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Midwest Floods of 2008: Potential Impact on Agriculture

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Randy Schnepf
Specialist in Agricultural Policy
Resources, Science, and Industry Division

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Midwest Floods of 2008: Potential Impact on Agriculture

Summary

Unusually cool, wet spring weather followed by widespread June flooding across much of the Corn Belt has cast considerable uncertainty over 2008 U.S. corn and soybean production prospects. As much as 5 million acres of crop production may be either lost entirely or subject to significant yield reductions. Estimates of crop damage vary widely, and could change based on the extent of plant recovery or replanting. The likely impacts, however, cannot be estimated until August 12, when USDA survey data becomes available. Significant damage also was incurred by agricultural processing facilities, livestock operations, grain elevators and storage facilities, and transportation infrastructure.

On June 30, 2008, USDA released preliminary estimates of U.S. crop area. Since most of the survey data were collected prior to the flooding, USDA re-interviewed a smaller sample of farmers in the flood-affected areas in late June to improve estimates of abandoned and harvested acres for flooded areas. The new data suggested that 87.3 million acres had been planted to corn and 74.5 million acres to soybeans. However, the data suggested that a larger than normal share of planted acres would be abandoned — much of it in the prime growing areas of the Corn Belt. Thus, harvested area for corn and soybeans were projected at 78.9 million and 72.1 million acres, respectively. USDA plans to collect additional survey data on harvested acres in the affected region in mid-July, which will be available by August 12. On July 11, 2008, USDA forecast the national average corn yield at 148.4 bushels per acre, down 4% from the historical trend yield to account for the combined effect of slow planting progress, unusually slow plant emergence, and a lower share of harvested area in the higher-yielding Corn Belt due to the flooding. However, final yields may still vary widely based on the extent of replanting and growing conditions through the remainder of the growing season.

Congress has appropriated nearly $480 million in emergency funding, primarily for conservation activities in flood-affected regions, as part of the FY2008 Supplemental Appropriations Act (P.L. 110-252). USDA is also committing resources to the flood-affected areas including rescue and clean up, food assistance, housing, community assistance, business assistance, and farmer and rancher assistance. In addition, USDA announced permission, on July 7, 2008, to use CRP land for grazing only in disaster and contiguous counties.

In light of recent record high market prices for corn and soybeans, and the outlook for extremely tight supplies by late summer, commodity market prices are likely to remain volatile through the remainder of the growing season. If flood-related crop losses ultimately prove sufficiently large (to be determined at harvest time), they will likely contribute to higher commodity prices, thereby adding to pressure on policymakers over concerns about consumer food price inflation, international food aid availability, and the soundness of policy that dedicates commercial agricultural crops to biofuels production, particularly corn used for ethanol.

This report will be updated as events warrant.

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Background

The United States plays a critical role in global markets for both feed grains and oilseeds. The United States is the world's leading producer and exporter of both corn and soybeans. In 2007 the United States had 42% and 63% shares, respectively, of world corn production and trade, and 32% and 41% shares of world soybean production and trade. As a result of this dominant role, unexpected changes in U.S. production for either corn or soybeans, such as those stemming from the Midwest floods of 2008, can have a major impact on both U.S. and global commodity markets.

During the first half of 2008, U.S. and world agricultural markets for most grains and oilseeds experienced tight supplies and record high prices.[1] The high prices provided a tantalizing incentive for U.S. farmers as they prepared to plant their crops this past spring. In contrast, the dramatic, unexpectedly sharp price increases of the past year have raised costs for livestock feeders and agricultural processors, evoked considerable concern about consumer food-price inflation and international food aid availability, and sparked a global debate — referred to as the "food versus fuel" debate — about the increasing policy trend of dedicating commercial agricultural crops to biofuels production, particularly corn used for ethanol. Against this backdrop of producer anticipation and consumer angst, new concerns have emerged about potential weather- and flood-related production losses to this year's U.S. corn and soybean crops.

Unusual Spring Weather Across the U.S. Corn Belt

U.S. Corn Belt. The Corn Belt is a 13-state region located in the Midwest where corn is the predominant cash crop (**Figure 1**). It stretches from Ohio through Indiana, Illinois, Iowa, northern Missouri, southern Wisconsin, and Minnesota to the eastern fringe of the Great Plains states of North and South Dakota, Nebraska, and Kansas. The Corn Belt also includes parts of Michigan and Kentucky. Since 2000, these 13 states have accounted for 89% of U.S. corn production (**Table 3**). Iowa and Illinois, in the heart of the Corn Belt, are the two leading corn-producing states with a combined production share of 36%. Similarly, 88% of U.S. soybean production occurs in the 13 Corn Belt states, with Iowa and Illinois again the two leading producers with a combined share of 32% (**Table 4**).

