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Conservation Compliance: How Farmer Incentives Are Changing in the Crop Insurance Era

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What Is the Issue?

Conservation Compliance provisions in Farm Bill legislation link farm program benefits to soil and wetland conservation. The Highly Erodible Land Compliance (HELC) provision requires farm program participants to apply approved soil conservation systems on cropland in fields designated by USDA as highly erodible. The Wetland Conservation (WC) provision requires farm program participants to refrain from draining wetlands. Farmers who fail to meet Compliance requirements risk becoming ineligible for most agriculture-related Federal benefits. Conservation Compliance is effective in reducing soil erosion and conserving wetlands when the incentive—the farm program benefits that could be lost due to noncompliance—exceeds the cost of meeting soil and wetland conservation requirements.

In this report, we address two broad questions. First, how have HELC requirements affected soil erosion over the past 30 years? Soil erosion was sharply reduced on cropland subject to HELC and not subject to HELC. How much soil erosion reduction can be attributed directly to HELC? Second, how did the 2014 Farm Act change incentives for meeting Conservation Compliance requirements? The 2014 Act ended Direct Payments, re-linked crop insurance premium subsidies to Compliance, and created several new commodity and crop insurance programs. In aggregate, farm program benefits under the 2014 Act could be as high or higher than under the 2008 Farm Act; but for individual farms, the shift toward a crop insurance-oriented policy could increase or decrease Compliance incentives.

What Did the Study Find?

Between 1982 and 1997, soil erosion reductions for cropland highly erodible for water were significantly larger in fields subject to HELC (39 percent, or 6.6 tons per acre) than those not subject to HELC (24 percent, or 3.9 tons per acre). For cropland highly erodible for wind, the difference was smaller: a reduction of 3.8 tons per acre (from land subject to Compliance) versus 2.3 tons per acre (from land not subject to Compliance). Soil erosion rates on highly erodible cultivated cropland were largely unchanged between 1997 and 2012.

Under both the 2008 and 2014 Farm Acts, the strength of Compliance incentives varies widely among farms because the level of farm program benefits subject to Compliance and the cost of meeting Compliance requirements vary among farms. Compliance incentives (farm program benefits subject to Compliance) also depend on crop prices. Most commodity payments are triggered by low prices or low revenue. Crop insurance premium subsidies, on the other hand, rise with crop prices because higher prices increase the value of the insured crop. We estimate farm-level Compliance incentives using three crop price scenarios:

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- In our “medium” price scenario (based on crop prices in 2010), an estimated 27 percent (25 million acres) of cropland in HEL fields is on farms where Compliance incentives are clearly large enough to offset the Compliance cost. Compliance incentives are relatively low on farms that include 28 percent (27 million acres) of land subject to HELC. Roughly 10 percent of cropland in HEL fields (9 million acres) is on farms that receive no Compliance incentives. A continuation of the 2008 Farm Act (as implemented in 2013) would have resulted in a similar distribution of Compliance incentives across cropland in HEL fields.
- In our “low” price scenario (based on crop prices in 2004), Compliance incentives are relatively large because commodity payments are larger. The 2014 Act delivers slightly stronger Compliance incentives than would have been realized under the 2008 Act because the crop prices that trigger some commodity payments are higher in the 2014 Act (e.g., the reference price for Price Loss Coverage) than in the 2008 Act (e.g., the target price for Countercyclical Payments).
- In our “high” price scenario (based on crop prices in 2013), Compliance incentives are similar to the medium-price scenario. Incentives are slightly higher under the 2008 Act because farmers received Direct Payments even when prices or revenue were high. Under the 2014 Act, crop insurance premium subsidies, which rise as crop prices rise, partially offset lower commodity payments at higher prices.

Crop insurance premium subsidies are an important part of Compliance incentives under the 2014 Act. Severing the link between Conservation Compliance and crop insurance premium subsidies would mean a 65-percent increase in the amount of highly erodible land on farms where Compliance incentives are relatively low. The change in Compliance incentives is much larger when crop prices (and premium subsidies) are high and much smaller when crop prices are low.

National results, however, mask significant changes in farm-level Compliance incentives. For example, in our medium-price scenario, 27 million acres (29 percent) of cropland in HEL fields are located on farms where Compliance incentives are at least 25 percent lower than they would have been under the 2008 Act (for example, portions of the Corn Belt). Conversely, roughly 18 million acres (20 percent) of cropland in HEL fields are on farms where Compliance incentives are at least 25 percent higher than they would have been under the 2008 Act (for example, much of the Northern Plains).

Severing the link between crop insurance and Compliance would increase the number of farms where Compliance incentives decline. In our medium-price scenario, when crop insurance premium subsidies are linked to HELC (as under the 2014 Act), less than 10 million acres of cropland in HEL fields are on farms that would experience a 50-percent or larger decline in Compliance incentives. If crop insurance premium subsidies were not subject to Compliance, more than 40 million acres of cropland in HEL fields would be on farms where overall Compliance incentives declined by 50 percent or more.

Data limitations restrict analysis of Wetland Conservation to the Prairie Pothole States (Iowa, Minnesota, Montana, North Dakota, and South Dakota), where WC incentives are strong. An estimated 75 percent of “potentially convertible” wetlands (with productivity similar to existing cropland) are on farms where Compliance incentives are very likely to be “high” under the medium-price scenario. About 10 percent of wetlands are on farms that do not receive benefits subject to Compliance sanction.

How Was the Study Conducted?

A statistical model is used to estimate the effect of Conservation Compliance on soil erosion reduction for land that is and is not subject to HELC. Data on soil erosion for specific “points of land” are available at 5-year intervals between 1982 and 2012 from the National Resources Inventory (NRI), conducted by USDA’s Natural Resources Conservation Service. The dataset includes only those NRI points that are located on tracts with commodity program base acreage that were continuously cropped during 1982-2012.

To estimate Compliance incentives for individual farms, a mix of survey, USDA administrative, and biophysical data is used. The NRI provides statistically reliable estimates of land subject to HELC and WC. Multiple USDA administrative and biophysical databases are used to estimate the strength of Compliance incentives, using two farm-level metrics: Compliance incentives per acre of land subject to Compliance (e.g., cropland in HEL fields or wetland) and Compliance incentives per acre of land subject to Compliance relative to the cropland rental rate (an upper bound on Compliance costs).