

U.S. Agriculture Shrugs Off The Drought

By Mark Drabenstott and Alan Barkema

U.S. agriculture began 1988 in the midst of a strong financial recovery. U.S. farm exports were on the move again. Farm incomes were at a record high in 1987 and, after adjusting for inflation, were the highest since the mid-1970s. Farmland values also were on the rise across much of the nation. And, agriculture was near the end of an historic financial restructuring that had taken nearly five years. In short, the industry was in the best financial shape of the 1980s.

Looking back at 1988, that financial strength was needed as agriculture encountered the worst drought in the last 50 years. The drought hit early and was broad in scope. As spring turned into summer and the drought tightened its grip on crops from the northern Plains to the mid-South, many feared the farm recovery would be derailed. But bolstered by strong crop prices and some continued federal assistance, U.S. agriculture effectively shrugged off the drought.

Entering 1989, U.S. agriculture remains in recovery. Thanks in large measure to the drought, farmers can expect strong crop and livestock prices in the year ahead. This article reviews the drought and other farm developments in 1988 and considers the farm outlook for 1989. The outlook is examined for farm finances, crop and livestock market conditions, agricultural exports, and farm policy.

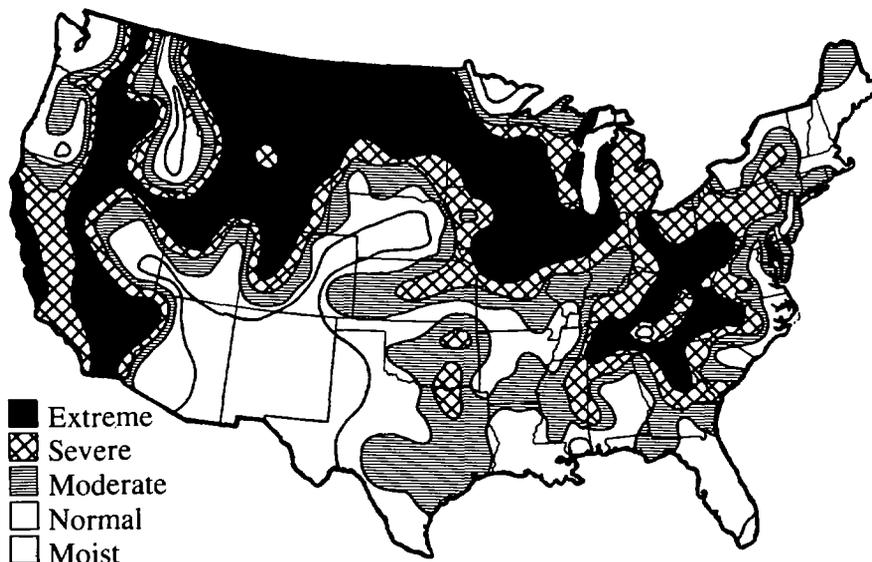
The year in review

The big story for agriculture in 1988 was the great drought. Winter and early spring precipitation had been below normal in some parts of the nation, but few in agriculture expected the severe drought that began in April and May. By early June, 20 percent of the nation was classified as having severe or extreme drought.¹ By late July,

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¹ Severe and extreme are the two worst categories of drought as measured by the Palmer long-term drought index. As developed by the U.S. Department of Agriculture, the index tracks long-term patterns in rainfall. Other categories are moderate drought, adequate rainfall, and moist.

FIGURE 1
Drought severity
 August 20, 1988



Source: National Oceanic and Atmospheric Administration/U.S. Department of Agriculture Joint Agricultural Weather Facility

the drought had affected more than 40 percent of the nation.

Distinguishing the drought of 1988 were its early development and its extent to regions normally resistant to dry weather. The map in Figure 1 shows the regions in severe and extreme drought as of August 20, shortly after the drought reached its greatest extent. Two of the worst-hit areas were the northern Plains and Corn Belt—regions that normally receive generous rainfall. The United States had experienced mild droughts in 1980 and 1983, but both were late season occurrences over limited areas. Quite simply, the 1988 drought was the worst since the mid-1930s.

The drought did ease slightly in late July and early August as scattered rains fell across portions of the Corn Belt. For some areas, the rains helped improve soybean yields. But the rains developed too late to help many corn fields, since

the corn crop had already passed its critical tassel stage under hot, dry conditions.

Weather remained generally dry through the harvest season, allowing farmers to harvest their crops at a rapid pace. But the continued dry weather pattern also raised concerns for the winter wheat crop being seeded. Many began to worry that dangerously low subsoil moisture might not be renewed before the 1989 crop is planted.

Crops

The drought hurt the production of three major crops in 1988. Compared with 1987 production, the corn crop was cut 34 percent, the soybean crop 21 percent, and the spring wheat crop more than 50 percent. Because spring wheat is only about a fourth of total U.S. wheat output, total wheat production fell much less. The drought's

TABLE 1
U.S. average crops yields
(bushels per acre)

	<u>Wheat</u>	<u>Corn</u>	<u>Soybeans</u>
1980	33.5	91.0	26.5
1981	34.5	108.9	30.1
1982	35.5	113.2	31.5
1983	39.4	81.1	26.2
1984	38.8	106.7	28.1
1985	37.5	118.0	34.1
1986	34.4	119.3	33.3
1987	37.7	119.4	33.7
1988*	34.0	82.3	26.6

*Projected

Source: U.S. Department of Agriculture, *Agricultural Statistics; World Agricultural Supply and Demand Estimates.*

effect on crop production was amplified because farm programs had already idled over a fifth of U.S. cropland.

The drought accelerated a drawdown of grain and oilseed stocks that was well under way before the rain stopped. A weaker dollar, cuts in U.S. support prices, and direct U.S. export subsidies all had contributed to a significant turnaround in farm exports in 1987. The resulting drawdown, followed by the drought, led to grain and oilseed stocks at the end of 1988 that are the lowest since 1980. The smaller stocks, in turn, produced the highest grain and oilseed prices in many years.