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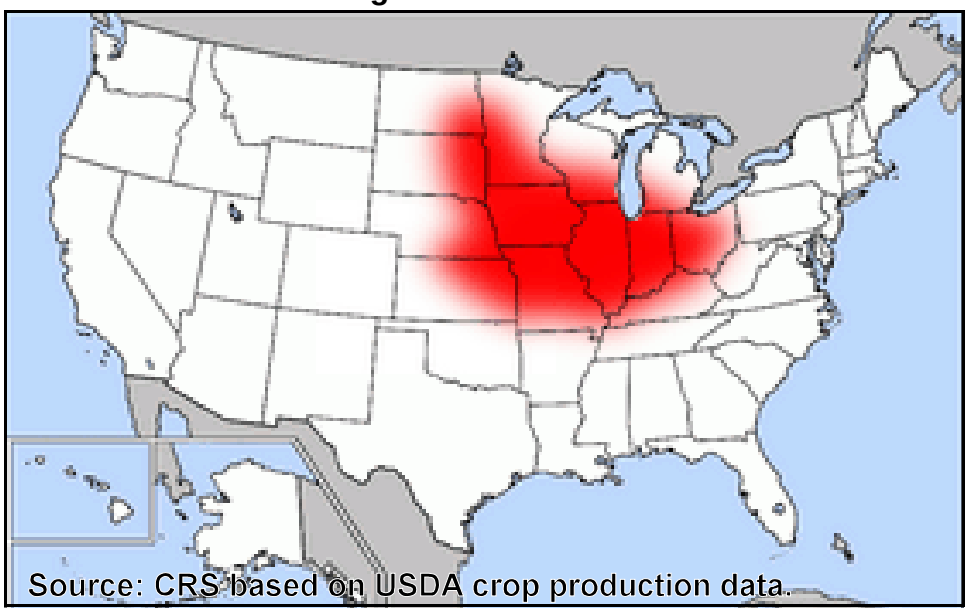
[1] For more information, see CRS Report RL34474, *High Agricultural Commodity Prices: What Are the Issues?*, by Randy Schnepf.

Figure 1. Corn Belt



Wet, Cool Weather Persists Since Late 2007. The 2008 Midwest weather-related crop problems — the late planting start, slow crop development, and severe June flooding — were precipitated in 2007 by above-normal rainfall and a cold, wet winter that saturated soils. In Iowa, 2007 was the fourth-wettest year on record.[2] The unusually cool, wet conditions persisted through spring 2008. Again citing Iowa, which was subsequently hit the hardest by June floods (**Figure 2**), as an example, the first six months of 2008 represented the wettest January-to-June period on record. Cool weather inhibited evaporation rates, thus slowing the soil's rate of drying. As a result, many regions of the Corn Belt were saturated and vulnerable to erosion, ponding (standing water), and flooding when heavy storms in late May and early June dropped additional rainfall.

Planting Date Is Critical for Optimal Yields. Traditionally, farmers plant corn as early as possible because early planting provides the greatest potential to achieve maximum yields.[3] Corn is usually planted ahead of soybeans. Early corn planting is discouraged by wet or cold soils (below 50° F). As a result, more southerly regions tend to have earlier optimal planting dates. In Iowa the optimal corn planting dates are between April 20 and May 5. Yields begin to drop off as the planting date is delayed. A significant yield reduction occurs when the planting date is extended to late May or June. Similarly, the optimal soybean planting date in Iowa is the last week of April for the southern two-thirds of the state, and the first week of May for the northern third. Optimal planting dates in more northerly latitudes, such as in Minnesota or Wisconsin, occur slightly later and have a smaller window for delayed planting.

