



# FARM BILL

## **PROTECTING ENVIRONMENTAL COMPLIANCE PROGRAMS**

A PUBLIC HEALTH  
**PRIORITY**

JOHNS HOPKINS  
Center for a Livable Future

# PROTECTING ENVIRONMENTAL COMPLIANCE PROGRAMS

## A PUBLIC HEALTH PRIORITY

### Who We Are

Based within the Bloomberg School of Public Health, The Johns Hopkins Center for a Livable Future (CLF) is an academic center that conducts and promotes research and communicates information about the complex interrelationships among food production, diet, environment and human health. The Center investigates these issues, and advocates on behalf of policies to protect the public's health and the environment, enhance food system sustainability, and increase food security. Improving the "Farm Bill" is a major priority for the CLF.

### OUR POSITION:

As Direct Payments, a form of "farm subsidies," are phased out of the Farm Bill, CLF supports the continuation and enforcement of environmental compliance programs by linking them to other surviving safety net programs, especially crop insurance subsidy programs."

### Introduction

The Farm Bill is the primary piece of legislation addressing food and agriculture in the United States.<sup>1</sup> By shaping the production and conservation practices on U.S. farms, including the types of crops grown and where they are planted, the Farm Bill exerts a powerful influence on our environment and the kind of food available for consumption, and therefore influences public health. While the Farm Bill contains several conservation programs that directly incentivize healthier and more sustainable production practices, in many ways its most far-reaching conservation incentive is the attachment of conservation requirements to Direct Payments, a form of "farm subsidies," that require farmers to implement certain environmental measures in order to be eligible for payments.<sup>2</sup> As legislators prepare to phase out Direct Payments and grow the crop insurance subsidy programs in the 2012 Farm Bill, these measures are at risk. These environmental conservation measures—and public health—could be protected, however, by linking them to other programs expected to persist, particularly federal crop insurance subsidies. Crop insurance subsidies are government payments to cover a percentage of farmers' crop insurance premiums.

# What Is Environmental Compliance?

Several USDA programs offer benefits to farmers on the condition that they meet certain standards of environmental protection on highly erodible land and wetlands. Failure to comply with these provisions could mean the loss of benefits. Among this suite of benefit programs tied to environmental compliance, Direct Payments, a form of “farm subsidies,” make up nearly half of the funds.<sup>2</sup> USDA estimates that the overall value of Farm Bill benefits subject to environmental compliance between 1997-2007 ranged from \$11.7 billion to \$27.3 billion.<sup>3</sup>

The environmental compliance requirements were enacted originally as part of the 1985 Farm Bill in an effort to address concerns that commodity programs and conservation programs were working against each other. For example, while conservation programs were designed to encourage farmers to conserve soil and other environmental resources, other programs such as price supports and income payments provided incentives for farmers to expand crop production to highly erodible and environmentally sensitive land. While that contradiction persists, environmental compliance rules help to mitigate the problem.

## What are the components of environmental compliance?

### Conservation Compliance

- Requires farms currently operating on

highly erodible land (HEL) that was cropped before 1985 to implement and maintain Natural Resources Conservation Service (NRCS)-approved soil conservation systems. Over half of the conservation systems used includes some combination of conservation cropping, conservation tillage, and seasonal crop residue management.<sup>4</sup>

### Sodbuster

- Prohibits farms from converting HEL to crop production without applying an approved soil conservation plan. The requirements for converted lands are stricter than those for lands that were already cropped in 1985.<sup>4</sup> Given the costs of compliance, Sodbuster has both improved agricultural practices on HEL and helped keep noncropped HEL out of production.<sup>4</sup>

### Swampbuster

- Prohibits farms from producing agricultural commodities on wetlands converted after 1985 and from converting a wetland so as to make agricultural commodity production possible.<sup>2</sup>

Farmers who violate these requirements are subject to losing some or all Farm Bill benefits contingent on environmental compliance.<sup>2</sup>

The USDA views the Direct Payment Program as an effective compliance incentive because the payments are substantial (nearly \$5 billion per year), they cover a large share (71 percent) of cropland, and they are paid on an annual basis.<sup>2</sup> This is despite enforcement of these provisions being mixed. The number of spot-checks has fallen from 1.2 percent of farms (1993) to

0.6 percent of farms in 2006.<sup>5</sup> There is also indication that in some cases USDA/NRCS fails to enforce provisions.<sup>6</sup> However, rather than having to meet the expense of subsidizing conservation practices, environmental compliance provisions serve as a deterrent to environmentally damaging actions, and a relatively affordable way for USDA to protect marginal land.<sup>4</sup>

## How Can Environmental Compliance Measures Impact Public Health?

Environmental compliance measures aim to reduce soil erosion and conserve wetlands, ultimately serving to protect the public's health. Proper management of land and water can protect global food security; reduce exposure to hazardous chemicals and the spread of disease; and mitigate extreme weather events.

