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Searching for the Heart of Agricultural Economics with 20/20 Vision

William M. Park

How relatively painless it was to agree 18 months ago to be nominated for the position of President-Elect of the Southern Agricultural Economics Association (SAEA). Preparing for this address, the most daunting task faced by holders of this office, has been anything but painless. At the same time I can say unequivocally that it has been a productive exercise for me. I hope that something I say will make your time spent listening worthwhile as well.

I thought on and off through the fall about what I might focus upon and like most who have gone before me, I suspect, reviewed past SAEA and AAEEA presidential addresses. I found that many over the past 10 years addressed trends and issues in the discipline of agricultural economics. Some of these went on to address our Association's role in relation to these trends and issues while others focused almost exclusively on challenges and opportunities facing the association. A fair number of addresses focused upon a subject matter topic in which the person had interest and expertise. My inclination was to try to do something of a mix, using a particular subject of current interest to me to illustrate a number of points in connection with broader trends and issues I have observed. However, I had only some fuzzy and scattered notions when I received an e-mail from Bob Nelson a week or so before Thanksgiving requesting the title of my address for the program.

With the pressure on, I finally decided that my starting point in discussing trends and is-

ssues in our discipline would be an attempt to articulate what I see as the "heart" of agricultural economics. By *heart* I mean our core, our sense of calling, our passion, our comparative advantage. I also decided that, in spite of the fact that Hal Harris jumped the gun in giving his "New Millennium" address last year (since the new millennium actually began just this month), this meeting remained a good point for reflecting on the past and looking ahead to the future. I recognized, too, that this is a particularly significant time with respect to my professional career. I received my Ph.D. 20 years ago at age 27 in 1980. If I want full Social Security benefits, I must work another 20 years, retiring at age 67 in 2020—hence the title.

As I began to piece together my address I realized that before listening to my perspective on trends and issues in our discipline you deserve to know something about the factors that have shaped my professional development over the past 20 years and even before that as a student. Thus the first part of my remarks will include some reflections on the mentors and influences that have made me who and what I am. I also realized that since I may never be asked to give an AAEEA Fellows Address, this may be my only good opportunity to honor those people who invested so much in my professional development. I hope you will indulge me in this.

In the second part of my remarks I will seek to articulate the heart of agricultural economics by identifying a set of distinctives that set us apart from general economics and other social sciences and that give us potential for generating social benefits from our various

William M. Park is professor and undergraduate program coordinator in the Department of Agricultural Economics at the University of Tennessee, Knoxville.

professional activities. In discussing these distinctives I will draw upon insights of leaders within our discipline who have suggested ways we can strengthen those distinctives. I will also identify six trends/issues facing our discipline and raise some questions I have regarding them, but few answers I am afraid.

The third part of my remarks will address the land trust phenomenon in the U.S. The allocation of rural land among uses and the value of services provided by rural land have long been subjects of central concern to our discipline. I will first provide some general information describing the nature and rapid growth of land trust activity in recent years. Then I will use the land trust phenomenon as an example to illustrate some of my earlier points about the distinctives of agricultural economics.

Reflections on Mentors and Influences

The beginning of my long and winding road toward becoming an agricultural economist started in fall of 1971 during my sophomore year in college at DePauw University in Greencastle, Indiana. Having started out as a math major, I took an introductory economics course from Gerald Warren, was captivated by the subject matter and "economic way of thinking," and changed my major soon thereafter. Alan Pankratz introduced me to environmental economics the next year, served as something of a mentor to me, and stimulated my interest in teaching by getting me involved in tutoring students taking the introductory course. Ralph Gray got my attention by giving me a D+ on my first of six papers in Senior Seminar, a course that provided the challenge I needed to prepare for graduate studies.

To be honest and forthcoming in identifying all the important people and influences during that time, I must note that during the spring of my junior year I made a life-changing decision to become a Christian. This initiated a fairly dramatic process of change in my values and the way I looked at the world. Over the following year or so I developed a very clear sense of calling to pursue a career

focusing on teaching economics at the college level.