U.S. wheat production, which equals harvested acreage times crop yield per acre, fell 14 percent, due mainly to the sharp shortfall in spring wheat output. The winter wheat harvest was unaffected by the drought but suffered from a disease problem, wheat streak mosaic. Overall, wheat yields, a better indicator of crop growing conditions than production, fell 10 percent from the year before (Table 1). Despite higher market prices, wheat exports were strong due to aggressive use of the

Export Enhancement Program (EEP) and generally strong demand abroad. Wheat prices averaged \$2.57 in the 1987-88 marketing year, up only modestly from the previous year (Table 2). The wheat marketing year ended June 30, about the time that the drought was beginning to have its greatest effect on crop prices. That means the higher wheat prices brought on by the drought will be more evident in the 1988-89 marketing year.

Corn production fell sharply due to the drought's grip on most Corn Belt states. Corn yields were off a third from the previous year and were the lowest since 1974. The 4.7 billion bushels harvested was the smallest crop since 1983 when the Payment-In-Kind (PIK) program reduced the corn crop. Like wheat exports, corn exports remained strong in the face of sharply higher market prices. Continued robust foreign demand was the main reason. Corn prices moved up sharply in mid-summer as the drought hit the crop at its critical reproductive stage, and then prices began to slide in August as scattered rains fell across the Corn Belt. Prices averaged \$1.94 a bushel for the 1987-88 marketing year, up nearly a third from the previous year.

Soybean production fell less than corn production, but prices reacted even more sharply due to the small U.S. stocks as 1988 began. Late rains helped the soybean crop, but yields still fell 21 percent, equal to the percentage cut in total production. The 1.5 billion bushel crop was the lowest since 1976. Soybean stocks were relatively low as 1988 began due to strong domestic and foreign demand. The drought cut projected stocks to bare pipeline levels. Soybean prices moved up accordingly, averaging \$6.15 a bushel for the 1987-88 marketing year, up sharply from the year before.

Cotton production essentially escaped the drought. Production in 1988 was 15.2 million bales, up 3 percent from 1987. While yields fell slightly, planted acreage was higher this year.

TABLE 2
U.S. farm product price projections

<u>Crops</u>	<u>Marketing Years</u>		<u>Percent Change</u>
	<u>1987-88</u>	<u>1988-89</u>	
Wheat	\$2.57/bu.	\$3.60-3.75/bu.	+43
Corn	\$1.94/bu.	\$2.40-2.80/bu.	+34
Soybeans	\$6.15/bu.	\$7.00-8.50/bu.	+26
Cotton	\$0.642/lb.	N/A	N/A

<u>Livestock</u>	<u>Calendar Years</u>		<u>Percent Change</u>
	<u>1988</u>	<u>1989</u>	
Choice steers	\$69-70/cwt.	\$71-77/cwt.	+6
Barrows & gilts	\$43-44/cwt.	\$42-48/cwt.	+3
Broilers	\$.55-.56/lb.	\$.51-.57/lb.	-3
Turkeys	\$.61-.62/lb.	\$.63-.69/lb.	+7
Lamb	\$68-69/cwt.	\$63-69/cwt.	-4
Milk	\$12.10-\$12.20/cwt.	\$11.95-\$12.75/cwt.	+2

Source: U.S. Department of Agriculture, *World Agricultural Supply and Demand Estimates*.

Higher U.S. prices cut export demand by about 2 million bales, although domestic demand remained strong. Cotton prices averaged 64.2 cents a pound, up more than 10 cents from the previous year.

Overall, the drought led to strong crop markets in 1988. Cuts in corn, wheat, and soybean production accelerated a drawdown in crop inventories that was well-established as the year began. Crop prices peaked in mid-summer before softening as some rains fell. Still, crop producers enjoyed much higher prices than the previous year, and the much smaller grain stocks have set the stage for strong prices entering 1989.

Livestock

The drought was expected to markedly affect livestock production and prices since producers

were forced to liquidate herds. But that effect proved much smaller than expected. In the end, cattle were moved from parched pastures to areas with better range conditions, keeping liquidations to a minimum. The biggest effect of the drought was to boost feed grain prices sharply and thereby discourage any expansion in livestock supplies despite strong livestock market prices.

Beef production fell 1.5 percent in 1988 as cattle inventories continued to decline. The cattle industry had been contemplating an expansion since late 1987 due to favorable profit margins, but the drought lifted feed costs and stopped any incentives to expand. Still, fed-beef supplies remained large in 1988 as feedlot operators reacted to strong profits in late 1987 and early 1988. Nonfed slaughter fell due to ongoing declines in the nation's cattle inventory.

Cattle prices were strong in 1988. Prices for

choice steers at Omaha averaged \$69.50 a hundredweight, up \$5.00 from the year before. Fed-cattle profits were much narrower than in 1987, however, as rising corn prices cut margins. Many feedlots probably lost money in the fourth quarter. Strong fed-cattle prices resulted in active bidding for feeder cattle throughout most of 1988. Kansas City prices for feeder steers averaged \$83.00 a hundredweight, matching the record level of 1979.

Pork production rose more than 8 percent as producers responded to the extraordinary profit margins of 1987. The rising pork supplies weighed heavily on market prices for hogs, even as the drought pushed corn prices sharply higher. Many producers had negative margins in the second half of the year. Prices for barrows and gilts at the seven major markets averaged \$43.50 a hundredweight, down nearly 15 percent from the year before.

Poultry production continued its long-term expansion in spite of eroding profit margins due to the drought. Broiler output increased 4 percent, while turkey production rose 5 percent. Consumers continued a trend toward greater poultry consumption; per capita consumption of poultry rose to 81.8 pounds even as beef consumption slipped to 72.2 pounds. Broiler prices averaged 55.5 cents a pound at the 12 city markets in 1988, up 9 cents from the previous year. Higher feed costs, however, left most producers with limited gains in profits. Turkey prices averaged 61.5 cents a pound, up moderately from 1987. Turkey profits also were cut by the much higher feedstuff prices.

