

MORE FEDERAL GOVERNMENT INVOLVEMENT IN SOIL CONSERVATION

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Historical Development of Conservation Funding

It is important to indicate at the outset that I do not intend to argue for more funding for soil conservation programs, but rather for more efficient use of the resources presently committed. Before we can go very far in evaluating the impacts of soil conservation spending changes, we need additional background on soil conservation programs. It is hoped that such information will tell us something about the objectives of the program and where opportunities for improved efficiency exist.

In the beginning, soil conservation was perceived as a profitable investment that was only limited by farmers' ignorance of the productivity costs of soil erosion. (2) Thus, if the early programs were capable of demonstrating the potential gains in long run income (through educational efforts, demonstration projects, and technical assistance), the farmer would then adopt conservation practices. Initially, cost-sharing was added to the soil conservation program to induce farmers to plant crops that were not in surplus. Coincidentally, the crops that were planted in response to these subsidies were soil-conserving crops such as legumes.

Thus the objectives of maintaining farm income and soil conservation were effectively integrated for farm policy purposes. During this early phase of the conservation program, it is important to reiterate, the advocates did not believe that conservation did not pay. Instead, they were pursuing a constitutionally acceptable means of maintaining farm incomes.

During and immediately after World War II, increased production became the goal of farm policy. In keeping with this focus, cost-sharing subsidies were expanded to include production-oriented practices. Even though farm surpluses were soon to return, the broadened focus of cost-share subsidies continued. During the 1950s and 1960s, production incentives were combined with off-setting programs, such as the Soil Bank, Cropland Conversion, and the Great Plains Conservation Programs, which reduced output while simultaneously retiring the most erosion-prone lands.

Finally, the 1970s period was an era of all-out production and “fencerow-to-fencerow” planting. More erosive lands were brought under cultivation, previous conservation practices were abandoned for various reasons, and cost-share subsidies declined in real dollar terms.

Also, during the 1970s, the nonpoint source pollution resulting from soil erosion was becoming a major concern and was addressed in the Federal Water Pollution Control Amendments of 1972 (FWPCA - 1972) and in the Rural Clean Water Program (RCWP). The rapidly growing export market for food and feed crops exacerbated the soil loss problem both from the point of view of soil productivity and environmental quality.

The 1980s have witnessed a renewed and overwhelming interest in the soil productivity issue, coupled with a waning interest in environmental quality as it relates to residuals from agricultural production. Yet increased budget-cutting pressure has led the administration to propose substantial cuts in cost-sharing funds for soil conservation, as well as various other federal conservation assistance programs. These proposed reductions have elicited a tremendous outcry from soil conservation interests, who are seeking a substantially expanded budget to attack soil loss. Not since the Dust Bowl days of the 1930s has concern for soil erosion been greater.

Economics of Conservation

Having exposed the historical development of soil conservation programs, I would like to say a word or two about the economics of soil conservation. In the long run, a strong economic argument cannot be made for federal funding to protect soil productivity. It is in the landowner's self-interest to maximize the return to the land investment.

Preliminary results of an Iowa study indicate that land purchasers do pay more for less eroded land and for land with less erosion potential. These premiums that they are willing to pay closely parallel the long term productivity differential. These findings are evidence that the land market is working to protect our productive wealth. Then, why do we continually hear the call for government intervention and assistance? Generally, the purported signs of market failure are short run phenomena: cost-price squeeze, insufficient credit and high interest rates, high land prices, and increasing tenancy. The important soil resource decisions are long run phenomena occurring in a dynamic environment. Soil conserving investments are not instantaneous, nor need they be. Topsoil formation is an on-going process that is frequently ignored. If we are losing productive capacity, this factor would be reflected in increasing prices for the remaining productive land.

There are a couple exceptions to the argument against intervention. One exception to this position, initially suggested by Ciriacy-Wantrup (1), is the need for a “safe minimum standard” for the protection of soil productivity. Given uncertainty surrounding future food demands

and supplies, this phenomenon is akin to an option demand for future productivity.

For example, Malthusians argue that technical change in agriculture is slowing and that our great strides of the past cannot be duplicated in the future. Thus to satisfy future food demands, more cropland would be needed. Although these individuals ignore the biotechnology revolution and its enormous potential in agricultural production, uncertainties concerning future productivity do persist.

The strongest argument for public intervention and funding for soil erosion control is for the protection of environmental quality. The market system does not account for off-site impacts of soil erosion; the market fails to recognize the externalities associated with erosion. Such impacts may destroy fish and wildlife habitats, reduce recreational opportunities and flood protection, increase water treatment costs, and eliminate amenity resources important to all of us. Yet, these external effects are receiving little attention. Secretary Block in his preferred program has set priorities for conservation spending. Again, protection of productivity is first on the list and the off-site impacts are last, unable to be funded because of budget constraints but possibly benefitting from productivity-enhancing investments (i.e., "trickle-down" impacts). Because the externalities are ignored in the marketplace, commodity prices do not reflect the true social cost of production.

An argument may also be made that society's interest in promoting farm exports to generate foreign exchange justifies public investment in maintaining soil productivity. To the contrary, I would argue that foregone productivity, or the prevention of such, is a private cost of production.

