

CROP INSURANCE AND CLIMATE CHANGE

*BALANCING STRUCTURE AND FLEXIBILITY TO IMPROVE
ON-FARM MANAGEMENT OF CLIMATE RISK*

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EXECUTIVE SUMMARY

INTRODUCTION

Crop insurance has become an important tool for managing economic and environmental risk in the agricultural sector, and one of the largest sources of Federal subsidies to agricultural producers. This research examines the near- and long-term risks to agricultural producers, and seeks to identify and evaluate potential policy opportunities within the federal crop insurance program to improve the climate adaptation capacity of insured farms. The crop insurance program contains several structural barriers to sustainable, adaptive management practices, including a lack of soil and water conservation requirements common to other farm support programs (remedied in the Agricultural Act of 2014), and stringent planting date requirements which discourage farmers from using cover crops to protect their soil from erosion and enhance fertility, as well as diversify their farms (both economically and biologically) and increase climate resiliency.

POLICY RECOMMENDATIONS

1. Reinstate conservation compliance requirements for eligibility to receive federal subsidies towards crop insurance coverage (successfully passed in the Agricultural Act of 2014).
2. Provide farmers who plant cover crops with an additional “buffer” period after their policy’s final planting date to allow appropriate termination of the cover crop without jeopardizing the insurance coverage on their primary crop.

ANALYSIS & METHODS

To evaluate the economic impacts of requiring conservation compliance for eligibility to receive crop insurance subsidies, I constructed a cost benefit analysis at the national scale, including cash flows for the economy as a whole, the government, and affected farmers. My analysis focuses on the marginal impact of the program, quantifying only the marginal costs and benefits of implementing the program on farms which are not currently participating in any other Farm Bill programs requiring conservation compliance, and which will be coming under the compliance requirement for the first time due to their use of subsidized crop insurance. This eliminates all farms which would be subject to the requirement whether or not it was added to the crop insurance program, and thus more accurately quantifies the impact of the policy change within the context of other interrelated farm support programs.

Due to the lack of data from the field regarding the dynamics of planting date restrictions and cover cropping decisions, I could not construct a national-scale cost benefit analysis to evaluate

my second policy recommendation. I instead created a farm-scale cost benefit model to compare the performance of a commodity mono-crop with a dual, cover crop and commodity crop system. The model takes into account the unique economic, social, and biological attributes of the farm using yield, acreage, crop selection, planting dates, management practices, and insurance parameters to produce estimates of the costs and benefits at the farm level.

RESULTS

The results of my analysis show that conservation compliance, even under the most conservative scenario, provides a net benefit to farmers and to the economy as a whole for a comparatively modest initial investment on the part of farmers and the government. In my moderately conservative cost benefit analysis scenario, reinstating the conservation compliance requirements in association with crop insurance provides an incremental net benefit of at least \$4,411 per acre in present value terms, with over \$780 per acre of those benefits accruing to the farmer.

The cover crop analysis did not provide any generalizable results, however it does suggest that a buffer period within the planting date restrictions for farmers growing cover crops may help mitigate the risk of cover crops interfering with the profitability of farmers' primary commodity crop, and thus remove one of the barriers to adoption. I recommend a pilot test of this policy change, with rigorous measurement and evaluation of the impacts on farm revenue, insurance and subsidy payments, and environmental outcomes.

CONCLUSIONS

With impending near- and long-term threats of climate change, the crop insurance program should balance the need for rigid management requirements to ensure an appropriate baseline level of risk mitigation and management with the flexibility to allow farmers to experiment with new management practices to find what works best in their new climate context. The benefits of the conservation compliance requirement vastly outweigh the costs, and provide a cost-effective mechanism for improving adaptive capacity on already vulnerable agricultural lands. While the planting date buffer period is a promising mechanism for increasing the use of cover crops and improving farmers' capacity to develop new adaptive risk management strategies at the local level, additional research and field testing is needed to determine the impact of relaxing the constraint on actual adoption rates in the field.