Farm financial conditions

Despite the great drought, a strong financial recovery continued for most farmers and ranchers in 1988. Crop prices were high enough to offset some decline in production, and livestock profits were solid, though off from 1987's record

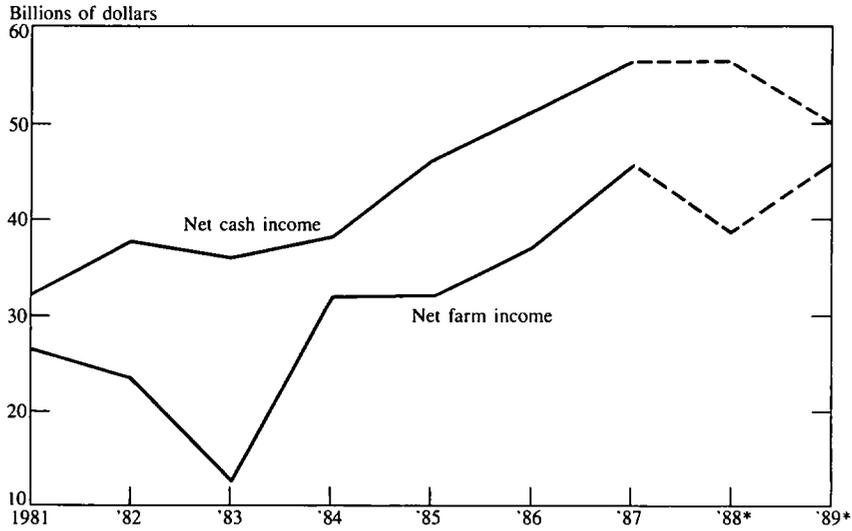
levels. Farmland values rose strongly in most regions, although values did pause in midyear due to the drought. Farm loan problems remained low, reinforcing the conclusion that agriculture's financial restructuring is past.

Farm incomes are likely to remain high in 1988. Most farmers sold large quantities of their grain stocks at the higher prices. As a result, net cash farm income, a broad cash flow measure of farm earnings equal to the difference between cash receipts and cash expenses, is estimated at \$57 billion, equal to 1987's record level (Chart 1). But net farm income, a production-based measure, which takes into account the drawdown in farm inventories, is estimated at \$39 billion, down more than 15 percent.² Government payments fell sharply as the drought raised crop prices—Commodity Credit Corporation outlays were \$13.1 billion compared with \$22.4 billion in 1987. Farm expenses were up modestly in 1988, due mainly to higher feeder livestock prices.

While aggregate U.S. farm income was strong, the drought created an uneven pattern of income gains and losses. Crop reductions caused by the drought varied widely, with a quilt-like pattern of winners and losers. Winter wheat producers benefited from the higher wheat prices caused by the shortfall in the spring wheat crop. Irrigated crop producers in states like Nebraska harvested near normal crops, while nearby Corn Belt states saw sharp cuts in yields. Range conditions were excellent in some southern Plains states, such as New Mexico, while cattle across the northern

² Net cash farm income and net farm income both are useful measures of the farm sector's financial performance. Net cash farm income measures the sector's ability to meet annual financial obligations on time. But sales from inventories of crops and livestock produced in previous years can boost net cash farm income. By adjusting for these inventory changes, net farm income measures farm earnings from the current year's production.

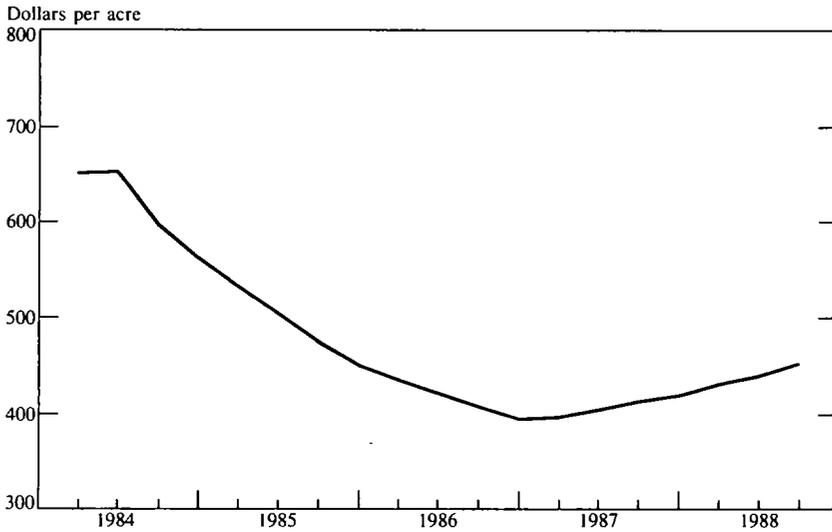
CHART 1
Farm income



*forecast

Source: U.S. Department of Agriculture, *Agricultural Outlook*.

CHART 2
Tenth District nonirrigated cropland values



Source: Federal Reserve Bank of Kansas City, *Agricultural Credit Survey*.

TABLE 3

Farm balance sheet excluding operator households and CCC loans on December 31
(billions of dollars)

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988*</u>	<u>1989*</u>
Assets							
Real estate	739.6	639.6	558.6	510.1	522.6	553.0	566.0
Non-real estate	205.7	208.9	190.4	181.5	186.3	188.0	194.0
Total assets	945.3	848.5	749.0	691.6	708.9	741.0	760.0
Liabilities							
Real estate	104.8	103.7	97.7	88.5	80.8	77.0	78.0
Non-real estate	87.9	87.1	77.5	66.8	61.9	63.0	65.0
Total liabilities	192.7	190.8	175.2	155.3	142.7	139.0	143.0
Proprietors' equity	752.6	657.7	574.8	536.3	566.3	602.0	617.0
Debt-to-asset ratio	20.4	22.5	23.4	22.5	20.1	18.8	18.8
* forecast							
Source: U.S. Department of Agriculture, <i>Agricultural Outlook</i> .							

Plains states were sold as pastures became scorched.

