Environmental Regulations as Constraints to Agriculture: A Discussion

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Little doubt remains that agricultural operations will be increasingly constrained by environmental regulations. In that spirit, each of the foregoing authors has provided a general framework for a specific environmental issue as it impacts agriculturalists. I learned something from each paper (an important criterion). Rather than summarize the points made by the authors, I have chosen to address each paper separately and point out some specific issues which I feel were overlooked in the papers or which seem to follow directly from the discussions in the papers.

Three specific issues are raised by Osteen's presentation of the regulatory environment for pesticides. The first arises from his discussion of decision criteria used in pesticide registration decisions. Osteen suggests that a risk-benefit criterion, whereby the risks arising from a pesticide's use are evaluated along with benefits associated with the pesticide's use, is preferable to a risk-only criterion, which takes no account of pesticide use benefits. He then reviews results of some pesticide benefit analyses to demonstrate the value of specific pesticides in several crop production enterprises. Most pesticide benefit analyses are conducted using a partial budgeting approach: pesticide benefits are equal to the value of production lost plus the change in pest control costs incurred when pesticide choices are limited (USGAO, 1991).

The National Agricultural Pesticide Impact Assessment Program (NAPIAP) was established to aid EPA in conducting pesticide benefit studies -- specifically to evaluate the farm/rural benefits of pesticide use (USGAO, 1989). However, the value of NAPIAP information in EPA's decisions has been questioned (USGAO, 1989); that pesticide use data are scarce, that studies of pesticide impacts are of limited duration, and that analyses rely heavily on estimates provided by experts rather than research-generated data are specific concerns. I would caution that these NAPIAP studies provide at best only a limited basis for a full accounting of benefits to be used in regulatory decisions. There have been other, broader studies which have assessed economic impacts on both producers and consumers of banning specific pesticides but they have not been without their critics (Knutson et al.; Ayer and Conklin). The bottom line: if the risk-benefit criterion is to be used, the estimation of benefits must be defendable.

Second, Osteen uses the term "economic loss" to refer to situations where banning of pesticides takes away the benefits referred to above. Bromley has called this the "language of loss" and cautions that in regulatory debates such language distorts the choices faced. Specifically, it relies on the assumption that the status quo is the appropriate basis from which to compare policy choices. In fact, the benefits of pesticide use that are labeled "losses" in the regulatory debate have come at some external cost. The critical question is really: Who

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is expected to bear the costs of a particular decision? As Schmid has pointed out, "Costs do not simply exist in nature but are selected by the public choice of property rights (p. 241)."

It is possible that the set of rights that protects pesticide users from bearing unwanted economic costs is preferred, although this is less and less obvious. However, it is incumbent upon economists who engage in policy analysis to clarify such a position and explicitly express the acceptance of the status quo as the appropriate base for analysis. To recognize its limitations is also a requirement.

Third, Osteen makes a valuable point in his attention to the potential for increasing pesticide risks when one pesticide is removed from use without consideration of the potential risks associated with compounds which are likely to be substituted for the lost pesticide. And this risk is not limited to risks of pesticide residues in food. A complex array of issues faces those charged with assessing risks associated with pesticide use. Food safety, worker protection, water quality, risks to wildlife, and air quality are prominent. Because the number of agencies and individuals charged with evaluating risks and developing management strategies is so large, and because the regulations controlling them differ in their approaches (as Osteen has noted), there is ample opportunity for inconsistency. There is a critical need for a coordinated, comprehensive approach to evaluating pesticide risk; a pesticide policy which, as an example, reduces risks of pesticide residues in food while increasing water quality risks can only be improved.

In his paper on coordinating government programs aimed at achieving agricultural sustainability, Johnson suggests that, again, a comprehensive approach to addressing natural resource and environmental issues is needed. He provides a specific example of attempts to coordinate water quality programs in the Tennessee Valley. He also notes that results have been mixed. I would have been interested in his views on how coordination of program implementation could be enhanced, especially when a greater array of issues is to be addressed. This is especially important now that a move is afoot to encourage the adoption by farmers of whole-farm resource management plans.

So far, the suggestion -- in pending legislation (HR1440) and offered by the Soil Conservation Service (Bridge) -- is that SCS implement such a program, both by developing resource management plans and by coordinating various state and federal agencies whose expertise might be required in the planning process. I have two specific concerns about the proposal. First, it is not clear that SCS has or can expect to have the resources, both financial and human, to implement the proposed program. Second, the institutional and organizational constraints to such a program are problematic. Several states are in the process of implementing Total Resource Management programs. The states which have developed implementation plans so far have based those plans on the existing institutional and agency structure within which the planning and implementation would take place. Because these structures vary widely, other states should not be expected to adopt, wholesale, the models developed by these pilot states.

Johnson also suggests that responsibility for providing the financial and informational base for achieving agricultural sustainability will fall to society at large. This is not likely to be a unanimously held position. In their recent report "Soil and Water Quality: An Agenda for Agriculture", Batie and colleagues (National Research Council, Committee on Long-Range Soil and Water Conservation) note that agricultural landowners have enjoyed a wide range of rights with respect to the way farming is done. But they also note how those rights, and as a result, the responsibilities of farmers are changing. The Committee recommends that the rights and responsibilities of agricultural landowners and farmers be clarified by state and federal rules. The role that society will choose for itself, in light of changing views of the responsibilities of agriculture, may well differ from the one suggested by Johnson.