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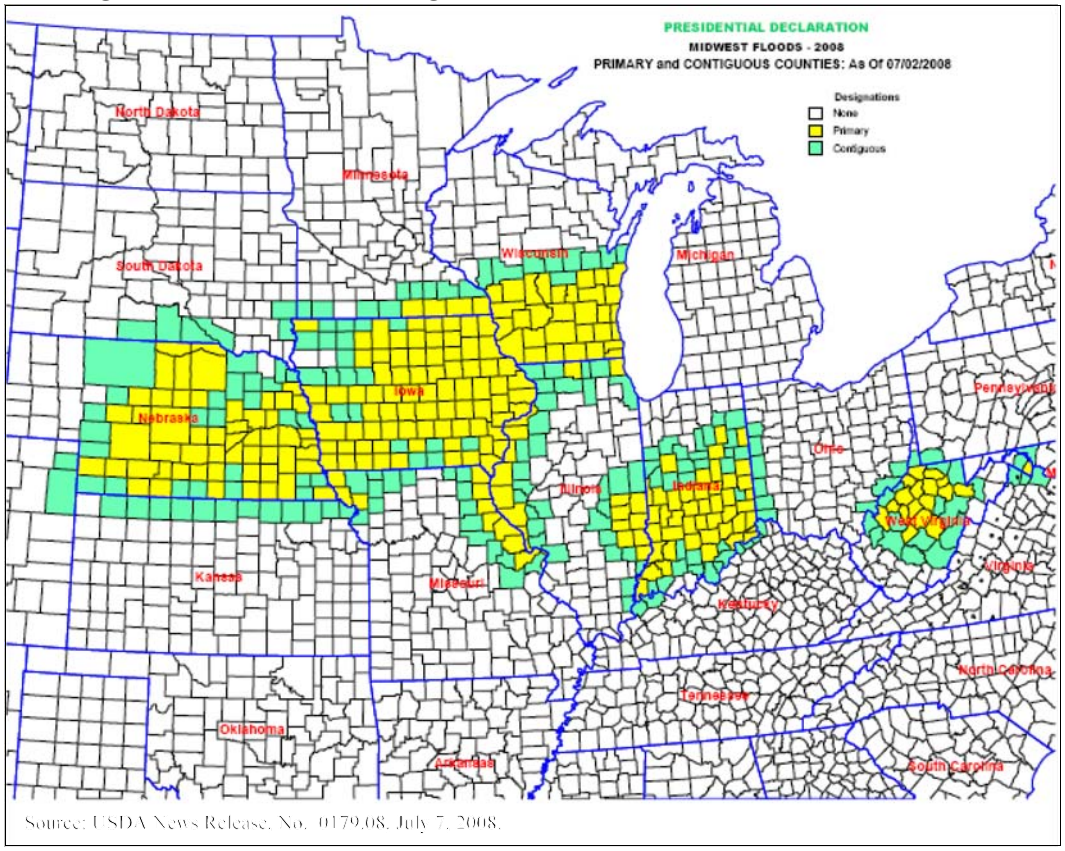
[2] "Memorandum for Reporters and Editors," Iowa Dept. of Agriculture and Land Stewardship, July 1, 2008. Note that Iowa's weather records date back to the early 1870s.

[3] See *Has the best time to plant corn changed?* and *Early planting of soybean is very important*, Integrated Crop Management (ICM), Iowa State University (ISU) Extension, at [http://www.ipm.iastate.edu/ipm/icm/2006/3-13/corntime.html] and [http://www.ipm.iastate.edu/ipm/icm/2007/4-2/earlyplant.html].

Figure 2. Counties Designated as Presidential Disaster Areas



This year's excessive rainfall coupled with unusually persistent cold ground temperatures delayed both corn plantings and subsequent plant emergence across much of the prime growing region of the Corn Belt. The late start pushes key plant development stages of the corn growth cycle into the hotter weeks of July, when it is susceptible to heat stress and dryness, and later into the fall, when the possibility of an early freeze can prematurely end ear or pod filling. In addition, a late start to corn generally implies a late start to soybean production (whose planting generally follows corn), with similar growth concerns. As a result, crop yield concerns had already emerged by late May.

June Flooding Ravages Key Growing Areas. With soils already saturated and yield concerns mounting, widespread, heavy rains across the Corn Belt in late May and early June washed out substantial areas recently planted to crops. In addition, they produced severe erosion and gullying, and left saturated soils and standing water in many fields. But most damagingly, the rains triggered widespread flooding across the heart of the Corn Belt. Thousands of acres of prime cropland in Iowa, Nebraska, Illinois, Indiana, Wisconsin, and Missouri were flooded by rivers that swelled their banks and caused levees to break as the storm surge moved through the Mississippi River watershed. Indiana's agriculture director said that the June floods had likely caused the worst agriculture disaster in the state's history, damaging nearly 10% of corn and soybean crops.[4]

[4] As cited in "Crop Development Issues, Food Prices and Ethanol Concerns," posted by (continued...)

The flooding has likely led to the abandonment of substantial planted crop acreage, and to yield losses in those crops that survived the flooding but were subject to extended periods of standing water or waterlogged soil.[5] A further concern of saturated soils persisting during the early stages of plant development (particularly for late-planted crops) is that corn plants are more likely to develop shallow root systems, which, in turn, increase their vulnerability to heat and dryness later in the growing cycle.

