



CONSERVATION BEST MANAGEMENT PRACTICES, COST-SHARE, AND WATER QUALITY TRADING PROGRAMS

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Should ALL reductions in nutrients and sediment resulting from the implementation of conservation best management practices (BMPs) partially paid for by federal or state cost-share funding be eligible for sale in a water quality trading program?

RECOMMENDATION: Water quality trading markets should encourage the participation of farmers who have received cost-share funding to implement BMPs. HOWEVER, the allowable nutrient and/or sediment reductions sold should be proportional to the farmer's contribution to the cost of implementing the BMP. The cost-share portion should be used to meet common watershed goals such as TMDLs.

One source of water quality improvements from agriculture is the implementation of BMPs on agricultural land. Examples include riparian buffer strips, cover crops, barnyard and roof runoff controls, terraces, grassed waterways, etc. These BMPs reduce nutrient (e.g., phosphorus and nitrogen) and sediment losses to local rivers and streams, which are sources of many water quality impairments in the United States.

Many of the BMPs implemented on agricultural lands are partially paid for by federal or state government conservation cost-share programs. This means the farmer does not pay the full cost of implementing the BMP.

Many states and watershed organizations are exploring performance-based programs, such as water quality trading, to improve water quality. A water quality trading program may allow regulated point sources (e.g., municipal wastewater treatment plants) to purchase nutrient and sediment reductions from farming operations to meet their permitted nutrient or sediment load discharge level.

The question has been raised about whether farmers who received cost-share funds for implementing a BMP and wish to participate in a water quality trading market should be allowed to sell:

- ALL the nutrient and sediment reductions associated with the BMP; or
- ONLY the portion of the nutrient and sediment reductions the farmer actually paid for.

This policy note focuses narrowly on this question, and does not discuss other issues related to water quality trading such as trading rules, baseline nutrient and sediment loads, point source cost-share payments, treatment of multiple environmental benefits from a BMP, etc.

THE FEDERAL GOVERNMENT POSITION

Even though the U.S. Department of Agriculture (USDA) does not have an official policy on this issue, it has indicated that it may be prepared to support allowing a farmer to sell 100 percent of the nutrient/sediment reductions from a BMP that the USDA has partially funded through cost-share programs.¹ The U.S. Environmental Protection Agency (USEPA), another federal agency interested in this issue, also does not have an official policy on the issue at this time.

1. See <http://www.nrcs.usda.gov/Programs/farmbill/2002/rules/eqip030210.html> for the proposed rule where NRCS is considering the possibility of waiving any and all interests in nutrient reduction credits that farmers generate using EQIP funds.

We have identified economic and ‘fairness’ reasons why supporting the sale of the cost-share portion of nutrient/sediment reductions is not the most appropriate policy for the USDA and other government agencies to adopt.

THE ECONOMIC ARGUMENT

Allowing farmers to sell all the nutrient and/or sediment reductions from a cost-share BMP into a water quality trading market will distort the market, leading to fewer environmental benefits at greater cost to taxpayers. It artificially lowers the market price of a nutrient/sediment reduction by paying some farmers twice for the same reduction. As a result, those farmers *not* receiving cost-share funds may choose to not participate in the market.

Table 1, below, illustrates how a farmer selling reductions paid for, in part, with cost-share funds can distort the market.

The price for phosphorus (P) reductions where Farmer A, who receives no cost-share funds, is able to break even is just under \$18.00/lb P in a water quality trading market. However,

Farmers B and C, who do receive cost-share funds and are also allowed to sell the cost-share portion of P reductions in the market, are able to break-even around \$9.00/lb P and \$4.50/lb P, respectively. Therefore, Farmer C who can offer the P reductions at the lowest price may drive the average market price down, discouraging Farmers A and B from participating in the market.

On the other hand, if farmers were only allowed to sell the portion of P reductions they paid for then all three farmers would break even at the same price—around \$18.00/lb P.

THE FAIRNESS ARGUMENT

Government conservation cost-share programs are aimed at improving the environmental condition of our agricultural lands and reducing the impact of farming practices on the environment (e.g., our rivers and streams). The funding for these programs comes from taxpayers and is justified on the basis that BMPs (which farmers partially pay to implement) create environmental improvements that benefit society at large.

TABLE 1 An illustrative example of how a water quality trading market can be distorted by allowing farmers to sell their cost-share portion of P reductions.