My first stop in graduate studies was a brief one, the fall semester of 1974 in a Ph.D. program in economics at the University of Rochester. Though I did fine grade-wise, and even took "Modern Value Theory" from Sherwin Rosen, the "father" of hedonic price models, it quickly became clear to me that I was not cut out to be a highly theoretical, mathematical, macro-oriented economist. Fortunately, six months earlier during my final semester at DePauw, the graduate coordinator for agricultural economics at Purdue, Joe Uhl, had visited DePauw on a recruiting trip and given me my first glimpse into agricultural economics and its distinctives. Though there is more to the story, the bottom line is that I transferred into the M.S. program at Purdue, beginning in January 1975.

Over the next two years at Purdue many people influenced my professional development, but four stand out. Otto Doering provided me an excellent grounding in the philosophy of science and research methodology. J. C. (Chuck) Headley did a "two-day-every-other-week" visiting professorship during which he taught an advanced course in natural resource economics. The subject matter and perspective taken in this course really "pushed my button." The course also introduced me to the policy-oriented work that had been done at Resources for the Future over the previous 15 years or so. I stayed at Purdue an extra semester while my wife completed her undergraduate program, and this afforded me two wonderful opportunities. The first was to take "Theory of Agricultural Development" from Ed Schuh. While the subject matter was not in my area of specialization, I believe I learned more about application of economic theory in that course than any other in my graduate studies. The second was to serve as an instructor in an introductory economics course under the oversight of Bob Taylor, whom I consider my teaching mentor to this day. He perhaps has done more than all other people, books, and workshops combined to shape my teaching philosophy. Many specific teaching practices I still employ are due to his example.

My next three years (1977–1980) were spent in the Ph.D. program at Virginia Tech. There I learned a great deal about the art of policy analysis and advising from my major professor Len Shabman. If you saw the movie “City Slickers,” you may remember the part at which Curly tells Mitch there is just “one (important) thing.” Well, Len could only get it down to three. He argued in his 1982 SAEA invited paper that if economists could get decision-makers in the policy process to recognize the importance of opportunity costs, apply marginal analysis, and acknowledge the influence of incentives, we would have done most of what we might hope to do as policy advisors. Sandra Batie, who served on my committee and as my research supervisor the first two years, taught me a variety of things, but I particularly gained from observing her example in professional leadership. Burl Long, another committee member, taught me not to take myself, or anything for that matter, too seriously and demonstrated an “open door—students first” example. While at Virginia Tech, I was also fortunate to take a public finance course from James Buchanan. Together with an earlier exposure from reading *The Calculus of Consent* while at Purdue, his influence added a public choice perspective to my view of natural resource economics and policy.

During my 20 years at the University of Tennessee I have of course had many noteworthy influences. Please indulge me just a few more sentences to highlight a select set. Among my colleagues at Tennessee, though I hate to exclude others, two stand out for their dedication, their personal and professional integrity, and their encouragement to me as a junior faculty member—Luther Keller and Dan McLemore. Other individuals who bear more responsibility than others for my professional development and perspective include Emery Castle, Jim Hite, Larry Libby, Alan Randall, and Allan Schmid. Other highly significant influences over the past two decades have come from a) the policy research conducted at Resources for the Future, b) the interaction with colleagues on the Southern Natural Resource Economics Committee, c) the

Project 88 Reports that made the case for market or incentive-based environmental policy approaches, d) the National Rural Studies Committee which supported my position in 1993–1994 as a visiting professor at the Western Rural Development Center, e) the Natural Resources Leadership Institute in North Carolina for its efforts to promote collaborative problem solving and conflict resolution, and f) the joint efforts of Extension’s National Public Policy Education Committee and the Farm Foundation to enhance economic literacy and a sound approach to policy evaluation.

Distinctives of Agricultural Economics

The individuals, groups, and organizations noted above have certainly influenced my professional development. However, my perspective is such an amalgamation of influences that only I can reasonably be held responsible for the thoughts I am about to share. My list of distinctives is just that—my list—and certainly debatable. Others in this room would likely come up with a somewhat different list. For what it is worth, I believe the five distinctives below have characterized agricultural economics historically and, given the nature of the problems and questions of our day, should characterize our discipline and profession to even a greater extent in the future.

