

# 10 Lessons for Agriculture after Hurricane Katrina



The images of Hurricane Katrina's devastation along the Gulf Coast continue to haunt us all. Gulf Coast farmers and shrimpers may never fully recover from the loss of their homes and livelihoods. But the impact of the storm goes well beyond the Gulf Coast and will likely be felt by farmers and consumers around the country for years to come.

The storm exposed some real vulnerability in the current agriculture system. Midwest agriculture has become strikingly dependent on fossil fuel and chemicals, as well as on the transportation of inputs from a small region of the country. From higher energy costs to a dearth of transport and storage for fertilizer and grain, Katrina reminds us of the fragility of our commodity networks. Drought in parts of the Midwest, excessive rain in other regions and hurricanes in the Gulf have triggered renewed concern about weather patterns and climate change. Many climatologists believe these severe weather incidences are on the rise. It is time to start thinking seriously about how to minimize our economy's vulnerability to these disruptions.

Unfortunately, there are already disturbing signs that plans to rebuild the Gulf Coast will simply reconstruct the old, fragile system, rather than promote more diverse and resilient agricultural production and distribution systems. As we recover from the tragedy of Katrina, we have an opportunity to rebuild and rethink how to strengthen agriculture, regional economies and the transportation and production infrastructure. Below are 10 areas of vulnerability exposed by Katrina that sorely need sensible policies and federal leadership:

**1. Energy.** Almost every aspect of agricultural production now relies on fossil fuel inputs—diesel for the tractor, petrochemicals in pesticides and herbicides, or natural gas in fertilizer. Sixty years ago, farmers were largely independent from big oil. It may be time to ramp up on-farm energy production. Biofuels such as ethanol and biodiesel are part of the solution, as is wind energy, biomass for heat and power, and manure digestion. Together, these alternatives could help create a buffer against price fluctuations of fossil fuels.

**2. Fertilizers.** As nitrogen prices follow natural gas prices, manure and legumes have become more attractive options for getting nitrogen into soil. Farmers are also paying more attention to university nutrient recommendations, but to lessen this natural gas dependence truly will require more research and development into less nitrogen-dependent crops, higher valuation of natural fertilizers such as manure, more sophisticated cropping rotations, and cover crops.

**3. Transportation.** Rail and barge transportation networks are vital for U.S. farmers to reach domestic and international markets. But today, because federal policies have severely reduced Midwest grain storage capacity, farmers are excessively dependent on high-functioning transportation networks. Any kink in the system can sharply reduce grain prices. Some policymakers are advocating for the extension of Mississippi River locks in the recovery appropriations. This is the policy equivalent of rearranging the deck chairs on the Titanic. Barge traffic on the Mississippi has declined in recent years as West Coast port traffic has surged to serve emerging Asian markets more efficiently. American farmers are better served by maintaining diverse market options—including viable regional markets, local storage capacity and more efficient rail and barge networks.

**4. Domestic markets.** Even if Midwest grain prices were consistently lower than Brazilian and Argentinean competitors, producing low-value commodities has long been discredited as a ticket to rural prosperity. Large government expenditures are dedicated to maximizing corn and soybean production, upgrading transportation networks to international ports, prying open foreign markets—and then providing federal support for farmers because these markets do not provide an adequate return. In our effort to capture international markets, we've effectively ignored many valuable domestic food markets. As a result, it is projected that the U.S. will be a net food importer within the next few years.

Low-value commodity production is not an inevitable direction for Midwest agriculture. Not long ago, the majority of Americans' food and energy needs were pro-

duced regionally. While most people are not interested in returning to the 1940s, that is not necessary. The explosion in technological advances in bio-based products, extending growing seasons for produce and even innovations in grass-fed livestock and milk production are contributing to some very promising domestic markets. Legislation like country of origin labeling will only help Midwest farmers recapture these markets.

#### **5. Markets for crops less dependent on inputs.**

Current corn production methods work great when natural gas is cheap and the demand for international feed is high. These factors came together perfectly for corn farmers in 1995—but since then, there have been more bad years than good, and no turnaround in sight. Katrina demonstrates why putting all of our eggs into this basket is not sound policy: We can sharply reduce input costs by developing opportunities in grass-fed livestock, longer crop rotations and other diversification techniques. A growing number of farmers are incorporating crops like perennial flax and barley into rotations. These entrepreneurial practices need further encouragement.

#### **6. Biofuels, bioplastics and other material production from crops.**

If ever there were a time to reduce U.S. dependence on fossil fuels and promote domestic energy production, this is it. Significant advances in cellulosic ethanol technology—using common plant material like stalks and stems to produce fuel rather than grain starches or sugars—have made a future where fuel is derived from Midwest prairie grass a real possibility. Bio-based plastics, fabrics and building materials have also become very cost-effective alternatives to fossil fuel based products. The rural economic development potential of these technologies is enormous.

**7. CAFO regulation.** There is no quicker way to turn the public against agriculture than to convert rivers into flowing manure discharges. Parts of North Carolina are still trying to recover from the lagoon failures after Hurricane Hugo, and we have yet to learn how badly the Gulf Coast has been harmed from damaged poultry confinement operations. There are better ways to raise animals, particularly in floodplains. Stricter regulation and enforcement of CAFOs will provide more market opportunities for pasture-raised livestock and poultry.

**8. On-farm water storage.** In the eastern United States, agricultural water management is all about moving water downstream. Midwest tile drainage gets rainwater out of the fields quicker. Streams have been straightened

to increase flow and floodplain levees were constructed to keep rivers in their channel. This system works well sometimes, but it can also fail catastrophically, such as the Minnesota River flood of 1997, the Upper Mississippi River flood of 1993 and the enormous Lower Mississippi River flood of 1927.

One of the best protections against flooding is to slow down the flow of water and let it percolate into the soil. Instead of pushing water off of farm fields, farmers can allow fields to flood, thereby reducing impacts on downstream communities. Many farmers are willing to do this, but they need compensation for this type of flood protection. Trees, shrubs and perennial grasses can withstand occasional flooding, while also generating some income. A nonstructural flood management policy is a simple, cost effective method of reducing the risk of flood.

**9. Valuing the commons.** We all benefit from a healthy, functioning Mississippi River and Gulf of Mexico, yet our penny wise, pound foolish approach to Gulf shore development jeopardizes resources tremendously. Will the Gulf shrimping industry—and the massive New Orleans tourism industry that thrives on fresh seafood ever fully recover? Although the cost of saving the vanishing wetlands of coastal Louisiana may seem exorbitant, the benefits they provide all of us are enormous and go far beyond storm protection.

**10. Climate change.** Of course, having the U.S. sign onto the Kyoto Protocol would not have stopped Katrina. But burying our head in the sand about climate change will come back to haunt us again and again. The U.S. needs to demonstrate international leadership on climate change by reducing its greenhouse gas emissions. We also need to better prepare for future major weather disturbances so U.S. citizens—and the U.S. economy—aren't so vulnerable.

There is no silver lining to a disaster like Hurricane Katrina. But there are lessons to be learned. The damage Katrina caused should be a wake up call from collective policy apathy. The dominant course of Midwest agriculture—toward larger, energy-intensive, export-oriented farming systems—shows every indication it is headed toward a dead end. There are other options available. We can actively lay the groundwork of research and development that will make these options profitable, or we can passively let the next disaster make those decisions for us.