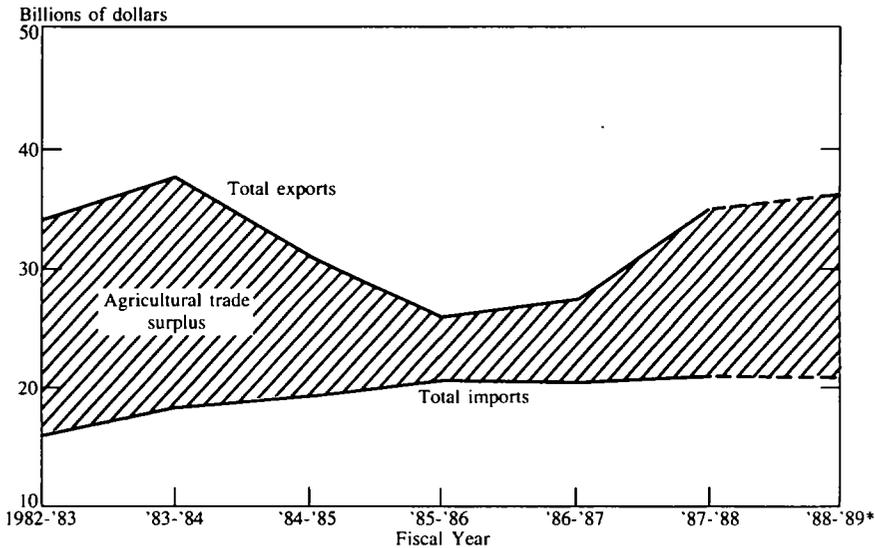
Farmland values moved higher in 1988. The drought may have made buyers more cautious during the summer but, for the year as a whole, land prices showed continued solid gains. In the seven states of the Tenth Federal Reserve District, prices of nonirrigated farmland increased 8 percent during the first three quarters, while prices of irrigated land and ranchland were both up 9 percent (Chart 2). Land values also showed strong gains in the Corn Belt states of the Chicago Federal Reserve District (up 8 percent). Most land buyers in 1988 appeared to be commercial farmers, and many sales included a substantial cash down payment.

The farm sector balance sheet for December 31, 1988 is expected to reveal further gains in assets and reductions in debt (Table 3). Farm debt is estimated at \$139 billion, the lowest level since

1978. The sector's debt-to-asset ratio is estimated at 19 percent, marking three years of improvement and the lowest ratio since 1981. Farm debt may move higher in the next few years, however, as farmers, encouraged by the strong farm recovery, invest more borrowed funds in their businesses.

Agricultural lenders have shared in the financial turnaround evident in the farm sector's overall balance sheet. Agricultural banks reported strong earnings in 1988 and appeared to take drought-related losses in stride. Earnings of the Farm Credit System (FCS) improved, but the FCS still faced a daunting task of restructuring nearly \$10 billion in problem loans under the fairly stringent requirements of bailout legislation passed in January. The concentration of drought-related crop losses in the northern Plains states and parts of the Corn Belt could pose greater loan problems for a few FCS districts.

CHART 3
U.S. agricultural trade



*forecast

Source: U.S. Department of Agriculture, *Agricultural Outlook*.

U.S. farm exports

U.S. farm exports in 1988 continued the expansion begun the year before. The value of farm exports in fiscal 1988 rose to \$35.2 billion, a 26 percent increase from the previous year (Chart 3). About half the increase was attributed to higher prices on U.S. farm products, while increased volume accounted for the other half. Export volume totaled 145.5 million metric tons, the highest in several years. Farm exports continued to gain from the lower dollar, economic growth abroad, and direct export subsidies under the Export Enhancement Program. The drought appears to have had no significant negative effect on exports.

The agricultural trade surplus jumped to \$14.2 billion in fiscal 1988 as imports remained fairly

steady. The agricultural trade surplus bottomed at about \$5.4 billion in fiscal 1986 and has since shown marked improvement. The U.S. appetite for agricultural imports remains strong at about \$21 billion. With only slow growth in imports, however, the substantial gains in exports the past two years have quickly translated into the widening U.S. farm trade surplus.

The year ahead

The lingering effects of the 1988 drought will play a significant role in agriculture's outlook for the year ahead, even with the likely return of normal weather. After falling gradually in recent years, carryover stocks will be much lower at the close of the 1988-89 crop marketing year. Crop prices are likely to remain strong to ration the

diminished inventories. Farm incomes, buoyed by high crop prices, are expected to be solid. But high crop prices will also mean high feed costs for livestock producers. Profit margins for cattle and hog feeders are expected to be narrow if not turn to losses during much of the year. Consumers are likely to find more poultry and less beef at the supermarket in 1989. High crop prices have also curtailed the momentum for international farm and trade policy reform. This indirect effect of the drought in the farm policy arena may prove to be the most damaging of all.

Farm income and financial conditions

Agriculture's buoyant recovery is expected to continue in 1989. Farm income is expected to be strong again due to increased crop output and high crop and livestock prices. Large plantings, encouraged by high market prices and fewer acres idled under government programs, will lead to greater input use at higher input prices, pushing farm expenses higher. Livestock expenses also will be high due to strong prices for feeder livestock and generally high feedstuff prices. Crop cash receipts may increase slightly, with greater output at somewhat lower prices. Livestock cash receipts may be even stronger than 1988's record level. On balance, net cash farm income may decline 10 to 15 percent as farmers begin replenishing crop inventories sold in 1988. That positive inventory accumulation could be substantial, pushing up the net farm income measure about 15 percent.³

Farmland values probably will continue their advance in 1989. Strong commodity prices and high incomes kept cash rents strong in the fall of 1988. That suggests that buying interest in

farmland is likely to remain active in the coming year. Anecdotal evidence suggests that land values in some markets have been bid to levels that are higher than cash flow fundamentals would support. Still, farmers appear to have a lot of cash they are willing to invest in land. The active bidding of land values above market fundamentals may be disturbing, but the concern is offset by the fact that most purchases are being heavily financed by cash. A coming reassessment of farm policy in 1990 may introduce some additional uncertainties in the land market in 1989, but that may prove a relatively unimportant factor in the face of strong crop markets.

Farm lenders can expect another good year in 1989. Loan demand should be up after six years of decline. Increased spring plantings will boost production credit demand, while strong land purchases will lead to continued growth in mortgage credit. Farm lenders may encounter some difficult credit extension decisions during the spring credit season. Only a small advance deficiency payment is expected in 1989, a sharp break with the pattern of generous payments in recent years. Farm borrowers, therefore, will be using credit more heavily to plant the 1989 crop. The drought's ultimate effect on the financial condition of farmers is likely to be learned as spring credit decisions are made.