Finally, I turn to Carriker's paper on wetland regulations. His paper reflects an impressive attention to the more recent literature on debates over wetland regulations and the attention to wetland issues in the court system. Perhaps purposefully, he has avoided any reference to issues associated with the Swampbuster provisions of the 1985 and 1990 farm laws. In some sense that is too bad, since the overlap between Swampbuster and

Section 404 of the Clean Water Act and the potential inconsistencies in implementation make for some interesting debates, especially as they relate to agricultural land. In addition, there are a number of interesting issues -- some economic, some political -- relating to the protection of wetlands which he did not address. Let me suggest a few.

One of the most critical problems facing agricultural landowners has been the lack of consistency in terms of wetland delineation between SCS for Swampbuster and the Corps of Engineers for section 404. An area delineated as a wetland by the Corps might not be so delineated by SCS. So it is possible to violate section 404 without violating swampbuster. The reverse situation is also possible. Recent actions resulting from the Clinton administration's Interagency Working Group on Federal Wetlands Policy (Office of Environmental Policy) are aimed at improving this situation. A Memorandum of Agreement Concerning Wetlands Determinations on Agricultural Lands was published in the January 19, 1994 Federal Register. The basic agreement is that SCS will do wetland delineations for agricultural lands and the Corps and other agencies will use those delineations in their jurisdictional activities.

Agricultural lands are defined in the MOA as those lands intensively used and managed for the production of food or fiber to the extent that the natural vegetation has been removed and cannot be used to determine whether the area meets applicable hydrophytic vegetation criteria in making a wetland delineation. Agricultural lands do not include range lands, forest lands, wood lots, or tree farms, lands where the natural vegetation has not been removed, even though that vegetation may be regularly grazed or mowed and collected as forage or fodder. (I suspect some farmers and ranchers would disagree.) The MOA does allow that for lands owned or operated by a USDA program participant that are not agricultural lands and for which the participant requests a delineation, SCS will do the delineation *in coordination with the Corps or EPA as appropriate and in consultation with the US Fish and Wildlife Service*. Has the delineation question been settled? I don't think so. And even if it has, there is sufficient inconsistency in the way the two laws are written that it is still possible to violate one and not the other. So landowners are still without a clear direction with respect to their responsibilities for managing wetlands.

A second area in which coordination and consistency problems are critical is with respect to the impact on overall credibility of government efforts to protect wetlands. We've seen the problem of inconsistencies between soil conservation programs and commodity programs addressed with the Sodbuster and Conservation Compliance programs. But remaining inconsistencies threaten the credibility of public efforts. I would introduce you to a rancher in Oklahoma who, as a participant in the U.S. Fish and Wildlife Service's Partners for Wildlife Program, has enhanced the wetlands on his property and has constructed new wetlands. The Partners for Wildlife program is one which combines federal, state and private financial support for wetland protection on private lands. This individual has received considerable financial input from various state and federal sources and has invested heavily of his own resources. Now, he is facing the condemnation of a portion of his property because of the proposed construction of a new highway. And a large portion of the land targeted for condemnation contains his wetlands. Most likely, the total costs of that highway construction project have not been calculated.

Wetland valuation is a problematic issue; its resolution has particular importance with respect to discussions of mitigation and wetland classification. There is considerable effort underway to measure the functional value of wetlands -- their value as sponges of flood waters, purifiers of contaminated water, and habitat for wildlife. In addition, resource economists are amassing a rich literature of studies using nonmarket valuation techniques to assess the value of wetlands. (Luzar and Gan have provided a recent review of technical and economics literature on wetland functions and values). There has even been some discussion in the policy arena of categorizing wetlands based on their value and implementing protection programs accordingly. However, the problem goes beyond one of definition. The value of a wetland is not fixed in time or space. As Shabman and colleagues have pointed out, "a preserved wetland site might at some point in the future have its functional contribution to the watershed diminished by human alterations to

the surrounding landscape and hydrologic regime (p. 42)." Any categorization of wetlands based on value must "simultaneously consider the ecological, economic and political aspects of wetlands regulation (Shabman et al., p. 42)."

Last year's flood in the midwest provides for an interesting laboratory in which the public's commitment to wetland protection can be tested. The irony is that publicly financed drainage, dikes and levees across the northern plains and the midwest have exacerbated flood damages (Denning). Now, considerable federal funding has been appropriated for rebuilding of levees and reappropriation of flooded cropland (U.S. Congress), although plans for implementation have not been announced. Whether that funding might be better spent in an effort to restore wetlands in the region to ameliorate possible future flooding seems an obvious question. Around $15 million have been appropriated for expanding the federal Wetlands Reserve Program in that area (Federal Register, 1993). It is not often that such a significant opportunity for meeting environmental goals presents itself. Whether it is acted upon will, in my opinion, speak to the relative importance placed on wetlands and their roles in that vital ecosystem.

Perhaps the most interesting and most difficult question with respect to wetland protection on private lands is who should pay to assure wetlands are protected? For that matter, who should pay to assure the protection of endangered species habitat on private land? Or for any other "special place", as Zinn has called them, which is found on private land? Clearly, responsibility for protection of these special places depends on where the rights to those areas are vested. As noted earlier, agricultural landowners have enjoyed a wide range of rights, and these rights have provided the basis for past environmental policy. However, those rights are clearly changing as we find landowners being asked to bear the costs of protecting these vital resources. The question of compensation is critical, and it goes beyond the legal recognition of compensation for taking of property. If these special places are of value to society, is there a responsibility on the part of society to share the cost of protecting them? We saw farmland protection programs in the 1980s evolve as a shared effort to preserve prime farmland and open space. Certainly, the Wetlands Reserve Program is one example of such a shared effort on behalf of wetlands. But with its limited scope, that program alone cannot be expected to address the problems which arise when private landowners are asked to bear the costs associated with assuring a public good.

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