Initial attempts to ascertain the extent of the crop damage are difficult because the eventual yield and production outcomes for the affected areas will depend on how quickly flood waters recede and whether plant growth resumes or new seed is planted. For many farmers, by late June the replanting window for corn had already closed or was approaching faster than the soils were drying. In many cases, the indemnities offered under federally subsidized crop insurance represented greater potential remuneration than incurring the costs of replanting subject to a substantial reduction in yield coverage (due to the late planting date). Replanting to soybeans was an option for some, but many farmers who initially planted corn had already applied a round of herbicide, which would likely damage or kill the soybean seed.

Flood-Related Crop Production and Marketing Issues

Transportation Infrastructure Damage. While spring flooding in the upper Midwest had caused problems for barge traffic earlier in the year, the extreme rain in June stopped navigation on a nearly 300-mile stretch of the Mississippi River.[6] Major parts of the rail network in the Midwest were damaged, and several major highways in Iowa were temporarily closed. The transportation infrastructure damage resulted in significant delays as grain shipments were rerouted and repairs were underway. By July 6, the Mississippi River had re-opened to commercial traffic, but substantial delays persisted. As a result, many shipments of corn and soybeans were still being rerouted to Texas Gulf ports.

Agricultural Processing and Storage Facilities Disruptions. The flood waters partially submerged many grain elevators and storage facilities, as well as two ethanol plants in Iowa. However, the main damage to agricultural marketing and processing facilities located in the flood-affected region was economic and primarily attributable to delays in the arrival of primary commodity shipments due to the transportation infrastructure damage. Many grain elevators, ethanol plants, soybean crushing plants, and other agricultural processing facilities were temporarily

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[4] (...continued)
Keith Good, *FarmPolicy.com*, June 20, 2008.

[5] See *Corn survival in flooded or saturated fields*, and *Planting and replanting scenarios*, ICM, ISU Extension, available at [http://www.ipm.iastate.edu/ipm/icm/2007/4-30/flooded.html] and [http://www.ipm.iastate.edu/ipm/icm/2007/6-4/replant.html].

[6] "Midwest Flooding Affects River, Rail, and Road Traffic," *Grain Transportation Report*, Agricultural Marketing Service, USDA, June 26, 2008. For more information about barge transportation on the Mississippi River, see CRS Report RL32470, *Upper Mississippi - Illinois Waterway Navigation Expansion: An Agricultural Transportation and Environmental Context*, coordinated by Randy Schnepf.

closed or operating at reduced capacity in the weeks immediately following the floods. The Iowa Renewable Fuels Association initially estimated that more than 300 million gallons (annualized) of ethanol production capacity were off line on June 13.[7] In addition, several grain elevators and other types of storage facilities located within the flood zone were damaged. The number of grain elevators damaged and the potential volume of corn and soybeans stocks lost is not yet available but is being evaluated by USDA.

Livestock Losses and Disposal Issues. The suddenness of the floods across eastern Iowa resulted in the deaths of possibly thousands of head of livestock, particularly hogs, although no officially tally is yet available.

Estimating Crop Losses for 2008

Outlook for Corn Yield. Corn yields in 2008 have already been negatively impacted by delayed planting, late emergence, and flooding and standing water in fields. Based on 1990-2007 data, the 2008 national average corn yield trend would be 154.7 bushels per acre. However, in its most recent forecast, USDA has adjusted the national average corn yield estimate downward 4% from trend to 148.4 bu./ac. to account for the combined effect of slow planting progress, unusually slow plant emergence, and a lower share of harvested area in the higher-yielding Corn Belt due to the flooding.[8] The American Farm Bureau Federation (AFBF) estimates that Iowa corn yields will likely be about 143 bushels per acre in 2008 compared with the pre-planting projection of 170 bushels per acre — a decline of nearly 16%.[9] AFBF further estimates that farmers who replant are likely to harvest corn yields of about 50% of normal due to the late replanting date.

However, final yields may still vary widely based on the extent of replanting and growing conditions through the remainder of the growing season. Timely rainfall and mild temperatures could still contribute substantially to the final output. USDA updates its crop production and market supply and demand estimates monthly.[10] USDA's first crop production estimates based on actual field cuttings will be released on August 12, 2008.

Outlook for Corn Harvested Acres. USDA's first projection for 2008 U.S. planted and harvested corn area of 86.0 and 78.8 million acres, respectively (released in the May 9 WASDE report), was based on a March survey of producers' planting intentions adjusted for historical abandonment rates and a derived demand for silage.