Food prices outlook

The drought will have a marked effect on the outlook for food prices, though smaller than expected. The drought will probably raise food prices, as measured by the Consumer Price Index (CPI) food component, 6 to 8 percent from July 1988 to July 1989. After only modest food price inflation in the first half of 1988, the CPI food component increased only 4 percent for the year as a whole. For calendar year 1989, retail food prices are expected to rise 3 to 5 percent, with smaller increases in the second half.

³ See footnote 2.

Farm policy outlook

Further implementation of two pieces of legislation already enacted—the Disaster Relief Act of 1988 and the Food Security Act of 1985—dominate the farm policy outlook for 1989. In addition, the outcome of the ongoing Uruguay round of General Agreement on Tariffs and Trade (GATT) negotiations promises to play a major role in determining the direction of U.S. farm policy well into the 1990s.

The Disaster Relief Act of 1988 and the 1989 crop provisions of the Food Security Act of 1985 (the 1985 farm bill) together form the farm policy response to the 1988 drought. In response to drought-shortened crop inventories, the 1989 version of the farm bill will encourage larger crop plantings. And the Disaster Relief Act will increase flexibility to switch plantings among crops in 1989 while providing immediate financial assistance to farmers with large crop losses in 1988. This two-pronged policy response was designed to blunt the immediate impact of the drought on farm finances and to minimize the longer term impact of the drought on crop supplies.

In the face of plummeting inventories of wheat and feedgrains, the acreage set-aside requirement for participation in the wheat and feedgrains programs was cut back to allow larger plantings in 1989. Wheat producers participating in the program are required to idle only 10 percent of their base acres for the 1989 crop, down from 27.5 percent in 1988. Similarly, the acreage set-aside requirement for participating corn producers was cut back to 10 percent of base acres for the 1989 crop, down from 20 percent in 1988. Still, producers of both crops must weigh larger planting allowances against lower guaranteed prices under the 1989 program provisions. For crops harvested in 1989, the wheat target price will be \$4.10 a bushel and the corn target price will be \$2.84 a bushel, a 3 percent cut in both prices from 1988

levels. Despite the lower price guarantee, program participation is expected to remain high for both wheat and corn producers. In short, high participation in programs with relaxed acreage control provisions point to larger plantings and, with a return to normal weather, to sizable 1989 crops.

The Disaster Relief Act of 1988, signed into law on August 11, provides additional policy adjustments for 1989 crop plantings. High price supports for wheat and feedgrains under the 1985 farm bill have made several other crops relatively less profitable and more risky. The additional planting flexibility written into the new drought relief legislation is designed to amend the policy distortions that have caused soybean, oat, and sunflower production to fall since the 1985 farm bill went into effect. The drought's impact on already diminished inventories of these non-program crops simply underscored the need for adjustments in the current farm bill.

One provision of the new law allows producers to plant soybeans or sunflowers on 10 to 25 percent of the acreage that would otherwise be planted to wheat, feedgrains, cotton, or rice under the 1985 farm bill. After producers state their planting intentions in the initial sign-up period, the Secretary of Agriculture will limit soybean plantings on permitted program acreage to ensure that the average soybean price stays at least 15 percent above the 1988 loan rate, or \$5.49 a bushel. Similarly, producers will be allowed to plant oats on any portion of their farm acreage base, without affecting their base-acreage history. Together, these provisions will help correct inadvertent, policy-induced distortions of otherwise clear market signals, allowing plantings of soybeans, oats, and sunflowers to increase.

The primary objective of the remaining provisions of the Disaster Relief Act is to ameliorate financial losses farmers suffered due to drought and other natural calamities during 1988. Producers of both crops and livestock are eligible for benefits under the new legislation. In general,

producers who lost at least 35 percent of 1988 crops due to drought or other natural disasters are eligible for disaster assistance payments. The payment level depends on the crop involved, the extent of the producer's loss, and whether the producer was a participant in the farm program. The law also allows livestock producers who suffered substantial losses in farm-grown feed production to purchase Commodity Credit Corporation (CCC) feed inventories at discount prices or to be reimbursed for a portion of the cost of purchased feed. In sum, these and other provisions of the Disaster Relief Bill are expected to channel about \$3.9 billion of financial assistance into areas hit hardest by the 1988 drought.

From a public policy perspective, the quick passage of the drought relief legislation last summer is both laudable and troubling. The new law was an astonishingly quick response to an immediate threat. The disaster relief bill's rapid passage into law suggests strong public support for assisting farmers who suffer from natural disasters. In addition, the new legislation is commendable for targeting financial assistance where it is needed most, an improvement over some programs in the 1980s that have made benefits available to farmers whether the assistance was needed or not. But in another sense, Congress' quick provision of billions of dollars of financial assistance is disturbing. Farmers are aware of the risks of their enterprise and can elect to insure against those risks. But a record of federal assistance whenever disaster strikes is likely to discourage producers from taking advantage of federally sponsored all-risk crop insurance. Although the new legislation requires some recipients of disaster payments to purchase crop insurance for 1989 crops, the Disaster Relief Act sends producers another signal that taxpayers are willing to bear some private farm business risks.

With farm program costs soaring on both

sides of the Atlantic, reduction in agricultural subsidies around the globe has become a focal point of the current round of international trade—or GATT—negotiations. Three sets of policy reforms have been proposed during the negotiations. At one extreme is the European Community's market-sharing proposal, a plan that would essentially preserve the status quo. At the opposite extreme is the U.S. plan to phase out all trade-distorting farm subsidies in ten years. Only bona fide food aid and direct income subsidies that do not affect production decisions would be allowed under the U.S. plan. The Cairns Group—13 agricultural producing countries including Canada, Australia, New Zealand, Argentina, and Brazil—has staked out middle ground between the EC and U.S. proposals. Under the Cairns Group plan, an ultimate goal of total agricultural trade liberalization would be pursued by first freezing current subsidy levels and then using the GATT framework to gradually remove trade restrictions.