Microeconomic Focus

While some areas of specialization within our discipline do necessarily interface with macroeconomic or incorporate macro-economic concepts, our stock in trade has generally been to address microeconomic questions. Our emphasis has been on producer and consumer decision-making and the functioning of markets for individual goods and services. Based on an interview with Senator Byron Dorgan of North Dakota broadcast on NPR just last Friday, perhaps we should all be thankful we did not follow the macro-economic track. Discussing the relevance of long-run federal budget surplus projections to the current tax cut debate, the senator likened macro-economic forecasting to weather forecasting, meaning, I

guess, that its accuracy is rather suspect beyond maybe three to five days. He questioned trusting economists who "can't remember their home phone number" in making surplus projections 10 years into the future. He went on to suggest that in his view economics is much like "psychology pumped up with a little helium."

Applied, Problem-Solving Orientation

Rather than a theoretical bent or "discovery of new knowledge for new knowledge sake" perspective, most in our field tend to have an applied problem-solving orientation. This comes, I think, largely from the land-grant tradition and the context it provides, but is also reinforced perhaps by the nature of the formative experiences of many of us who have been drawn to our discipline. In any case, this orientation, when coupled with our micro-economic forms, leads us to a primary emphasis on the study of transactions within existing markets. Specifically, much of what we do in agricultural economics is intended ultimately to facilitate mutually beneficial exchanges (MBEs), thereby improving overall social welfare. Such facilitation can be accomplished by identifying existing opportunities for MBEs that are not being exploited, by developing information for decision makers on benefits and costs, or by reducing transactions costs in some other way. In one sense what I am talking about is simply improving the efficiency of markets. Even our research to support management and marketing decisions by commodity producers is essentially pointed toward facilitating MBEs. Take, for example, recent work in most if not all agricultural economics departments on precision farming. Such research efforts seek to identify conditions under which an MBE between farmers and equipment manufacturers is possible. Similarly, traditional work on direct marketing of fruits and vegetables seeks to identify conditions under which MBEs are possible directly between producers and consumers. However, often there are situations where markets fail to allow potential MBEs to occur or fail to exist altogether, due to the presence of externalities or

public good characteristics. While this phenomenon is obvious and rather pervasive in our subfield of resource and environmental economics, it is also present in connection with subject matter issues in our more traditional core areas. When this phenomenon occurs, it is necessary that we take an institutional perspective.

Institutional Perspective

From the outset I want to make it clear that I do not presume that changes in governmental institutions can always correct market failures and thereby facilitate MBEs and increased social welfare. As many writers have noted, "government failure" is also quite possible, and the real choice is between imperfect markets and imperfect governmental institutions, or more likely, some combination of the two. However, there certainly are situations where changing the rules to require or prohibit certain kinds of behavior or implementing programs that provide incentives for voluntary changes in behavior can facilitate MBEs or eliminate non-MBEs that were taking place against the will of one party. Institutional change can accomplish this in a variety of specific ways, but three broad roles seem most prominent to me: 1) reduction of transactions costs of market exchanges, 2) internalization of externalities associated with current behaviors, or 3) redistribution benefits and/or costs.

Before elaborating on this latter role I would like to highlight the recent pleas of two leaders within our Southern region for more attention to analysis of institutions within our discipline. In an article selected for inclusion in the AJAE 75th Anniversary Issue in 1993, E. C. Pasour called for placing more emphasis on choice between institutional constraints, rather than choice within fixed or exogenous institutional constraints. He based his call on two key notions: 1) that a proper institutional framework is a necessary condition for economic progress, and 2) that doing the above would help us avoid neglecting information and transactions costs in economic analysis. Pasour concluded his article by arguing:

More emphasis on incentive and information problems, including transactions costs, and on economics as a social science would add more realism to microeconomic theory and public policy analysis. It would help shift our work agenda toward choice between constraints, and hence illuminate a range of problems we currently overlook or under-emphasize. (p. 66)

Larry Libby, when discussing graduate education in his 1994 AAEA Presidential Address, argued similarly that preparation for

(A)nalysis of real economic problems that entail mutuality, cooperation, and ambiguity . . . (will require) more specific attention to institutional economics as a required and integral part of graduate curricula, not just as an add-on for those who have mastered conventional neo-classical micro and macro theory. (pp. 1004–1005)