The background that I have presented is probably sufficient. For some of the reasons listed, we can probably justify the current federal involvement level. I am not opposed to federal involvement, just to its current form. To make my case for substantial revisions in the federal approach, the 1978 ACP Evaluation will be considered. More specifically, the distributions of erosion, subsidies, practices, costs, and farm size will be discussed.

Distribution of Erosion

My purpose is to put the soil erosion issue and the need for additional funding into the proper context. Based on the 1977 National Resource Inventory data (5), which quantifies the seriousness of the soil erosion problem, only 7 percent of our cropland was suffering serious threats to long run productivity and another 16 percent was suffering moderate threats. A moderate threat is defined as an average annual soil loss of 5 to 15 tons per acre and a serious threat is 15 tons or more per acre per year. The 1978 Agricultural Conservation Program (ACP) Evaluation (4) reported even lower estimates of 4 and 9 percent, re-

spectively. Even though any loss of productivity should not be lightly dismissed, the location of the problem is more concentrated than we are led to believe.

Distribution of Subsidies

I do not oppose public funding for soil conservation. Rather, I am concerned about the way public funds are used and the priorities that we have established. It is not time to ask for more funding for soil conservation, but rather, it is time to demand that existing monies be better spent. The Corn Belt states have 36 percent of the cropland identified by SCS as suffering moderate and serious productivity losses from sheet and rill erosion. (4) These same states receive less than 18 percent of the cost-sharing and technical assistance funds for conservation, a smaller share than they received 40 years ago.

Urban states of the Northeast have less than 4 percent of the cropland, output and productivity-threatening erosion, and they receive more than 10 percent of the conservation funds. The distribution of ACP payments among states has remained almost unaltered since the initiation of the program in 1936, even though crop production and the associate erosion problems have become more concentrated in the more productive agricultural regions (e.g., Corn Belt).

Distribution of Practices

Another dimension of soil conservation spending that demands attention is the present inefficient use of cost-sharing dollars. The 1978 ACP evaluation (4) found over 52 percent of the erosion control practices installed on lands eroding at less than 5 tons per acre per year. Less than 5 tons is considered tolerable and not threatening to long run productivity of the land. Moderate erosion (5-14 tons/acre/year) threats were occurring on 9 percent of the farmland, which was receiving 27 percent of the soil conservation practices. Lands suffering serious erosion threats received 21 percent of the practices and accounted for 84 percent of the excess erosion but accounted for only 4 percent of the farmland.

Costs of Soil Erosion Control

The average cost over the life of soil erosion control practices that are cost-shared vary significantly. Practices on land eroding at less than 5 tons per acre averaged \$14.87 per ton based on the 1978 ACP evaluation. (4) Estimates for other erosion rates include: \$2.69 at 5-10 tons; \$1.47 at 10-15 tons; \$.62 at 15-30 tons; \$.43 at 30-50 tons; and \$.22 over 50 tons. Based on these estimates, the study concluded that three times as much erosion control could be achieved with effective targeting and the same level of funding.

Distribution of Farm Size and Conservation Practices

Cost-sharing subsidies are distributed in close proportion to the number of farms in various size categories. Based on the ACP evaluation (4), farms under 300 acres received 65 percent of the cost-sharing practices, contained 71 percent of the farms and 17 percent of the farmland. At the same time, farms over 500 acres received 20 percent of the practices, contained 16 percent of the farms and 72 percent of the land.

Soil conservation problems are distributed more according to land area than to farm numbers. The distribution of cost-sharing practices tend to coincide more closely with farm numbers. A \$2500 per year payment limitation at the time of the evaluation may contribute to the high correlation between farm size and practice use. (4)

If we target conservation spending in the future, conservation efforts may be concentrated on larger farms relative to their smaller counterparts. Such a reallocation of conservation funds may be unacceptable on distributional grounds.

Policy Implications

Given the economic justifications for soil erosion control funding and the dynamic nature of the soil erosion problem discussed by Schultz (3), a strong case can be made for action at the national as opposed to the state or local levels. The following points are critical:

1. The proposed block grants will be even less flexible than the current cost-sharing subsidies;
2. If an option demand exists for future soil productivity, this demand is national in scope and has public good characteristics;
3. Many of the sediment problems are pervasive, crossing state boundaries. Additionally, these problems must be treated on a case-by-case basis and they do not fall neatly within state boundaries neither with respect to demand nor to supply of environmental quality.

Our national efforts need to be refocused both economically and politically. The Congressional roadblock to reallocation existing funds among states must be overcome. The lobbying efforts by advocacy groups (e.g., National Association of Conservation Districts, construction contractors) for more money for every district, regardless of conservation need, must be tempered.

If we continue to fund soil conservation, we must recognize that erosion is a concentrated problem that requires a targeting of cost-sharing funds. Also, sound criteria need to be developed for targeting. Presently, the targeting effort is too dispersed, too small, and too general with respect to criteria. If our goal in funding is improved environmental quality, then the focus of our efforts should change. Such a focus doesn't require keeping soil on the hillsides, except as it affects

upland habitat, but rather, requires keeping sediment out of streams (e.g., filter-strips, impoundments).

Finally, if soil conservation programs were not designed to improve allocative efficiency, should we be using efficiency criteria to evaluate them? Possibly, such programs deserve evaluation based on program objectives, as opposed to imposing our values on the evaluation process. Unfortunately, the programs are not an efficient approach to the desired equity goals, either.

REFERENCES

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