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[7] "Grain storage facilities take hit from flooding," by Tim Hoskins, *Minnesota Farm Guide*, July 3, 2008.

[8] *World Agricultural Supply and Demand Estimates (WASDE)*, World Agricultural Outlook Board (WAOB), USDA, July 11, 2008.

[9] "Corn yield could fall 27 bushels to average 143 per acre," by Dan Piller, *DesMoinesRegister.com*, June 27, 2008.

[10] USDA *Crop Production* reports are available at [http://www.nass.usda.gov/]; *World Agricultural Supply and Demand Estimates (WASDE)*, at [http://www.usda.gov/oce/commodity/wasde/index.htm].

However, widespread flooding of prime cropland in June is expected to result in either more abandoned acres or more acres harvested for silage.[11] USDA's June 30, 2008, *Acreage* report detailed state-level estimates of planted and harvested area for major U.S. crops.[12] The new data suggested that 87.3 million acres had been planted to corn (down 7% from 93.6 million in 2007 but still the second-largest since 1946) and 74.5 million acres to soybeans (up 17% from 2007 and third-largest on record). However, the data also suggested that a larger than normal share of planted acres would be abandoned — much of it in the prime growing areas of the Corn Belt. Thus harvested area for corn and soybeans were projected at 78.9 million and 72.1 million acres, respectively (**Tables 1** and **2**).

An examination of the implied state-level abandonment rates compared to the recent eight-year average abandonment rates suggests that over 1.7 million acres planted to corn were lost in Iowa, Illinois, Indiana and Missouri (**Table 1**). However, projected below-average abandonment rates throughout the remainder of the Corn Belt, particularly in Nebraska, Kansas, South Dakota, Ohio, and in lower-yielding non-Corn Belt states offset nearly 1.4 million of the lost acres. Applying the same abandonment rate comparison to soybeans suggests that projected area loss related to bad weather and flooding amounts to nearly 1.4 million acres in the Corn Belt, partially offset by 184,000 acres of below-normal abandonment in non-Corn Belt states (**Table 2**).

Most of the survey data for the *Acreage* report was collected during the first two weeks of June prior to the worst flooding. In response to the changed circumstances, USDA re-interviewed a smaller sample of 1,150 farmers in the flood-affected areas of Illinois, Indiana, Iowa, Minnesota, Missouri, and Wisconsin on June 23-25, to supplement the earlier survey data in deriving estimates of abandoned and harvested acres. USDA also announced that it would conduct a more thorough follow-up survey of farmers' harvesting intentions in mid-July, when it would re-interview approximately 9,000 farmers in the flood-affected areas.[13] USDA stated that under a return to normal weather conditions, by mid-July most flooded fields would be dry and affected farmers would be better able to assess their options. Data obtained from the mid-July re-interviews will be incorporated into USDA's August *Crop Production* and *WASDE* reports.

The Federal Response

Designated Disaster Areas. The President is authorized — by the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Stafford Act) — to issue major disaster or emergency declarations in response to catastrophes that

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[11] "Stocks and Acreage Exceed Expectations," Univ. of Illinois Extension, *Weekly Outlook*, June 30, 2008; at [http://www.farmdoc.uiuc.edu/marketing/newsletters.html].

[12] *Acreage*, National Agricultural Statistics Service (NASS), USDA, June 30, 2008; at [http://www.nass.usda.gov/].

[13] "USDA Report Assesses 2008 Corn and Soybean Acreage," USDA News Release, June 30, 2008; at [http://www.nass.usda.gov/Newsroom/2008/06_30_2008.asp].

overwhelm state and local governments.[14] Iowa, with 78 of its 99 counties declared a federal disaster area, appeared to be the hardest hit by the storms and flooding. However, counties in Indiana (44 counties), Illinois (24), Minnesota (4), Wisconsin (30), Nebraska (53), as well as West Virginia (18), were also identified as primary disaster areas related to the spring floods (**Figure 2**).[15]

A Presidential declaration results in the distribution of a wide range of federal aid to individuals and families, certain nonprofit organizations, and public agencies in the designated areas. Congress appropriates money to the Disaster Relief Fund (DRF) for disaster assistance authorized by the Stafford Act, which is administered by the Federal Emergency Management Agency (FEMA) within the Department of Homeland Security (DHS). Appropriations to the DRF remain available until expended. However, DRF funds are not available to cover agricultural production losses. Instead, USDA offers several permanently authorized programs to help farmers recover financially from a natural disaster, including federal crop insurance, the non-insured assistance program (NAP), and emergency disaster loans.[16]