Now, back to the role of institutional change in redistributing benefits and/or costs. A very common scenario out there in the real world can be characterized in the following way. Overall benefits exceed costs for a (potential) MBE, but not for some particular individual or group, under existing institutional arrangements. Redistribution of benefits and/or costs is necessary to make the potential MBE possible as a market transaction. Or, for a policy proposal, such redistribution is necessary to make an economically efficient solution politically acceptable. In thinking back over my research career I now realize that most of my work has addressed this kind of scenario—starting with my dissertation. The following is a quote from the *AJAE* article (alas, my one and only) that was drawn from my dissertation:

An economically efficient, nonpoint pollution control strategy for a multijurisdictional 208 area may result in a benefit-cost distribution that will prohibit its acceptance. Vesting financial authorities in a regional water quality management agency would allow for implementation of a local compensation scheme designed to facilitate acceptance. Such a scheme would involve raising revenues from water quality beneficiaries that

would, in turn, be paid as inducements for implementation of nonpoint control practices. (p. 455)

During the mid 1980s my research efforts focused on institutional change within federal cost-share programs designed to encourage farmers to implement soil erosion control practices. Several graduate students assisted me in analyzing how targeting critical watersheds and implementing variable-rate cost-sharing might induce application of the most cost-effective practices on the most highly erosive land. These institutional changes largely involved changing the distribution of costs and benefits to facilitate MBEs between farmers and soil conservation agencies.

During the mid 1990s I explored the potential for MBEs among rural counties in establishing institutional arrangements to support regional, multicounty cooperation in solid waste management. Stringent federal requirements implemented in 1991 created huge economies of size for landfill disposal. Study after study demonstrated the dramatic potential cost-savings from large regional landfills serving multiple counties. However, very few successful cooperative efforts occurred. Why? A key was certainly the difficulty in adjusting the distribution of benefits and costs, particularly in connection with the “host county issue,” to insure that all participants gained. But cooperation was also constrained, it appeared, by a host of other factors, most of which were not easily quantifiable for inclusion in economic models, such as risk perceptions. Others, however, were not even within the traditional economic mind set, e.g., trust, community identity, and emotion. It was at this point during my year at the Western Rural Development Center that I had to admit: we (as economists) do not always have all the answers or even all the questions. As I reviewed the literature on the subject of regional cooperation among counties in the provision of public services, I found myself reading more journal articles and conference proceedings papers written by sociologists and political scientists than by economists. I came to recognize the value of interdisciplinary openness.

Interdisciplinary Openness

Agricultural economists who engage in research related to physical or biological processes in the plant or animal sciences have necessarily had to interact with and rely on scientists in these disciplines for data. Others within our discipline, especially those in resource and environmental economics, have built bridges to fields such as ecology and ethics. Economics has also developed significant interfaces with the fields of geography and law. However, I am emphasizing here our sister social sciences, which share a common interest or have specialized knowledge in many aspects of human behavior that we address. In addition, professionals within these fields employ different but complementary methodological approaches that we could well consider using ourselves.

Interestingly, about the same time that I was having my "awakening," David Zilberman was presenting an invited paper at the 1994 SAEA meetings. In that paper he made the following set of statements about how perspectives from other social sciences might contribute to our research efforts, especially in the policy area:

Thus far I have discussed mostly the relationship between economics and physical and natural scientists, but another group of professionals with whom we have to relate includes scholars of social sciences and the humanities. It seems that economists treat members of other social sciences, such as sociologists and political scientists, in much the same way engineers treat economists. We consider them 'soft' and do not seek their input in the design of policy or systems. Economic models based on individuals' pursuit of satisfaction of needs are used to provide answers to policy problems, and we have very little room in our analysis to incorporate considerations of group affinity, cultural identity, habits and customs, and passions and emotions. (p. 38)

Even earlier, in his 1991 SAEA Presidential Address, Larry Libby had argued for greater disciplinary diversity even within agricultural economics departments:

