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## ENVIRONMENTAL AND SOCIAL IMPACTS OF AGRICULTURE: A SPECIAL CHALLENGE IN POLICY EDUCATION

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This is not a policy area for the naive or fainthearted. While the “alternatives and consequences” scripture of policy education is intuitively and intellectually sound, it can be a flimsy shield when the wars start, and they will. It is still the *right* framework, of course, and, as Flinchbaugh frequently reminds us, if we are sought out and then assaulted by interests on both sides of a given issue we must be doing something right. That is comforting to be sure. I recommend a team approach to policy education on the environmental and social consequences of production agriculture. Don’t go out there alone!

All policy educators know that conflict is the starting point in policy change. It is a fundamental component of policy, a disruption in the momentum inherent in a given set of rules; *not* an aberration, but an essential element of the process. The alert policy educator will see conflict in the steaming stage, before it is in full boil, and begin to “work the crowd.” We have been doing so on the topic of this session for many years, but urgency of the issues has expanded quite suddenly. I really feel that our credibility as policy educators and as land grant social scientists is in for a major test in months ahead.

My purpose in this paper is to clarify the educational challenge, rather than the substance, of the environmental and social impacts of production agriculture. Earlier papers in this session have indicated the roots of the policy conflict; there is an impressive history of contribution on the topic at the National Public Policy Education Conference (for example, Offutt, Batie, Lemley, Carriker, Glover).

### Priority for Policy Education

There should be little question about the importance of this topic area. Like most policy topics it has been thrust upon us, demanding attention. We might prefer to do something else, but have little choice in the matter. That is the dilemma in policy education as compared to other extension areas, even within the social sciences. Long-range plans are difficult, particularly if we have to follow them. Information needs can emerge suddenly or gain immediate priority because of a budget

hearing, an unanticipated confrontation or a new law. Two related legislative actions are partially responsible for greater outside scrutiny of farm practices in recent years: (1) The Soil and Water Resources Conservation Act of 1977 (RCA) brought soil and water use issues out of the restricted atmosphere of the agricultural establishment by mandating broad public involvement. (2) The 1985 Food Security Act nailed down some of the specifics, pushing farmers to protect wetlands or highly erosive soils in the broader public interest. That general principle of responsible farming behavior will be refined in other laws and policies.

There are several subject matter foci of particular importance for policy educators. First, effect of agriculture on quality of ground and surface water has been on national and state policy agenda for years. Various incentive and regulatory devices have been introduced to alter the decision environment facing water users. The general policy objective is to raise the cost of actions that cause pollution, subsidize those that reduce it or totally remove certain water use options through regulation. Because of obvious physical differences in the resource, policy experience for groundwater differs from that for surface water. Each policy technique, from tax break to prohibition, imposes cost on someone in the interest of improved water availability for others (Braden and Lovejoy). Environmental impacts of agriculture are more urgent now than a decade ago, not because farmers are more careless or farming more disruptive, but because of basic demographics. There are fewer farmers producing a higher proportion of nearly every commodity. Those are, by definition, more intensive production units, getting more output per farm acre. There are more nonfarmers scattered into rural areas, with more points of impact with farms. As long as our general economic health is measured in housing starts, we can expect more opportunities for conflict. Farmers in most states fight to protect their opportunity to have unhappy neighbors by resisting rural land planning and zoning. Farmers, like most of us, respond to the various signals from markets and other institutions inherent in our economic system. As Creason and Runge point out, those policy signals designed to stabilize production and prices can inflict unintended pain on the environment. Even some environmental rules can have perverse environmental effects, as with costly reregistration of pesticides, discouraging some new product development.

Recent surveys indicate broad public concern about chemical residues on fresh produce yet general confidence in overall quality of the food supply (Cook). This seeming contradiction identified in 1989 may have been the steaming preliminary to full boil on food safety policy. People are uneasy, influenced by a few documented cases of poisoning from agricultural chemicals and an impressive media campaign surrounding the Alar scare in 1988 and '89. The architect of that successful media blitz couldn't resist bragging about it in writing. Copies of the *Wall Street Journal* excerpts (Fenton) are tacked to bulletin boards in commodity group reception rooms all over the country. Differences in quality standards among countries create de facto barriers to trade

(Kramer). It is probably safe to assert that in some instances the limit on trade is *the* reason for the food safety standard. Policy education deals with understanding the context of food safety as an issue, general discussion of consumer risk preference, consequences of specific rules and standards that have emerged, and discussion of other policy options.

