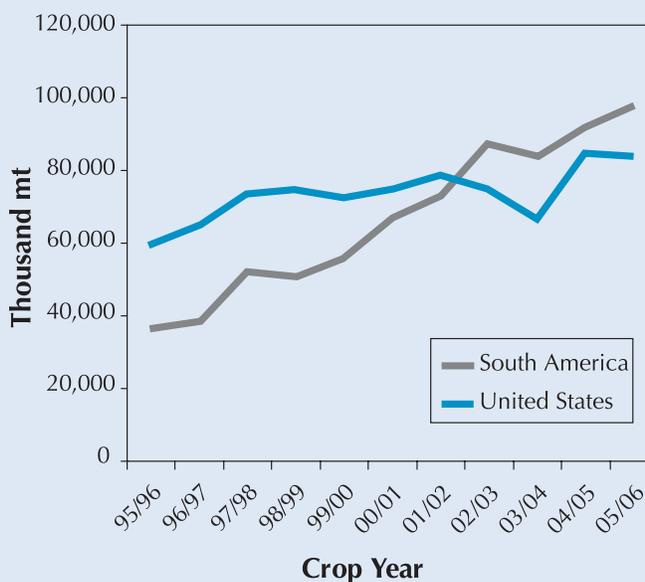


Figure 2. Soybean production in South America and the United States

Biorenewables Policy at CARD

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Over the last year, the most talked about agricultural topic has not been the state of Doha negotiations, what the next farm bill would include, or when Japan would completely open its market to U.S. beef exports. Rather, the focus has been on ethanol. A combination of Congress passing the Renewable Fuel Standard Program, high oil and natural gas prices, two consecutive years of low corn prices, a continuation of the tax credit for ethanol, and a phase-out of MTBE have created a frenzy of investment in ethanol plants and huge windfall profits for owners of existing plants. Investors are in such frenzy because they know that if they do not act quickly enough, all the corn surplus areas will be spoken for by someone else's ethanol plant.

The rapid expansion of bio-fuels production will change U.S. agriculture over the next 10 years. The impacts will be felt across both crop and livestock sectors, as the market signals farmers that more corn is needed. We have (perhaps inadvertently) put in motion this change without much understanding of what it will mean. CARD researchers are increasingly being asked to supply answers to fundamental questions about the impacts of the biofuels boom on U.S. agriculture.

What will it mean to U.S. agriculture if Iowa no longer exports corn? Where will cattle feeders in Oklahoma and Texas source their feed? Who will meet the world demand for corn imports? Can dairy, beef cattle, poultry, and swine rations be changed sufficiently to use up all the by-products from ethanol production? Will the huge growth in by-products change where cattle



Chad Hart will lead CARD's Biorenewables Policy Division

are fed in the United States? What will happen to our ability to feed our livestock when we lose half a corn crop because of drought? What will be the impact on basis risk from the ethanol boom? What environmental impacts will follow from increased corn acreage? Will expansion of bio-fuels production change the political dynamic that has left the United States on the sideline of carbon markets? Will we soon be importing substantially more ethanol from Brazil? What impact will higher corn prices have on the 2007 farm bill? And, more fundamentally, will the United States really be better off if we devote an increasing portion of our land base to producing crops that can be converted to liquid fuels?

CARD researchers have devoted considerable effort to understanding the impacts of biofuels. Simla Tokgoz and Amani Elobeid created the first international ethanol trade model to help estimate the impact on U.S. markets of overseas developments and to provide outlook information. The Resource and Environmental Policy Division has developed models to estimate the

benefits to U.S. agriculture from participation in carbon markets and the impact of changing cropping patterns on water quality. And many of us have written about the potential for synergistically combining crop production, livestock operations, and ethanol plants.

A new research division in CARD called Biorenewables Policy will enable us to answer the growing list of questions more systematically and to better position future CARD research efforts. The new research division will be led by Dr. Chad Hart. Chad has extensive knowledge of U.S. agriculture and farm policy so he is an ideal person to provide leadership in this area.

Chad will soon provide CARD's Web site with a host of biofuels-related information, including updated maps that show all U.S. ethanol and biodiesel plants, including the feedstocks the plants use, the current production capacity of the plants, and any planned expansions in capacity. He will also provide updated information about biofuels operating margins relative to historical trends. Enhanced basis analysis for corn and soybeans is also on the horizon. We will soon roll out basis maps for the entire Corn Belt.

Chad will have the overall responsibility of making sure that CARD's quantitative models are capable of providing insight into the new questions that have arisen as U.S. agriculture adjusts to its new future as a supplier of both food and energy. ♦

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expansion are not the most cost-efficient means of maintaining the status quo.