	 FARMER A	 FARMER B	 FARMER C
<i>Three farmers are implementing barnyard runoff controls to reduce P losses. Each farmer has the same cost, achieves the same level of P reductions, but has different cost-share rates.</i>			
Cost-share received to implement BMP	0%*	50%	75%
Total cost of implementing BMP	\$80,000	\$80,000	\$80,000
Amount farmer pays to implement BMP	\$80,000	\$40,000	\$20,000
P reduced each year by BMP	300 lbs	300 lbs	300 lbs
Life of BMP	15 years	15 years	15 years
P reduced over project life of BMP	4,500 lbs	4,500 lbs	4,500 lbs
Farmers allowed to sell their cost-share portion of P reductions in a water quality trading market			
Break-even P price	\$17.78/lb	\$8.89/lb	\$4.44/lb
Eligible P reductions for sale per year	300 lbs	300 lbs	300 lbs
Total eligible P reductions for sale	4,500 lbs	4,500 lbs	4,500 lbs
Farmers allowed to sell only the portion of P reductions they paid for in a water quality trading market			
Break-even P price	\$17.78/lb	\$17.78/lb	\$17.78/lb
Eligible P reductions for sale per year	300 lbs	150 lbs	75 lbs
Total eligible P reductions for sale	4,500 lbs	2,250 lbs	1,125 lbs
* Farmer A may not have been eligible for federal or state government conservation programs or may have applied to a conservation program but their application was unsuccessful.			

Allowing a farmer to sell both the out-of-pocket and cost-share portions of their nutrient and sediment reductions undermines the purpose of the conservation cost-share programs. In a water quality trading market, these reductions may be sold to regulated point sources to meet their permitted load allocation. Therefore, the reductions achieved through a government cost-share program result in NO net water quality improvement as these reductions are used to meet a regulated point source’s permitted load allocation.

In addition, allowing farmers to sell the cost-share portion of the reductions allows these farmers to unfairly profit from taxpayer money. The farmer receives monies for the same set of nutrient or sediment reductions from both the taxpayer (through the cost-share funds) and the point source that purchases the reductions.

A fairer use of the nutrient or sediment reductions that result from cost-share payments is to allow the benefits of these reductions to accrue to the community or society in general. These reductions could be used to meet common water quality goals, such as the proposed or existing USEPA Total Daily Maximum Load (TMDL) limits that many watersheds face.

Table 2 illustrates how common water quality goals are threatened by allowing the cost-share portion of a farmer’s P reductions to be sold in a water quality trading market.

When farmers are able to sell their cost-share portion of P reductions in a market, their break-even price is lower than the farmer with no cost-share funds. Regulated point sources are more likely to purchase reductions from Farmer C whose P price is lower.

In this case, Farmer C can afford to install the barnyard runoff controls whereas Farmer A may decide he cannot afford to install the BMP. Therefore, only 300 lbs of P is reduced each year, with all pounds potentially available to sell to a regulated point source. Therefore, there are no net improvements in water quality.

If farmers are able to sell only the portion of P reductions they paid for, then both Farmer A and Farmer C face the same break-even price (~\$18.00/lb P). Assuming that both farmers now find it in their interest to build the barnyard runoff controls, P losses will be reduced by 600 lbs per year. Approximately 375 lbs of P reductions can be sold to regulated point sources to meet their permitted load allocations and around 225 lbs of P reductions can accrue towards common water quality goals—arguably a better outcome for taxpayers and society.

TABLE 2 An illustrative example of how allowing farmers to sell the cost-share portion of their P reductions threatens common water quality goals.

<i>A point source has a permitted P load allocation. It is cheaper for the point source to meet this permitted load allocation by buying P reductions in a water quality trading market than upgrading their facility.</i>		
	FARMER A	FARMER C
Cost-share received to implement BMP	0%	75%
Farmers allowed to sell their cost-share portion of P reductions in a water quality trading market		
Break-even P price	\$17.78/lb	\$4.44/lb
Eligible P reductions for sale per year	300 lbs	300 lbs
P reductions farmer sells to regulated point source	0 lbs*	300 lbs
P reductions to meet common water quality goal	0 lbs	0 lbs
Farmers allowed to sell only the portion of P reductions they paid for in a water quality trading market		
Break-even P price	\$17.78/lb	\$17.78/lb
Eligible P reductions for sale per year	300 lbs	75 lbs
P reductions farmer sells to regulated point source	300 lbs	75 lbs
P reductions to meet common water quality goal	0 lbs	225 lbs
* In this scenario, Farmer A is priced out of the market and decides not to implement the BMP		

THE POTENTIAL OUTCOMES

The repercussions of allowing farmers to sell nutrient and sediment reductions paid for with federal or state cost-share funds in a water quality trading market include:

- Distorting price signals, leading to less cost-effective reductions in nutrients and sediment, and increasing the true cost to taxpayers.
- Giving farmers who receive cost-share funds an unfair advantage over other farmers in the market because they break even at a lower price.
- Lowering the number of farmers potentially undertaking conservation BMPs and therefore decreasing nutrient and/or sediment reductions in a watershed.
- Undermining the purpose of conservation programs by failing to achieve a net water quality benefit with cost-share funds.

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ACKNOWLEDGMENTS

The authors would like to thank the following reviewers for their constructive feedback and suggestions: Scott Macomber, Kari Cohen (USDA-NRCS), Rob Bradley, Paul Faeth, Janet Ranganathan, Jenny Guiling and Zachary Sugg. We would also like to thank the John D. and Catherine T. MacArthur Foundation for their support in publishing this Policy Note.

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