Agricultural Assistance. USDA is actively engaged in committing resources to the flood response. In this regard, USDA has undertaken a broad range of activities in the flood-affected areas including rescue and clean up, food assistance, housing, community assistance, business assistance, and farmer and rancher assistance.[17]

Congress has appropriated nearly $480 million in emergency funding specifically targeted to 2008 Midwest flood response activities as part of the FY2008 Supplemental Appropriations Act (P.L. 110-252). This funding is available for eligible farmers to defray the cost of clean-up and rehabilitation of farmland and watersheds following a disaster.[18] Of the total amount available, $89.4 million is for the Emergency Conservation Program, which assists farmers in the cleanup and restoration of farmland damaged by a natural disaster, and $390.5 million is for the Emergency Watershed Protection Program, which is designed to relieve imminent hazards created by natural disasters and to alleviate future flood risk.

The 2008 farm bill (P.L. 110-246) included provisions that authorized and funded a new four-year supplemental revenue crop disaster program (for crop years

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[14] For more information see CRS Report RL33053, *Federal Stafford Act Disaster Assistance: Presidential Declarations, Eligible Activities, and Funding*, by Keith Bea; CRS Report RL31734, *Federal Disaster Recovery Programs: Brief Summaries*, by Mary Jordan; and CRS Report RL34146, *FEMA's Disaster Declaration Process: A Primer*, by Francis X. McCarthy.

[15] Midwest Flood Response and Recovery, at [http://www.usa.gov/flooding.shtml].

[16] For more information, see CRS Report RS21212, *Agricultural Disaster Assistance*, by Ralph M. Chite.

[17] For a list of USDA flood-related activities, see "Midwest Flood Response USDA Actions," Release No. 0163.08, updated on July 1, 2008, at [http://www.usda.gov/safety].

[18] For more information, see CRS Report RS21212, *Agricultural Disaster Assistance*, by Ralph M. Chite.

2008-2011).[19] However, without advance payments, no emergency supplemental disaster assistance for 2008 crop and livestock losses will be available before October 2009. This is because — according to the farm bill disaster program's design — the payment formula used to determine the level of payments for 2008 crop and revenue losses is based on national average market prices which will not be known until Fall 2009. USDA claims that it does not have the authority to make advance payments. Some policymakers want to amend the farm bill to require USDA to make advance payments, while several farm groups contend that USDA already has the flexibility and should exercise its authority.

USDA has also been under considerable pressure from Members of Congress and groups representing the livestock, biofuels, and agricultural processing sectors to do more to bring high commodity prices down — corn and soybean products are important ingredients for those industries. Among other things, these groups have called for the Secretary of Agriculture to announce a penalty-free release of acreage presently under long-term contract in the Conservation Reserve Program (CRP)[20] and for the EPA Administrator to announce a waiver of the Renewable Fuels Standard which mandates an increasing minimum use of biofuels in the national fuel supply.[21] Flood-related crop production concerns have added to this pressure and have perhaps contributed to the USDA decision on July 7, 2008, to announce that permission is granted in both presidential disaster and contiguous counties to use CRP land for grazing only.[22]

Potential Market Implications Due to Flood Losses

As mentioned earlier, the United States and world markets have experienced tight supplies and record high prices during the first half of 2008.[23] Most long-term forecasts project prices for feed grains and oilseeds — as well as those crops that compete for area with feed grains and oilseeds — to remain at significantly higher levels than experienced during the recent 1998-2006 period.[24] The main factors behind higher long-term prices are projections for a steady rise in global population, accompanied by steady income growth in the world's developing economies, which

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[19] For more information, see CRS Report RL34207, *Crop Insurance and Disaster Assistance in the 2008 Farm Bill*, by Ralph M. Chite.

[20] For more information, see CRS Report RS21613, *Conservation Reserve Program: Status and Current Issues*, by Tadlock Cowan.

[21] For more information, see CRS Report RL34265, *Selected Issues Related to an Expansion of the Renewable Fuel Standard (RFS)*, by Brent D. Yacobucci and Tom Capehart.

[22] "USDA Releases CRP Land in Flood Regions for Grazing," Release No. 0179.08, July 7, 2008.

[23] For more information, see CRS Report RL34474, *High Agricultural Commodity Prices: What Are the Issues?*, by Randy Schnepf.