Policies focused on agricultural pesticides are a special case within the broader concerns of water quality and food safety. Consumers and voters have expressed their uneasiness about all those "artificial" chemicals being used to control the various pests that destroy, damage or just "mess up" fruit and vegetables. Expressed rationale for limiting pesticide use goes beyond immediate human impacts to include long-term viability of the resource. Much of the vague rhetoric about sustainable agriculture was given further substance and credibility by the timely publication of *Alternative Agriculture* by the National Research Council (1989). This is a high stakes game. Neither users nor prohibitors are inclined to compromise. Chemical companies have simply avoided lengthy and costly battles by taking certain low-pay-off chemicals off the market. Farmers and their spokespeople react with predictable anger, even horror, at the loss of a technology considered fundamental to a certain crop in a certain place. California's "Big Green" initiative is on the November, 1990, ballot. If passed, the law could ban 70 percent of chemicals currently in use because they *might* be carcinogenic or reproductively toxic. The pressure is on in Florida and other fruit and vegetable states. The "so what" of these limitations is generally poorly documented, with a few notable exceptions (Knutson, et al.; Barse, et al.) that focus on particular crops. More policies will be written and need for education is immediate.

There are several topics fitting under the "social" part of this session title. They involve other impacts of economic adjustments within production agriculture. They are also sensitive, difficult, important and under-developed topics for policy education. First is the general topic of rural poverty, best characterized by President Kennedy's commission as "the people left behind." Causes of rural poverty extend beyond structural change in agriculture, but it is certainly true that some people lack the human, financial and natural resources to stay up with agricultural change or to find other jobs. The policy educator interested in options for coping with the glaring human cost associated with rural poverty seldom confronts major conflict. There is no pro-poverty movement within the agricultural establishment. The challenge is to keep up one's spirits in the face of massive indifference. There may be general concern that attention focused on poverty may detract from "more pressing" extension needs on mainstream topics, but seldom active resistance.

Policy education dealing with agricultural labor issues can be more tense. Living conditions for temporary and migrant farm workers have received the same national attention as food safety or environment. Author Alec Wilkenson won a Robert Kennedy Book Award for *Big*

*Sugar*, focused on the life and hard times of the cane harvester in south Florida. An update of Edward R. Murrow's "Harvest of Shame" aired on public television in early summer, 1990. Farmworker groups argue that growers avoid hiring the more demanding domestic workforce and rely on provisions of the Immigration Control Act that permit hiring temporary workers from the West Indies. These workers come to Florida for cane harvest and for apples from Virginia to Maine at wages substantially higher than available at home (*Farmworker Justice News*). Growers in need of a reliable work force say there is no exploitation, just their legal use of policy options open to them. Migrant or temporary farm labor is important to fruit and vegetable harvesting across the country. Farmers understandably resent being labeled uncaring and manipulative, and seek mechanical substitutes to people in the fields.

Extension is substantially under invested in the human side of agricultural production technology. There are few specialists nationwide focusing on consequences of employment policy. It is a lively pursuit to be sure. Unfortunately, extension scrapped an effective and growing collaboration with the Department of Labor back in the 1970s for reasons that are at best unclear.

These environmental and social consequences of production technology present similar challenges for the policy educator. They are issues that cannot be ignored if we and the land grants in general are to maintain an image of responsiveness and credibility with our benefactors, the taxpayers. Following are the specific aspects of policy education on these topics that I feel are most challenging.

