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Ask an Ag Economist

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Ask an Ag Economist

What percentage of Iowa’s current row-crop farmer prosperity is the result of row-crop agriculture being completely unregulated in terms of water pollution, and therefore able to externalize water pollution costs? Installing new conventional pattern tiling, for example, raises crop yields but sends more polluted water into the drainage outlet (usually a river or lake). The farmer profits from the increased yield but pays nothing for the increased water pollution, which impacts society at large, since most rivers and lakes are public. Has any research been done on this question?

THE WRITER OF THIS question understands economics and the market failure associated with externalities very well. Thank you for such an informed and interesting question! The writer is quite correct that the fact that agriculture generates an externality (nutrient pollution) that is not priced or regulated creates an incentive for excessive nutrient runoff. Research on this question suggests that the increased price of corn associated with biofuels policy and crop shortages leads to increased planting of corn acreage, in turn resulting in increased nutrient runoff. Some research has gone as far as linking these effects with an increase in the size of the dead zone in the Gulf of Mexico.

However, the writer asks a deeper and more nuanced question: How much of farmer prosperity can be attributed directly to this unregulated externality? This is more difficult to answer, and depends on several factors related to how much of the cost associated with controlling nutrients would be passed on to consumers in the form of higher corn prices. This, in turn, depends on details of the regulation and the responsiveness of the demand for corn to price increases (the elasticity). A key detail of the regulation would be its breadth of coverage. For example, if Iowa farmers in only one county were subject to such a regulation, those farmers would not be able to pass the higher production costs on since they would be competing primarily with farmers who did not face regulation.

In contrast, a nationwide regulation that raised all costs uniformly would be most likely to result in higher corn prices to cover these costs. In the latter case, farm profits may not be much affected by addressing the externality, but the costs would instead be paid by end consumers.

Questions can be submitted to us through our web site (http://www.card.iastate.edu/ag_policy_review/ask_an_economist/).