The United States maintained its commitment to total liberalization of agricultural trade at the early December, midterm review of the current round of negotiations held in Montreal. But the EC, firmly wedded to its Common Agricultural Policy, steadfastly rejected that notion, and no progress was made in closing the gaps separating the three proposals. Although another attempt to resolve the stalemate has been scheduled for April 1989, prospects for meaningful farm and trade policy reform in the current GATT round remain uncertain.

The 1988 drought is at least partially to blame for the continued deadlock in the GATT negotiations. Just as momentum for international farm policy reform was building, the drought struck U.S. crops and sent world grain prices soaring. By reducing the cost to the EC of maintaining its current subsidies, higher market prices have reduced pressure on the Europeans to negotiate meaningful farm policy reform. Additional Euro-

pean intransigence to farm and trade policy reform is potentially the longest lasting and most unfortunate result of the 1988 drought.

The protracted stall in the GATT negotiations is occurring just as Congress prepares to rewrite domestic farm policy in the 1990 farm bill. A new GATT agreement to wind down farm subsidies would, in itself, write a portion of any new domestic farm legislation. But if no breakthrough in the GATT negotiations appears likely when Congress pursues its own farm policy debate, the United States is likely to maintain its position in the international farm subsidy gridlock with new farm legislation similar to the 1985 farm bill. In that event, agriculture at home and abroad will continue to struggle with expensive subsidies that may result in a chronic excess supply.

Export outlook

U.S. agricultural exports for 1989 are likely to be smaller in volume but larger in value, another reflection of the 1988 drought. Higher prices of drought-diminished supplies of U.S. crops and larger foreign production could restrict export volume to 136 million metric tons, down about 6 percent from last year. The decline in export tonnage is highlighted by an expected 30 percent reduction in soybean exports caused by drought-tightened U.S. supplies and a sharp expansion in South American production. As a result, the U.S. share of world soybean trade could fall to only 35 percent, down from 49 percent in 1988 and the smallest share on record. Despite the reduction in total U.S. farm export volume in 1989, higher crop prices are likely to push up the total value of U.S. farm exports to about \$36.5 billion, up about 4 percent from a year ago. With nearly stable agricultural imports of about \$21 billion, the U.S. agricultural trade surplus could total \$15.5 billion, up nearly 10 percent from last year and nearly triple the industry's trade surplus in 1986.

Crop outlook

The outlook for crops in 1989 is colored by the lingering effects of the 1988 drought. The drought struck when crop inventories were already declining under government programs that reduced production and encouraged export. Crop inventories will be squeezed further in the 1988-89 crop year because the 1988 harvest of most crops will fall far short of expected use in 1989. As a result, crop prices during the 1988-89 marketing year are likely to remain strong to ration dwindling crop supplies.

Under normal weather conditions, U.S. crop yields and production are likely to rebound. A return to normal weather patterns is the most likely scenario for the 1989 growing season. But due to below normal rainfall in the fall, much of the nation remains in severe to extreme drought. In the driest areas of the nation, including much of the Corn Belt and the northern Great Plains, depleted soil moisture reserves have not been recharged by autumn rains. In the absence of adequate soil moisture reserves, development of 1989 crops will be especially dependent on plentiful spring rains and timely rainfall throughout the remainder of the growing season.

Wheat inventories will be drawn down sharply during the 1988-89 marketing year, the third consecutive year of decline. Due to a smaller beginning inventory and the drought-diminished crop, the total wheat supply, at about 3.1 billion bushels, is more than a fifth smaller than a year earlier (Table 4). Wheat use is expected to slip only slightly from this year's level. Domestic use will likely exceed this year's level, but higher wheat prices could reduce export volume nearly 9 percent from a year earlier. In sum, total wheat use is expected to be about 2.6 billion bushels, a year-over-year decline of about 5 percent. On balance, drought-reduced production and heavy expected use will cut wheat carryover inventories by nearly 60 percent to 533 million bushels, the

TABLE 4

U.S. agricultural supply and demand estimates on December 12, 1988

(millions of bushels, metric tons, or bales)

	Corn (bu)		Feedgrains (mt)		Soybeans (bu)		Wheat (bu)		Cotton (bales)	
	Sept. 1-Aug. 31	June 1-May 31	Aug. 1-July 31	Aug. 1-July 31						
	1987-88	1988-89	1987-88	1988-89	1987-88	1988-89	1987-88	1988-89	1987-88	1988-89
Supply										
Beginning stocks	4,882	4,260	152.1	133.6	436	302	1,821	1,256	5.03	5.80
Production & imports	7,068	4,676	216.3	143.1	1,923	1,512	2,107	1,812	14.76	15.20
Total supply	11,950	8,936	368.4	276.8	2,359	1,814	3,945	3,088	19.79	21.00
Demand										
Domestic	5,959	5,715	182.1	172.3	1,255	1,124	1,097	1,105	7.62	6.90
Export	1,732	1,775	52.6	52.5	802	565	1,592	1,450	6.58	5.00
Total	7,690	7,490	234.8	224.8	2,057	1,689	2,689	2,555	14.20	11.90
Ending stocks	4,260	1,446	133.6	52.0	302	125	1,256	533	5.77	9.20
Stocks-to-use ratio	55.4	19.3	56.9	23.1	14.7	7.4	46.7	20.9	40.6	77.3

Source: U.S. Department of Agriculture, *World Agricultural Supply and Demand Estimates*.

smallest carryover since 1974. Cash wheat prices are likely to remain much stronger than a year earlier. Farm-level prices may average \$3.60 to \$3.75 a bushel in the 1988-89 marketing year, well above this year's average price of \$2.57 a bushel but still below the farm program target price of \$4.23 a bushel.

The drought also exacted a heavy toll on feedgrain supplies for the coming crop year. At 276.8 million metric tons, feedgrain supplies will be a fourth smaller than this year. The sharp reduction in feedgrain supplies is due primarily to a 34 percent decline in production of corn, the principal feedgrain. The drought-reduced corn crop and a smaller beginning inventory will lower the total corn supply more than a fourth to 8.9 billion bushels. Despite the sharp draw-down in the corn supply, however, total corn use in the 1988-89 marketing year is expected to be off only 3 percent from this year. Corn use is expected

to be supported by nearly stable exports of about 1.8 billion bushels. Domestic use could fall about 250 million bushels as high prices trim feed consumption.