One response to pressures at the disciplinary boundaries of economics is to diversify by discipline within a department of agricultural economics. Likely candidates for inclusion are law, sociology, mathematics, anthropology, psychology, philosophy. A department that can do so is better positioned to be useful in the land grant university of the 21st Century. Neil Harl who has achieved national prominence in both law and agricultural economics has stated, 'One of the major strengths of agricultural economics has been that the profession has reached out to other disciplines in addressing real world problems of significance.' (p. 9)

Our discipline has had a history of close association with rural sociologists, with several combined departments. Lawyers with an interest in agricultural and rural subject matter have also found a home in a number of our departments. Though many here may not have been aware of it, two institutions in our region, the University of Florida and Texas A&M University, had philosophers within their agricultural economics departments or agricultural college for a time. Our association should also take some pride in having featured an invited paper session in 1995 in which two papers (Robison and Hanson; Schmid and Robison) sought to integrate the concept of social capital into economic models and mindsets, while the third paper (Lynne) drew heavily from social psychology.

With respect to methodological approaches I would like to illustrate what I'm thinking of by highlighting the arguments made by Kennedy and Luzar in a 1999 RAE article on the use of case studies. I only wish they had published it about five years earlier at the time that I was struggling with how to analyze the regional cooperation issue I mentioned earlier. My case study efforts were admittedly ad hoc and, therefore, less productive than they might have been. Early in their article, Kennedy and Luzar make the following three statements:

(I)t is our intent to address the growing demand for explanation leading to understanding, which is not always satisfied by our reliance on predictive models of economic phenomena. (p. 581)

(C)ase studies are increasingly accepted in other areas of the social sciences, such as sociology and political science, not as a replacement for theoretical or statistical approaches but as contextual complements that enhance understanding. (p. 582)

(R)esearch problems addressed by agricultural economics are losing their uniqueness and as result are often difficult to distinguish from the problems addressed by political scientists, geographers, rural sociologists, and anthropologists. (p. 583)

The authors continue to argue that the case study approach need not imply less methodological rigor than our dominant "tool oriented research." They argue case studies are particularly helpful in answering "how" and "why" questions and particularly appropriate when the phenomenon under study is not readily distinguishable from its context. This latter situation may imply that there are essentially more variables than data points and put a premium on multiple sources of evidence. My point is that we as economists do not have a lock on valid perspectives for viewing, or methods for analyzing, even so-called economic phenomena or behavior. Many of us could well benefit from greater interdisciplinary openness. That brings me to my final distinctive.

Participant Mentality

I am afraid my brief discussion of this distinctive is rather superficial and somewhat anticlimactic. As I began to flesh out my initial outline I expected to have more to say here. I do not know if I just "ran out of gas" or if there is just not as much to it as I originally imagined. In terms of our research and extension functions the notion of a participant mentality relates back to our applied, problem-solving orientation. We in the land-grant tradition are not simply inclined to study or analyze subjects, but to offer practical solutions or answers to real-world problems or questions. We want to make a difference, to improve the lives of our constituents, which today includes not just commodity producers but all people at one level or another in one

way or another. We also see ourselves as actively investing in the process of human capital development. To the extent that our research incorporates the efforts of graduate students, we are educating the next generation of agricultural economics professionals. With regard to teaching, we take pride in our reputation for high quality instruction with a practical emphasis. In our advising of students we tend to go beyond making sure they meet all their graduation requirements, often taking on a mentoring role to foster personal and professional development in a broad sense. Extension programs, especially those directed toward leadership development, take this thrust well beyond our campus classrooms and advising sessions. I suppose in many respects what I am essentially talking about here is the tendency for many of us to view our work as agricultural economists not just as a profession or career but as something of a calling. Mike Martin, in his presentation as a part of the SAAS Symposium, emphasized the land-grant tradition of serving "the public interest." While we as economists surely recognize the difficulty of defining or measuring that concept, most of us are driven largely by our desire to pursue it through our professional activities and efforts.

Recent Trends/Issues in Our Discipline and Questions Raised

The previous section outlined my characterization of our historical distinctives and ways in which we might well strengthen them in the future. With that as a context or point of reference, let me very briefly identify what I consider to be six important trends or issues we face as a profession and some questions they raise in my mind. While my thoughts are certainly colored by my observations and experiences at the University of Tennessee, I believe all of these trends or issues are of some relevance throughout departments in our region.