### **Technical Base**

The policy educator dealing with environmental topics is drawn into a complex of physical and biological sciences. *All* policy education must deal with the factual base underlying the options, but environmental problems seem to be particularly demanding. Feasible policy options for protecting groundwater recharge areas or for discouraging farmer actions that may contaminate supplies are tied to hydrologic and chemical properties of the water source and its pollutants. Policy specialists can't be experts, but they must invest in understanding the technical side. Even more importantly, they must collaborate with specialists in those other disciplines in organizing educational programs. Usually it is the policy specialists who must assume the overhead function, identifying the expertise necessary and getting it together. There is the mistaken assumption among many in those other disciplines that good science yields "good" policy just by virtue of its intrinsic elegance. That is nonsense, of course. It is the policy specialist's role to glean the "so what" inference from all of those sophisticated water quality data sets and engineering designs. Programs, published materials and other education outputs must begin with the technical facts on water sources, contaminants and health consequences before considering institutional experience or options for dealing with those problems.

A particular challenge when working with production scientists,

engineers, biologists or ecologists is that few share the "leave it on the stump" ethic of policy education. Most non social scientists prefer normative conclusions. They are also inclined to take sides. I never knew an agronomist who didn't feel strongly that agriculture's needs are more important than those of other folks. I have known few environmental ecologists who believe a farmer deserves an even break. All can accept the notion of unbiased research but the challenge of even-handed policy analysis and education is up to the policy specialist.

Understanding the policy setting for the environmental and social impacts of agriculture may require special expertise as well. The complex state and federal regulatory structure for pesticide registration and use, waste disposal, water protection, or employment may require bringing lawyers or bureaucrats into the education process. Concepts of revealed-risk preference or the ethical roots of environmental protection may be beyond the expertise of the policy educator, particularly the policy economist.

Effective policy work on these topics must be a multi-disciplinary team approach even more than with other policy topics. The risk is that battles within the team may overshadow battles among clients. It is up to the policy educator to cajole, bribe, threaten and referee the process. Scientists from these other disciplines may be our most important and challenging clients. They need to understand the policy process and their role in it. Deans and directors need help as well, though the policy educator should approach with caution. He must be available, helpful, creative and positive with deans and directors, never flippant, patronizing or annoying. A successful policy educator is aware of the group pressures facing *all* policy participants and uses that knowledge in the education process.

### Gainers and Losers

The distributional character of environmental policies, and to a lesser extent social policies, are a special challenge for the policy educator. Actions to protect a recharge area or restrict a pesticide can entail major economic costs for a few with benefits widely distributed in small increments. The farmer may face economic and personal ruin for illusive benefits in the form of avoided risk to a large segment of society. In some grand social welfare analysis the net may be positive but that is small comfort for the sawmill operator in Oregon put on the streets by a spotted owl. I imply no judgment on the validity of such risk shifting regulations, but simply assert that the distributional character of those policies creates a special challenge for policy education. Those most adamant about restricting availability of pesticides to avoid the possibility of future health effects obviously suffer great personal anxiety about the risks involved to themselves and others. Further they would feel no personal loss from banning a pesticide or a farm practice. Substitute products are available; there is no personal sacrifice at all. As with many political causes, they accept a moral obligation to act in the interest of others whether or not they are delegated to

do so. In economic jargon there is want or preference but no effective demand in that the "consumer" of protected endangered species habitat confronts a budget constraint in pursuit of that product. Perhaps one could assert that the anti-pesticide advocate "spends" discretionary time and effort with some opportunity cost involved, but I suspect that many such causes generate their own intrinsic utility.

Those whose actions are the object of environmental or labor policies designed to mitigate impacts of agricultural practice experience *major* personal inconvenience. Some landowners, foregoing development potential in the interest of saving rural beauty, groundwater recharge areas or other open land values, have successfully argued that compensation must be paid. Land has essentially been taken for public use and must be paid for. Some variant of this compensation demand comes up in many areas of environmental policy — "If you (society) want to change my way of life, buy me out." If society gains, society should pay. The "regulatee" can feel very strongly about that. Policy educators know, however, that regulations to protect the health, safety and general welfare are an essential part of the institutional fabric of this country. The policy question of who must come to whom or the initial distribution of property rights has no definitive answer but is on the agenda for policy education in this area. People take sides around that question, including other scientists participating in the education effort. Is the right to permit erosion at greater than T or runoff into a neighboring stream a right that must be bought if lost, or is it a right simply reclaimed by society to avoid socially deviant behavior by the individual? One's position on that question is a function of basic ethical precepts, values *and* the personal economic stake he has in the result.