With only a slight reduction in corn use and a huge decline in corn supplies, corn inventories are expected to plummet. Corn stocks could fall two-thirds to only 1.4 billion bushels, the smallest inventory since 1983-84, the year of the PIK program. Prices have already risen sharply to ration smaller corn supplies, and prices are likely to remain strong in the year ahead. Farm-level corn prices could average \$2.40 to \$2.80 a bushel during the 1988-89 marketing year, a range well above this year's average price of \$1.94 a bushel and approaching the \$2.93 a bushel target price.

Soybean stocks will also be drawn down during the 1988-89 marketing year. A small beginning inventory, caused by strong demand and the inadvertent effects of the 1985 farm bill, and a

drought-reduced crop are expected to limit the 1988-89 soybean supply to only 1.8 billion bushels, nearly a fourth smaller than a year earlier. Total soybean use is also expected to fall during the 1988-89 marketing year as higher prices constrain export demand for soybeans and for the primary soybean products, meal and oil. Soybean demand by domestic crushers is expected to fall about 13 percent below a year earlier. Domestic soybean meal demand is expected to edge down about 6 percent, as pork producers cut back feed use. Higher soybean meal prices are expected to push meal exports a third lower than a year earlier. Similarly, a large drop in soybean oil exports is expected to lower total soybean oil use by about 3 percent. High U.S. soybean prices will discourage soybean exports overall. Soybean exports are expected to be only 565 million bushels, the smallest quantity since 1976 and 30 percent less than this year. In total, soybean use could be down about 18 percent.

Despite reduced overall demand, soybean use will still be larger than soybean production, leading to a further decline in inventories. Expected ending stocks of only 125 million bushels are the smallest since 1973 and are considered to be minimum pipeline supplies. To ration the dwindling soybean stocks, farm-level soybean prices are expected to average \$7.00 to \$8.50 a bushel, up from an average of \$6.15 this year. Soybean meal prices could average \$240 to \$270 a ton compared with this year's average of \$222. Soybean oil prices could range from 21 cents to 25 cents a pound, up from an average of 22.65 cents a pound this year.

In contrast to the outlook for inventories of the grains and soybeans, cotton inventories are expected to grow during the 1988-89 marketing year. Another big crop, combined with larger beginning stocks, is expected to boost the total cotton supply available for the 1988-89 marketing year to 21 million bales, the largest beginning supply since 1967. Total cotton demand, on the

other hand, is expected to fall more than 2 million bales. Domestic mill demand will likely slip 700,000 bales under the pressure of continued large textile imports and smaller domestic per capita cotton consumption. And higher foreign production is likely to curb U.S. cotton exports. On balance, stable production and smaller demand suggest that ending stocks could jump 60 percent to 9.2 million bales, the largest ending inventory since the 1985 farm bill went into effect. The average farm-level cotton price is likely to range from 52 to 55 cents a pound, just above the 51.8 cent loan rate but down sharply from this year's average price of 64.2 cents a pound.

In summary, the effects of the 1988 drought linger in the crop outlook for 1989. Relatively stable demand for drought-diminished 1988 crops will pull crop inventories down sharply. Crop prices are likely to remain stronger than a year ago to ration smaller crop supplies. A rebound in crop production with a return to normal weather conditions in 1989 would allow crop inventories to stabilize. But depleted soil moisture reserves may leave crops especially vulnerable to adverse weather developments in the year ahead. In that event, already diminished crop inventories would be rationed by still higher crop prices.

Livestock outlook

The effects of the 1988 drought also play a major role in the livestock outlook for 1989. Withered pastures and higher feed costs may temporarily delay a long-awaited expansion in the beef industry. And a rapid expansion in pork production may grind to a halt as already narrow profit margins are squeezed even more by higher feed costs. The result could be a 4 percent decline in total red meat production. Poultry producers are likely to view these developments in the red meat industry as another window of opportunity. Total red meat and poultry output may be off only

1 percent from a year ago, as smaller red meat production is partially offset by continued expansion in the broiler and turkey industries. In brief, the drought's impact on cyclical trends in the beef and pork industries may temporarily accelerate the consumer's shift from red meat to poultry consumption.

The answers to two key questions are likely to determine the outlook for the cattle industry in the year ahead: When will the cattle herd finally reach a bottom and begin to rebound? And, will retail demand be strong enough to support record-high retail beef and live cattle prices in the presence of large competing supplies of pork and poultry? Though the answers to these questions are not yet clear, the beef industry outlook likely includes smaller beef production, record-high cattle prices, and tight profit margins for cattle feeders.

Beef production is expected to fall nearly 7 percent next year after declining about 1.5 percent in 1988. The expected decline in beef production in 1989 is due in part to the limited supply of feeder cattle that is being produced by the nation's shrunken cattle herd. At about 33 million head on January 1, 1988, the national beef cow herd was the smallest since records began in the mid-1960s. But cattle numbers may be approaching a bottom after a six-year decline. As that bottom approaches, 1989 beef production is expected to dip as animals that would otherwise be fattened for slaughter are retained for breeding herds.

Encouraged by strong profits earned from sales of feeder cattle at extremely high prices during most of the past two years, cattle ranchers may have already begun the slow process of rebuilding breeding herds. Beef cow slaughter was down about 9 percent in the first half of 1988, and the number of heifers entering cow herds has risen, both pointing to rebuilding inventories. This summer's scorched pastures may have temporarily delayed the rebuilding effort, and high-priced feed

may limit ranchers' efforts to maintain larger herds through the winter months. But preliminary signals suggest that cattle numbers are nearing a bottom after a long decline. As the turnaround in cattle numbers begins, smaller near-term beef production can be expected.

On the demand side, continued strength in consumer incomes is likely to support demand for beef and other meats. But beef consumption may slip due to record-high retail beef prices and large competing supplies of pork and poultry. Per capita beef consumption is likely to plummet nearly 8 percent to about 67.2 pounds in 1989, the fourth consecutive year of smaller per capita beef consumption.