### Food Security

- Soil erosion—and loss of topsoil—occurs through natural processes such as exposure to wind and water,<sup>7</sup> and also through the farming of vulnerable lands and conventional agricultural production practices such as tilling.<sup>8</sup> By one estimate, 30 percent of U.S. farmland has been abandoned over the past 200 years due to erosion, salinization, and waterlogging.<sup>9</sup> Because the effectiveness of food production systems is linked very closely with soil quality, and because the global population is expanding, high quality soil is essential to global food security. Therefore, decreased productivity from soil erosion poses a significant threat to global food security.

- Current agricultural practices rely on synthetic fertilizer to meet the high demand for food production. Some fertilizer inputs, like phosphorous, are limited in supply. The unsustainability of synthetic fertilizer use in the long term may compound the effects of soil erosion and increase food insecurity.<sup>10</sup>
- As soil quality degrades, cropland has a reduced capacity to retain water, and thus requires additional irrigation efforts. This degradation increases both water depletion and the potential for droughts, and can affect food and water security.<sup>11</sup>

### Exposure to Hazardous Substances and Spread of Disease

- Healthy soil can suppress contaminants, but as soil quality degrades and contamination levels rise, there is only so much that soil can do. The outcome is an increased potential for contaminants to be transferred to plants, air, and water. As this transfer takes place, humans are more susceptible to contamination as toxic metals like lead can enter the body through skin contact, ingestion, and respiration.<sup>12</sup>
- Farmers often try to replenish nutrients lost through erosion by using fertilizers.<sup>13</sup> But when heavy rainfall erodes soil, the sediment that is washed away in runoff can carry with it the nutrients and chemicals applied to the farmland.<sup>14</sup> This represents a public health concern, as ingesting nitrates from fertilizer through drinking water has been associated with cancer, “blue baby syndrome,” and adverse reproductive outcomes.<sup>15,16</sup> Pathogens such as *Listeria* and *E. coli* from the application of non-composted manure to fields

can also enter waterways through runoff, creating the potential for serious disease outbreaks.<sup>17</sup>

- Nutrients from fertilizer runoff also contribute to harmful algal blooms.<sup>18,19</sup> Cyanobacteria, for example, creates cyanotoxins, which can harm humans both through recreational water activities and drinking water; these are linked to stomach illness, allergic reactions, liver damage, neurological symptoms, and cancer.<sup>20,21,22</sup> Cyanotoxins have been implicated in human and animal disease incidents in at least 36 states.<sup>22</sup> Toxins from harmful algal blooms are also linked to seafood poisoning in humans, including paralytic and neurotoxic shellfish poisoning.<sup>23,24</sup>
- Pesticides in ground water, and in turn, drinking water, also pose a concern, particularly to children and pregnant women.<sup>25</sup> Pesticide exposure has been associated with several types of cancer, as well as neurologic and reproductive health problems.<sup>11,26</sup> U.S. Geological Survey research found that at least one pesticide compound was identified in over 50 percent of shallow groundwater wells sampled, and 33 percent of deeper wells that tap aquifers.<sup>27</sup>
- Wetlands serve as a water purifier by filtering nutrients, toxins, and sediment from water. The destruction and degradation of wetlands as a result of agricultural practices can significantly impair all of these services.<sup>28</sup> As of 2009, the lower 48 states contained around 110.1 million acres of wetlands.<sup>29</sup> Between 2004 and 2009, U.S. wetlands decreased by 62,300 acres and the rate of wetlands

loss increased by 140 percent.<sup>29</sup> By 1990, 22 U.S. states had lost at least 50 percent of their wetlands since 1780.<sup>30</sup>