Increasing pressure to obtain grant and contract funding

While not new, this pressure seems to be increasing at an increasing rate what with de-

clining base support in real terms from traditional federal and state sources. We at Tennessee were just recently challenged to increase extramural funding 25 percent each year indefinitely. This trend raises real concerns in my mind as to whether we can maintain and even strengthen our distinctives in light of the restructuring of incentives to motivate greater grant and contract activity. Our administration recently announced a formal incentive program in which faculty can generate a salary bonus equal to 50 percent of their salary that is covered by extramural funding up to a maximum of six months salary, i.e., a maximum bonus amounting to 25 percent of their 12-month salary. As an economist I certainly cannot argue with using economic incentives to change behavior. However, as an economist I also remember something about the substitution effect with a limited budget, of time and energy in this case. Relatively speaking, the incentive has been reduced for some important applied, problem-solving research and extension efforts (that are not competitive for extramural funding), as well as for participation in undergraduate teaching and advising efforts. This concerns me greatly.

Integration of research, teaching, and extension

We at Tennessee have recently gone through the process of merging our heretofore separate extension and research-teaching departments (as has LSU). Some grant programs now require research, extension, and teaching components within proposals. We have also been considering how to define the appointments for several positions we hope to soon open for searches. We now have two 100-percent research positions in our department, as well as seven 100-percent extension positions from the recent merger. What is the future of split appointments, in light of the increasing grant and contract pressure noted above as well as more demanding requirements for tenure in many universities? While individual split appointments offer "built-in integration," I wonder sometimes about the general applicability of the synergy or complementarity arguments,

especially between research and undergraduate teaching/advising. What about the economic notion of specialization according to comparative advantage within a department? Is there a place for 100-percent teaching/advising positions, not just for those who can't cut it on the research side, but for those who simply want to dedicate themselves to what they feel called to—something in which they possess a strong comparative advantage?

Agribusiness emphasis in teaching programs

Many departments in our region and throughout the country have shifted away, relatively speaking at least, from agricultural economics toward agribusiness (management, marketing, and finance) at the B.S. and M.S. levels. For example, at Tennessee we no longer have a dedicated undergraduate course in production economics, but we do have a course addressing agribusiness marketing and professional selling. Students and prospective employers are very high on the latter, and I am certainly glad we have this course. However, I fear that in this process we have lost a degree of our historical distinctives. Our curricula traditionally have given our students a heavy dose of "the economic way of thinking" by hammering hard on fundamental microeconomic principles: opportunity cost, marginal analysis, diminishing returns, elasticity, externalities, and the role of economic incentives. I believe this can still be done to a reasonable extent within our agribusiness programs, but it is a challenging task. My observations of our seniors' performance at Tennessee on the major field exam they take in our Senior Seminar raise concerns in my mind about how well we are doing at this. And to be honest, my observations of the performance of the (presumably best) students from our region in the SAEA Quiz Bowl do likewise.

Information and communication technologies

I am uneasy about two directions that the new and more powerful technologies in these areas may be pushing us. The availability of more data of various sorts and greater data-crunch-

ing power certainly offers the potential for increasing the usefulness of our research efforts. However, it also threatens to reinforce what I (and others) believe to be our tendency as a profession toward relatively too much emphasis on tools for quantitative analysis. In an article selected for the AAEA 75th Anniversary Issue in 1993, Just and Rausser warn the profession:

(W)e should resist the temptation to let increased computer power substitute for analytical thinking. . . such tools will never substitute for the experience one gains by interacting with people in the field. (p.79)

Houck, in his 1992 AAEA Presidential Address a year earlier argued similarly:

We need to avoid developing a generation of unimaginative methodological technicians in our field. (pp.1064–1065)

A guest commentator on National Public Radio just last week addressed this issue, claiming that, in effect, the availability of more data and computer power will put even greater premium on judgment, intuition, creativity, and insight.