Continued strength in retail beef prices and a limited supply of fed beef moving to market are likely to push live cattle prices to record levels by mid-1989. Fed cattle prices could rise to the \$80 a hundredweight level in the second quarter of 1989 before slipping to the mid-\$70s a hundredweight later in the year. Choice steers at Omaha could average \$71 to \$77 a hundredweight for the year, up from an average of \$69 to \$70 per hundredweight in 1988. But the strong fed-cattle market will probably not be all windfall for cattle feeders. Strong fed-cattle prices are likely to be bid into prices of the limited number of feeder cattle. Kansas City feeder steer (600 to 700 pound) prices could average in the upper \$70s to lower \$80s a hundredweight, even higher than the 1988 record average. On balance, expensive feeder cattle and feed will likely lead to narrow or negative returns for cattle feeders in 1989 despite extraordinarily high fed-cattle prices.

In sharp contrast to the preliminary signs of expansion emerging in the beef industry, pork production appears to be nearing a cyclical downturn after nearly two years of rapid expansion. Although pork production through the first half of 1989 is expected to remain above this year's level, negative producer returns are already dampening enthusiasm for further expansion. The

September 1, 1988 hogs and pigs inventory suggests that pork production in the first quarter of 1989 will be up about 2 percent from a year ago. In addition, a 3 percent increase in the size of the breeding herd over the past year and increased farrowing intentions for the December-to-February period both suggest that modest year-over-year gains in pork production will continue into the summer months of 1989. But the pace of expansion is slowing. Negative producer returns resulting from higher feed costs and market hog prices below \$40 a hundredweight appear to be discouraging plans for further expansion.

Consumption of pork is likely to be strong in the year ahead. During the past year, wholesale and retail pork prices have fallen in relation to beef and poultry prices. As a result, pork has become a more attractive choice for the consumer. In addition, retail pork prices have not fallen as much as farm-level prices since midyear. The near record farm-to-retail price spread is likely to encourage retailers to market pork more aggressively. Smaller pork supplies combined with strong consumer demand may lift market hog prices above break-even levels by mid-1989. Barrow and gilt prices at the seven regional markets may average \$42 to \$48 a hundredweight during the year, slightly above the 1988 average of \$43 to \$44 a hundredweight.

The long expansion in broiler production is likely to continue in 1989. Doubts about the extent of the drought's impact on feed prices and about the duration of stronger than expected broiler prices slowed the industry's expansion during the last half of 1988. But continued strong consumer demand and smaller red meat supplies may help boost expansion to the longer run pace of 5 percent a year in 1989. Per capita broiler consumption could jump to 65 pounds in 1989, nearly 4 percent above per capita consumption in 1988. As red meat supplies edge lower during the year, broiler prices are likely to trend higher from a

first-quarter average of 50 to 56 cents a pound. For the year, broiler prices could average 51 to 57 cents a pound, little changed from the 1988 average.

Turkey producers are likely to expand production cautiously in 1989. During the second half of 1988, producers reduced production 5 percent below year-earlier levels following a full year of losses. Positive returns realized in the latter half of the year, however, are likely to encourage producers to resume a modest expansion. Turkey production is now expected to increase about 1 percent in 1989. Continued strong consumer demand is likely to support prices of the modestly larger turkey supplies. After a more than 9 percent increase in per capita turkey consumption in 1988, per capita consumption in 1989 is likely to be little changed at about 16.5 pounds. Turkey prices may average 63 to 69 cents a pound, above this year's average of 61.5 cents a pound.

Trends in milk production in 1989 will likely be determined by the lingering effects of the drought on dairy profitability and by related adjustments in dairy policy. Monthly milk production has been above the previous year's level every month since the mid-1987 end of the herd liquidation phase of the Dairy Termination Program, a program designed to reduce excess capacity in the dairy industry. Rising milk output, despite fewer cows, reflects gains in productivity per cow. Recently, however, drought-induced boosts in feed costs have trimmed profit margins and appear to be slowing productivity gains. At least partially offsetting the effect of higher feed costs on dairy profit margins are two adjustments to the milk support price included in the federal drought relief package. The first eliminates a 50 cents a hundredweight cut in the support price that likely would have occurred on January 1, 1989. And the second increases the support price by 50 cents a hundredweight from April through June 1989. Unless these drought-related dairy policy revisions fully offset the

effects of higher feed prices on profitability, little expansion in milk production is likely in 1989. With little expansion in milk production and continued strong commercial demand, milk prices could average \$11.95 to \$12.75 a hundredweight during the 1988-89 marketing year.

Conclusions

U.S. agriculture continued its strong recovery in 1988, shrugging off a severe drought in the process. The drought cut crop production sharply, especially in the northern Plains states and in parts of the Corn Belt. But crop prices soared as supplies dwindled, keeping incomes high overall. Although farm income remained near record levels, the drought created wide regional variation in farm finances. Farmland values continued to advance in 1988, in part because the high farm incomes of the past three years have given farmers big cash positions with which to purchase land. Strong crop prices also led to active interest in land purchases. U.S. farm exports stayed quite strong in the face of higher crop prices as

economic growth abroad and the weaker U.S. dollar kept demand strong for U.S. grain. As total grain stocks declined to the lowest level since 1980, the surplus problem of the early 1980s waned. Still, U.S. agriculture's productive capacity remains huge, and many unknowns—future world economic growth and the pace of biotechnology advance, among others—will determine whether surplus recurs in the 1990s.

The farm outlook for 1989 remains bright. Tighter grain stocks promise strong crop prices throughout most of the year. The livestock industry also expects strong prices. The cattle industry will begin the year with the smallest herd in nearly 30 years, setting the stage for possible record prices for finished cattle. But the high feedgrain prices will keep livestock profits narrow. Although farm expenses will rise as farmers plant more acres, increased crop production and high commodity prices will keep farm incomes strong in 1989. Farmland values are expected to continue to advance at a moderate pace. Overall, U.S. agriculture should enjoy a third year of broad-based recovery.

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