## Mitigating Extreme Weather Events

- Soil quality has a direct impact on climate change, by two distinct pathways. First, soil acts as a carbon sink that sequesters fossil fuel emissions in the organic material that is part of healthy soil.<sup>30</sup> As soil health is diminished, however, carbon sequestration is compromised.<sup>31</sup> Second, nitrogen fertilizers used in agriculture contribute to climate change because they require significant amounts of energy for production,<sup>32</sup> and they emit nitrous oxide, one of the most potent greenhouse gases, once applied to the soil.<sup>33</sup> Climate change not only impacts food and water security; it has also been linked to infectious disease proliferation, respiratory problems, heat stress, and other health issues.<sup>34</sup>
- Wetlands play an important role in preventing flooding. With flooding reported as the most common natural disaster in the U.S.,<sup>35</sup> the role of wetlands in reducing the frequency and intensity of floods is critical to public health. Flooding both causes direct threats like drowning and injuries, and is associated with water contamination, communicable disease, respiratory illness, and social disruption.<sup>36</sup> In 2011 alone, flooding cost the U.S. more than \$8 billion in damages and claimed at least 113 lives.<sup>37</sup>

When properly enforced, conservation practices such as those implemented under Conservation Compliance and Sodbuster

requirements can significantly reduce soil erosion. Research by the USDA's Economic Research Service found that about 25 percent of the reduction in soil erosion that occurred between 1982 and 1997 could be attributed to the practices associated with conservation compliance requirements.<sup>4</sup>

Additionally, Swampbuster has successfully worked to help prevent farmers from draining wetlands, with USDA estimates suggesting that between 1.5 million and 3.3 million acres of wetlands have been protected by the provisions.<sup>2</sup>

## How Much Land Is At Stake If Congress Eliminates Direct Payments?

Direct Payments may be excluded from the 2012 Farm Bill, effectively ending the conservation requirements linked to the payments. While farmers receiving funds under conservation programs (See CLF's brief, *Working Lands Conservation Funding—A Public Health Priority*, for more information) would still be required to use conservation techniques, about 174 million acres of land (44 percent of U.S. cropland) that received direct payments but not conservation program payments would no longer be covered.<sup>2</sup> If Direct Payments are eliminated it will be crucial to link environmental compliance requirements to other safety net programs, such as crop insurance subsidies, not only to recapture and protect these farmlands, but also because it is predicted that crop insurance programs will become the cornerstone of the farm safety net.

For a more detailed visual representation of compliance requirements by acreage see: [http://www.ers.usda.gov/media/361085/eib94\\_2\\_.pdf](http://www.ers.usda.gov/media/361085/eib94_2_.pdf)

## We Need a Safety Net for the Environment

Investment in crop insurance subsidies is often presented as a way to maintain a farm safety net. Crop insurance protects farmers from losses due to extreme weather events, insects, disease, low yields, low prices, low quality, or any combination of these factors.<sup>38</sup> Crop insurance subsidies cover a similar commodity crop acreage to Direct Payments, and they also extend to some ranchlands and land used for producing fruits, vegetables, and other non-commodity crops. In addition to their role in protecting farmers, crop insurance subsidies can also be (as was the case until 1996) a vehicle to encourage environmental compliance.

Crop insurance subsidies are currently the only large Farm Bill program that are not subject to environmental compliance.<sup>2</sup> Once again tying crop insurance subsidies to environmental compliance represents a promising means of protecting sensitive lands. The USDA estimates that extending the provisions to crop insurance subsidies will allow 141 million acres of cropland previously covered through Direct Payments to still be subject to environmental compliance.<sup>2</sup>

Further, extending subsidies for crop insurance without linking them to environmental compliance presents a concern with regard to risk management. As mentioned, crop insurance seeks to protect farmers from extreme weather events like flood-

ing and drought. These types of weather events are expected to increase in intensity and frequency due to climate change.<sup>39</sup> Draining wetlands and farming on highly erodible lands both increases the vulnerability of cropland to these weather events and decreases carbon sequestration.<sup>40</sup> This suggests that extending crop insurance subsidies without also extending the environmental compliance requirement could mean higher payouts and increased costs for taxpayers.

## Conclusion

Thanks to the current rules tying environmental compliance to Direct Payments, hundreds of thousands of farmers across the U.S. are encouraged to protect wetlands and highly erodible croplands. If the upcoming Farm Bill excludes Direct Payments, it would also mean the end of the environmental compliance requirements attached to those payments. This would strike a significant blow to public health, as outlined in this brief. Soil erosion and loss of wetlands contribute to poor

water and soil quality, which, in turn, contribute to negative health impacts such as cancer, allergic reactions, and neurological and reproductive health problems. For this reason, the elimination of environmental compliance requirements poses a distinct public health concern. The next Farm Bill should seek to extend these provisions to federal crop insurance subsidy programs and strengthen enforcement of the provisions across all USDA programs.

**As Direct Payments, a form of “farm subsidies,” are phased out of the Farm Bill, CLF supports the continuation and enforcement of environmental compliance programs by linking them to other surviving safety net programs, especially crop insurance programs.”**

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