[24] For examples of long-term agricultural forecasts, see *U.S. Baseline Briefing Book*, Food and Agricultural Policy Research Institute, FAPRI-MU Report #03-08, March 2008, at [http://www.fapri.missouri.edu/outreach/publications/2008/FAPRI_MU_Report_03_08.pdf]. See also "Agricultural Baseline Projections," Economic Research Service, USDA, at [http://www.ers.usda.gov/Briefing/Baseline/].

combine to sustain growth in demand for livestock products and the feedstuffs (e.g., coarse grains and protein meals) needed to produce those products. In addition, the outlook for increased demand for agricultural feedstocks to meet large increases in government biofuel-usage policies, particularly in the United States and the European Union (EU), suggest that demand will increase strongly over the coming decade for corn (the primary feedstock for U.S. ethanol production), and vegetable oils (the primary feedstock for biodiesel production in the United States and the EU).

These long-run forecasts assume normal crop growing conditions and successful harvests. As a result, any deviation from normal growing conditions can be expected to have negative market repercussions and drive prices higher. The potential weather- and flood-related production losses to this year's U.S. corn and soybean crops are unwelcome news to the market and, if realized, are likely to contribute to higher commodity prices. Because the United States plays a dominant role in global corn and soybean markets, U.S. price changes transmit directly to the international marketplace.

In summary, if flood-related crop losses ultimately prove sufficiently large (to be determined at harvest time), they will likely contribute to higher commodity prices, thereby, adding to pressure on policymakers over concerns about consumer food price inflation, international food aid availability, and the soundness of policy that dedicates commercial agricultural crops to biofuels production, particularly corn used for ethanol.

Table 1. Estimated Corn Acres Lost Due to June 2008 Floods Based on Predicted Abandonment Rates

State	March[a]	June[b]		Abandonment		Implied Area Loss
	Planted	Planted	Harvested	2008	Ave: 2000-07	
	1,000 acres	1,000 acres		%	%	1,000 acres
Iowa	13,200	13,700	12,280	6.6	2.5	(553)
Illinois	12,600	12,300	11,500	6.5	1.3	(634)
Nebraska	8,800	9,000	8,750	2.8	5.0	198
Minnesota	7,600	7,800	7,250	7.1	7.0	0
Indiana	5,700	5,700	5,350	6.1	2.6	(199)
Ohio	4,650	4,650	4,200	9.7	15.3	260
South Dakota	3,900	4,100	3,900	4.9	10.0	209
Kansas	3,650	3,800	3,100	18.4	22.9	169
Wisconsin	3,350	3,350	3,150	6.0	6.8	28
Missouri	3,100	2,900	2,500	13.8	3.6	(295)
Michigan	2,250	2,400	2,150	10.4	18.1	185
Kentucky	2,350	2,350	2,080	11.5	11.4	(1)
North Dakota	1,230	1,230	1,150	6.5	7.0	6
Corn Belt	72,380	73,280	67,880	7.4	6.4	(722)
Non-Corn Belt	13,634	14,047	11,060	21.3	25.3	569
United States	86,014	87,327	78,940	9.6	9.3	(298)

Source: NASS, USDA.

a. *Prospective Plantings*, NASS, USDA, March 31, 2008.
b. *Acreage*, NASS, USDA, June 30.
c. Calculations are by CRS based on abandonment rate data.

Table 2. Estimated Soybean Acres Lost Due to June 2008 Floods Based on Predicted Abandonment Rates

State	March[a]	June[b]		Abandonment		Implied Area Loss[c]
	Planted	Planted	Harvested	2008	Ave: 2000-07	
	1,000 acres	1,000 acres		%	%	1,000 acres
Iowa	9,800	9,400	8,950	4.8	0.5	(406)
Illinois	8,800	9,100	8,600	5.5	0.5	(452)
Minnesota	7,100	7,100	6,950	2.1	1.7	(32)
Indiana	5,500	5,500	5,200	5.5	0.5	(271)
Missouri	5,200	5,300	5,000	5.7	1.2	(237)
Nebraska	5,000	4,750	4,700	1.1	1.2	8
Ohio	4,500	4,600	4,580	0.4	0.5	3
South Dakota	4,100	4,100	4,040	1.5	1.4	(1)
North Dakota	3,550	3,400	3,340	1.8	2.3	20
Kansas	3,200	3,200	3,100	3.1	5.1	64
Michigan	2,000	1,900	1,890	0.5	0.7	3
Wisconsin	1,650	1,650	1,560	5.5	2.1	(56)
Kentucky	1,330	1,330	1,320	0.8	1.2	6
Corn Belt	61,730	61,330	59,230	3.4	1.2	(1,384)
Non-Corn Belt	13,063	13,203	12,891	2.4	3.8	184
United States	74,793	74,533	72,121	3.2	1.6	(1,245)

Source: NASS, USDA.

a. *Prospective Plantings*, NASS, USDA, March 31, 2008.
b. *Acreage*, NASS, USDA, June 30.
c. Calculations are by CRS based on abandonment rate data.