All evidence suggests that high premium subsidies are needed to induce farmers to join the program. The overall cost of these subsidies could be reduced if the structure of premium subsidies was changed to decrease the incentive for farmers to buy the most expensive forms of crop insurance. We previously estimated that \$300 million could be saved by such a move.

Significant savings could also be obtained by changing the way that A&O subsidies are determined. Most

of these funds are captured by crop insurance agents. But given the growing familiarity of farmers with the program and the currently large market penetration of insurance, do we need to continue to pay large commissions simply to maintain farmers in the program? One alternative is to pay a commission directly to those farmers who sign up for crop insurance through the Internet or directly with RMA. Recent political battles between agents and innovative companies over premium reduction plans that allow farmers to capture a portion of agent commissions indicates how difficult it would be to wean the industry away from the status quo of high commissions.

Considerable savings could also be obtained by making underwriting gains and losses the sole responsibility of the federal government. As illustrated here, the compensation required to induce companies to take on a small amount of risk (relative to the gains that they obtain) is large. We estimate that taxpayers would benefit by an average of \$435 million per year if USDA directly underwrote all risks from the crop insurance program. A potential downside from having the government underwrite all risk is that companies would lose the incentive they now have in their retained business to prevent fraud. ♦

Dairy in Argentina and Chile
Continued from page 5

ratings in Latin America. The presence of Nestlé and Fonterra in Chile may provide some of the financial resources needed to promote a general increase in production scale and accelerate the rate of technology adoption.

Our research suggests that the reduction of tariffs and elimination of subsidized dairy exports in a new WTO agreement will increase milk production in Argentina and Chile by 7 and 4 percent, respectively, over expected production under current policies. Argentine milk powder exports will increase by more than 20 percent, and cheese exports will rise more than 50 percent. Similar impacts are projected

for Chilean whole milk powder and cheese exports. However, the expansion of Argentine dairy trade will be significantly lower if the government does not eliminate its taxes on dairy exports.

**International Prospects
for U.S. Dairy Industries**

These two case studies shed light on U.S. dairy prospects in global markets. The U.S. dairy industry combines most of the sources of competitiveness characterizing its two South American competitors: availability of inexpensive feed and land in many regions suitable for dairy production, high human capital, access to modern technology, an efficient processing sector, excellent transportation and communication infrastructures, low

capital cost and credit risk, and a tradition in dairy production. So it is puzzling that the United States does not export more dairy products. The current U.S. dairy program, with its price distortions and border impediments, obscures the international competitiveness of U.S. dairy and provides producers with incentives to cater to domestic rather than to foreign markets. Reducing these domestic incentives would force the U.S. dairy industry to turn outward, where it is well equipped to be internationally competitive in world markets, especially if all countries reform their own distorting policies. ♦

Ag Spotlight—Acreage Shifts
Continued from page 7

Recent cattle inventory figures show that we may have entered an upturn in the U.S. cattle cycle, as cattle inventories are running higher than in the previous two years. Quarterly inventories of hogs are holding above 60 million head, and breeding hog inventories are up from last year. The increase in livestock inventories translates into increased demand for feedstocks—corn and soybean meal.

Another segment of demand is the ethanol boom. Ethanol production has more than doubled since 2001. In 2005, over 3.9 billion gallons of ethanol was produced in the United States. The vast majority of this ethanol was derived from corn.

In 2001, 681 million bushels of corn were dedicated to ethanol production. By 2005, that amount had grown to 1.43 billion bushels. The ethanol industry is poised to become the second-largest market segment for corn, trailing only livestock feed and surpassing exports.

The Energy Policy Act of 2005 established a renewable fuels standard that grows from 4 billion gallons in 2006 to 7.5 billion gallons in 2012. Ethanol is positioned as the fuel to meet this standard. Current production already exceeds the 2006 target. There are over 100 ethanol plants currently in operation. Several of these plants are expanding and over 30 more plants are in the planning and/or construc-

tion stages. Based on these plants alone, the ethanol industry could grow to 7 billion gallons within the next year and a half.

Increased feed demand and increased ethanol demand translate into higher expected futures prices for both corn and soybeans. The market wants more of both commodities, but there is a limited supply of acreage. Current market signals indicate that the market wants corn acres more than soybean acres. If this trend continues, expect Iowa corn acreage to grow, Iowa soybean acreage to decline, and the proportion of Iowa acreage enrolled in the Conservation Reserve Program to shrink. ♦

Recent CARD Publications

Working Papers

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MATRIC Working Paper

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Iowa Ag Review
Center for Agricultural and Rural Development
Iowa State University
578 Heady Hall
Ames, IA 50011-1070

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