The second direction I am uneasy about is that of distance learning. Call me a traditionalist, but I am concerned about what is lost in moving away from the interpersonal model of the educational process. I recognize there are technologies that can mimic the interpersonal nature of the traditional classroom. However, because of their cost I question whether we can ever hope to use them on a widespread basis. The more impersonal distance learning approaches may be reasonable for courses or programs that essentially involve "training" students, giving them technical information to prepare for a specific occupation. However, I am not sure distance learning can generally be very effective if our objective is "education," helping students learn to think critically and develop their problem-solving and interpersonal skills. There seems to be a prevalent mentality, particularly among administrators, that if the technology exists we should use it, regardless of the cost or impact on the teach-

ing-learning process. We at Tennessee are under pressure to move aggressively toward offering 25 percent of our credit-hours through distance learning channels. My point is simply that we should consider both benefits and costs and use discretion in decisions about the who, what, how, and how much questions regarding distance learning.

Biotechnology emphasis

We are all aware of the rapidly growing emphasis upon biotechnology, especially genetic engineering, within agricultural science. This trend is reflected in many ways, but particularly in the availability of grant and contract funding and the nature of new or replacement research positions in our universities. And while no one can deny the tremendous *potential* benefits from discoveries in the hard sciences, the extent to which these benefits will actually be realized is much more of a social science issue or question. How we deal with concerns related to ethics, property rights, environmental impacts, health risks, and other matters will influence how the biotechnology revolution actually plays out over the next couple of decades. Economists and other social scientists have a critical role to play in connection with this issue, but I am not sure granting agencies and administrators are yet convinced that we have much to offer. This is a challenge we cannot afford to avoid addressing aggressively.

Markets for our M.S. and Ph.D. graduates

We all have a stake in the matter of how these markets function. Questions and concerns regarding things such as market structure, apparent disequilibria, imbalances among sub-fields, and the mix of domestic and international students are nothing new, but they will not go away. Most of you probably know that we at Tennessee chose to finally "bite the bullet," eliminating our Ph.D. program to allow focus on an M.S. program with dual tracks in agricultural economics and agribusiness. Given the size of the market for Ph.D. graduates in the foreseeable future, how

many Ph.D. programs are really needed in our region and nationwide? At the same time, many departments are having difficulty hiring capable new faculty members, especially in our more traditional subfields and in extension positions. The overall tightness of the U.S. labor market is certainly a factor in all this, resulting in attractive offers from the agribusiness industry for our better B.S. graduates. In light of this, and as Hal Harris asked yesterday in the opening symposium, how will we replace the large group of agricultural economists who are expected to retire within the next 10 years? Of course, we may not need to worry about this if those open positions are redirected to the biotechnology area.

The Land Trust Phenomenon

My shift now to a discussion of a specific subject matter topic is a bit abrupt and somewhat awkward, I fear. However, I would like to use the recent surge in activity by private land trusts as an illustration to tie together and perhaps reinforce some of the points I tried to make earlier about the distinctives of agricultural economics.

The first wave of concern about protection of agricultural land from conversion to developed uses arose in the late 1970s as a result of increasing suburbanization combined with the short-lived scare regarding adequacy of land resources to meet growing world food needs. This first wave crested with publication of the National Agricultural Lands Study in 1981, but subsided gradually through the 1980s as we returned to the more traditional problem of excess capacity. A second wave of concern about conversion of rural land to developed uses began to build in the early 1990s as urban sprawl accelerated dramatically. However, it seems clear that the concern now has little to do with agricultural production capacity. Rather, the concern is largely about the pattern of land use development in rural areas, especially at the urban fringe, focusing on the loss of open space in general and specific scenic or environmental amenities in particular (Daniels; Edleman, Roe and Patton; Garkovich).

In response to this second wave of concern, the number of public programs supporting purchase of agricultural conservation easements increased substantially during the 1990s. State programs doubled from 10 to 20, local programs more than doubled from 15 to 34. However, in terms of public dollars committed to those programs and acreage protected, their impact has been rather limited overall. Only about 820,000 acres had been protected as of 2000, and most of these were concentrated in just a few states and counties (AFT, 2000). A recent contingent valuation study conducted by the American Farmland Trust found that residents of three counties on the urban-rural fringe of Chicago would be willing to pay nearly \$500 a year for five years to permanently protect 20,000 acres of farmland in their county from development (AFT, 1999).