All policy change in this or any area entails gainers and losers; loss tends to be more concentrated in environmental rule changes than in other policy areas. The educator must deal with these property rights questions and help participants respect the rights of others. It is the height of hypocrisy to demand sacrifice by others and accept no personal responsibility. Few concerned citizens are willing to stop using hydrocarbon fuels to protect the ozone layer or pay extra for biodegradable containers. Good public transportation has not yet supplanted the two or three car family particularly in affluent neighborhoods of highly-educated people who tend to lead the environmental movement. I do not mean to trivialize the valid concerns of American citizens seeking to improve the general quality of life for all. But participation in that system carries responsibilities as well. Until there is this honest mutual respect for rights, needs and obligations of others, the policy battles could be ugly.

### **Policy Educator as Peace Keeping Force**

At some stage in the evolution of a policy issue, direct confrontation is a strong possibility. Here is a *real* challenge for the policy educator dealing with environmental and social impacts of agriculture. Can we help when open political and social conflict has erupted between farmers

and environmentalists, local governments, labor groups or all of the above? Many farmers and ranchers and their organizations feel bombarded from all sides, generally unloved. They are mad about it. Full scale verbal wars have broken out with combatants unwilling or unable to discuss the issues calmly. Both sides have decided that negotiated compromise is impossible and they seek victory. Both sides seek allies and, in their view, if you are not with them you are against them. What if anything can our role be under those circumstances? Can the policy educator be helpful without compromising his or her responsibility to a public institution? What about situations in which extension itself may be perceived as part of the problem? Can we afford to "just say no" and go on to the more manageable issues? The policy economist, schooled in retrospective analysis with tentative suggestions of what *might* happen in the future, is particularly vulnerable in open warfare.

Most policy educators I know would not do particularly well in a peace keeping role. They simply are not trained for it. They (we) talk a good line about hands-on involvement but are very sensitive to pain and likely to find reasons to be elsewhere. Future needs in these policy areas, however, will require that more specialists help resolve conflict after the teachable moment has come and gone. We simply cannot limit ourselves to thoughtful articles and bulletins in the face of direct conflict on issues of the environmental or social consequences of agricultural production. There are counter pressures in academia with greater homage paid to journal articles and more disciplinary research. It is likely that only tenured full professors with a solid self image, well-honed verbal skills and a supportive dean should try peacekeeping. The land grant university should be cautious about refusing involvement, trying to stay above it all. On the other hand, inept peace keeping could be far worse than none at all. Policy educators should get training or find colleagues in industrial and labor relations, community social work, or law. These departments or units of the university tend to cultivate the skill of negotiating on behalf of a client. A participant from those units would need to isolate his or her personal views on the two sides at conflict, and draw on mediation skills. The goal in peacekeeping is not to pick a winner, but to find common ground or at least reluctant acknowledgement of the other side. As we all know, however, education and information are not value-neutral. Any form of intervention by the policy educator, no matter how pristine the motives, will likely help someone at the expense of someone else (Laue).

### **Land Grants in the Squeeze**

The final and perhaps greatest challenge of policy education on environmental and social impacts of agriculture is the vulnerability of the "sustaining source" of all such endeavors, the land grant university. Most policy educators are part of the land grant university and thus sensitive to pressures brought to bear on the role and agenda of that institution. There is more to the "land grant problem" than any pressure that might result from policy education on the issues of this session,