Table 3. Corn Area, Yield, and Production, U.S. and Corn Belt, Averages for 2002-2007

State	Major Crops[a] Total Planted Area	Corn						
		Acreage			Yield	Production	Ave. Farm Price	Value of Production
		Planted	Harvested	Abandonment				
	1,000 acres			%	bu./ac.	Million bu.	$/bu.	$ Million
Iowa	24,658	12,600	12,281	2.5	162.6	2,002	2.40	4,906
Illinois	23,337	11,606	11,450	1.3	157.9	1,812	2.51	4,656
Nebraska	18,927	8,419	8,000	5.0	147.4	1,182	2.44	2,942
Minnesota	19,764	7,363	6,844	7.0	152.3	1,043	2.33	2,461
Indiana	12,340	5,763	5,610	2.6	150.4	845	2.50	2,138
Ohio	10,201	3,413	3,180	6.8	142.5	454	2.49	1,142
South Dakota	17,103	4,444	3,765	15.3	111.8	425	2.27	975
Kansas	23,045	3,381	3,044	10.0	129.1	395	2.54	1,016
Wisconsin	8,039	3,675	2,835	22.9	135.6	385	2.43	949
Missouri	13,856	2,931	2,825	3.6	130.3	369	2.47	921
Michigan	6,525	2,275	2,015	11.4	127.8	257	2.44	638
Kentucky	5,575	1,236	1,150	7.0	134.0	154	2.62	406
North Dakota	21,578	1,511	1,238	18.1	114.3	142	2.28	355
Corn Belt	204,946	68,616	64,236	6.4	147.0	9,467	2.44	23,506
Non-Corn Belt	117,844	12,307	9,191	33.6	126.1	1,159	2.75	3,182
United States	322,790	80,923	73,428	10.2	144.4	10,625	2.46	26,688

Source: National Agricultural Statistics Service, USDA, Online Agricultural Statistics Database, July 9, 2008.
Note: States are ranked by average production for the six-year period.
a. USDA defines major crops as barley, corn, cotton, millet, oats, peanuts, rapeseed, sunflower, rice, rye, sorghum, and wheat.

Table 4. Soybean Area, Yield, and Production, U.S. and Corn Belt, Averages for 2002-2007

State	Major Crops[a] Total Planted Area	Soybeans						
		Acreage			Yield	Production	Price	Value of Production
		Planted	Harvested	Abandonment				
	————1,000 acres————			%	bu./ac.	Million bu.	$/bu.	$ Million
Iowa	24,658	10,213	10,165	1.4	46.4	470	6.36	2,937
Illinois	23,337	9,981	9,929	0.3	44.6	442	6.45	2,777
Minnesota	19,764	7,138	7,019	0.8	39.6	277	6.15	1,681
Indiana	12,340	5,463	5,434	0.9	46.3	252	6.34	1,558
Nebraska	18,927	4,650	4,593	1.5	44.9	206	6.02	1,234
Ohio	10,201	4,481	4,459	1.3	42.4	2	6.24	1,181
Missouri	13,856	4,981	4,923	1.1	36.7	181	6.27	1,119
South Dakota	17,103	4,075	4,016	0.8	33.8	135	5.94	791
North Dakota	21,578	2,940	2,871	0.8	31.6	90	5.89	545
Kansas	23,045	2,825	2,680	0.5	30.1	82	6.21	505
Michigan	6,525	2,000	1,983	5.9	36.6	72	6.19	445
Wisconsin	8,039	1,578	1,545	23.0	38.8	60	6.04	355
Kentucky	5,575	1,253	1,238	1.1	39.1	49	6.43	303
Corn Belt	204,946	61,576	60,857	1.2	41.2	2,503	6.24	15,403
Non-Corn Belt	117,844	11,185	10,767	3.9	32.4	349	6.16	2,153
United States	322,790	72,763	71,623	1.6	39.8	2,852	6.25	17,584

Source: National Agricultural Statistics Service, USDA, Online Agricultural Statistics Database, July 9, 2008.
Note: States are ranked by average production for the six-year period.
a. USDA defines major crops as barley, corn, cotton, millet, oats, peanuts, rapeseed, sunflower, rice, rye, sorghum, and wheat.