but those pressures constitute part of the challenge of good policy work in this area. With declining federal resources in many urbanizing states, the land grant university is increasingly dependent on state budget support. So who among state groups supports the land grant, and why? Production agriculture remains the most vocal and consistent supporter of land grant research and education in many states. Others give moral support but farmers and their lobby groups are still the most reliable at budget time. There are good reasons for that of course — the land grants have served agriculture well for the past century. The immediate problem for the policy educator focusing on the environmental and social impacts of production is that such efforts can make farmers profoundly unhappy. Failure to conduct solid and substantive work on these topics, on the other hand, further damages the land grant image among other groups. There can be little doubt that the 1862 land grants are considered part of the problem by some groups worried about agricultural pollution (Creason and Runge) or human costs of production technology (Buttel). Jim Bonnen asserted at the centennial conference for the 1890 land grant universities that those institutions are doing a far better job than the 1862's at articulating and measuring the human costs of prevailing production technologies. Policy educators trying to deal at the interface of these issues are clearly caught in the squeeze, giving meaning to the cliché "damned if they do and damned if they don't."

As level of tension increases between farmers and environmental interests, so does pressure on the land grant universities. Our attempt to be genuinely helpful can be interpreted by some agricultural groups as faintheartedness or, worse, as signs of betrayal. When farmers really need us, when their needs are least understood by the broader society, we talk about academic integrity or objective analysis. Many scientists and administrators within the land grant system may join the debate on behalf of agricultural interests. Their arguments are more subtle, but positions are just as clear. Academicians from other parts of campus may assert just as strongly that the aggies are in the hip pocket of the ag industry. Positions of the policy educator, particularly the untenured among us, can be hazardous in that setting.

### Conclusions

Yes, policy education on the environmental and social consequence of agriculture is challenging. There are no secret techniques or content that will make it less so. Continued effort on these topics is important primarily *because* of that challenge. A few final conclusions may be helpful.

1. Evidence of educational success is elusive. Policy educators are among the least enthusiastic contributors to extension impact measurement efforts. It is not that we don't care, or consider ourselves above it all, but we understand better than most how tentative any impact conclusions must be. The successful policy educator is, at best, a catalyst, one who assists change without

really being part of it. We seek to help decision makers better anticipate results of their actions. If they make informed choices using information we have provided, the educational effort has been useful. Their memories seem to be incredibly short. We have to start all over again for the next set of choices or the next election. If there is any learning curve at all, it seems to have little slope. In his 1990 Fellows Address for the American Agricultural Economics Association, Cliff Wharton acknowledged the frustration that so much effort by many capable and principled leaders has had so little impact on global or domestic poverty in the past forty years. His frustration is shared by many policy educators. I am amazed, for example, at how little progress we have made with policies to retain strong agriculture in an urbanizing political economy. The policy experience is diverse yet each new case seems to start from scratch, fighting over the meaning of property rights, freedom and the "American Way." Perhaps each crop of landowners and educators has to think of it themselves.

2. Conflict management is a valid role, but we need help. No further elaboration of this conclusion seems necessary.
3. We must recognize extremism on all sides of these policy debates and acknowledge it as such. Overstatement is part of politics, a product of fear, anger, deviousness or some combination. While health consequence of farm chemicals is a valid concern, there is a disturbing tendency toward chemophobia among some people. Biocontrol technologies also can be worrisome, however. Whether the pesticide is "natural" or externally applied may make little difference to the pest, or to the human who inadvertently comes in contact with it. Part of the educator's challenge is to generate respect and general understanding of a spectrum of positions on most issues.
4. We need thoughtful agricultural leaders who understand that land grants are not just technical support units for production agriculture. They also need to understand how their long-term success relates to the broader political economy. In-depth education for selected emerging state leadership can be an essential counterpart for policy education in the environmental and social consequence of agricultural production.
5. Pressures for change on the land grant university are significant and valid (Schuh). We must be responsive and avoid tendencies for self destruction by fighting among ourselves on the balance between disciplinary and problem solving work, relative importance of different parts of our constituency, and relevance of social or biological science in the research mix. There is no doubt that agriculture, forestry, fisheries and natural resource services will be important to the economies of most states and to the United States. We need not turn our backs on traditional support. It is also true, however, that long-term strength within those sectors

requires responsiveness to economic and social change. Part of our challenge is to help agriculture continue its prominence into the next century. That position is by no means assured.

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