In addition to these agricultural land protection efforts, the Land Trust Alliance reported that 1998 and 1999 saw a nearly 90-percent success rate for the more than 100 state and local ballot measures each year calling for greater funding of programs to protect open space or establish parks and greenways. Consistent with this is data from a 2000 national survey commissioned by Smart Growth America indicating that 77 percent of respondents favored "having government use tax dollars to buy land for more parks and open space and to protect wildlife" (LTA).

However, even given this upward trend in public sector activity to protect land, many people and groups around the country appear unsatisfied and unwilling to rely exclusively on public sector initiatives. As Gustanski sees it:

(M)any people across the country have become frustrated and disillusioned by the failings of various government programs to adequately protect cherished lands from sprawling development. This disappointment factor has played a significant role in the phenomenal growth of land trusts. (p.17)

In a 1996 national survey Gustanski found that only 4.7 percent of respondents agreed that "too much is already done to protect open

space," while 77.7 percent agreed that "policies protecting open space could be stronger."

The Land Trust Alliance periodically conducts a National Land Trust Census. Data from the 1988 and 1998 censuses characterize the nature of this growth in land trust activity. While the Nature Conservancy, having protected about 11 million acres of land to date, continues to play a dominant national role among private land trusts, the rapid growth over this decade was at the local and regional level, where the number of private land trusts increased by over 50 percent between 1988 and 1998, from about 750 to over 1,200. Even more impressive has been the growth in acreage protected by local and regional land trusts, which more than doubled between 1988 and 1998 from about 2 million to 4.7 million. While 40 percent of these land trusts are involved in protection of farm and ranch land, the emphasis of most tends to be more upon wetlands, forests, river corridors, and wildlife habitat. This estimated 4.7 million acres nationally was protected by one of four methods: 1) acquiring and holding fee-simple ownership, 2) acquiring a conservation easement, 3) acquiring ownership and transferring it to a governmental agency, or 4) other means, such as deed restrictions or acquisition of mineral rights. The relative importance of conservation easement acquisition increased dramatically over this period, accounting for 43.5 percent of the total acreage protected in 1998. The number of land trusts in 12 Southeastern states has grown faster than the number nationally, more than doubling from 65 to 142 between 1988 and 1998. And as a method of protection conservation easement acquisition is even more important in the Southeast, accounting for 60.8 percent of the total acreage protected in 1998 (LTA).

It should be noted that while the first land trust was formed in 1891 and approximately 200 existed as of 1980, the rapid growth in land trust activity over the last two decades was certainly facilitated by an obscure provision in the Tax Reform Act of 1976. Section 170(f) allows a taxpayer to claim an income tax deduction for the charitable donation of a 30-year conservation or historic preservation easement to a qualified charitable organiza-

tion. A year later the law was amended to require donated easements be perpetual. In 1980, new tax legislation slightly modified the rules for deductibility. Section 170(h) requires that land provide "significant public benefit" to qualify for a tax deduction. While land trust representatives were initially concerned about how this phrase might be interpreted, a series of favorable IRS rulings in the early 1980s reassured them that the phrase would be broadly interpreted (Small).

More recently, an additional tax incentive for donation of conservation easements was included in the 1997 American Farm and Ranch Protection Act. Section 2031(c) essentially says that when an owner of land subject to a section 170(h) conservation easement dies, he/she can exclude up to 40 percent of the value of this land for federal estate tax purposes if the land is within a 25-mile radius of a metropolitan statistical area or a national park or wilderness area, or within 10 miles of an urban national forest. Section 2031(c) also includes a provision that allows an executor, a trustee or an heir to donate a qualified conservation easement after the death of the landowner (Small). Several states have also implemented policies or programs providing financial incentives to donate conservation easements (Vance and Buttrick).

What I would like to engage in now is a brief and (admittedly) superficial analysis of the process of institutional change or adaptation that has occurred with respect to rural land use allocation over the past quarter century. Over this period we have witnessed growing dissatisfaction with the outcomes resulting from land-use decisions by individual private land owners, guided strictly by economic incentives within the free market. Given the presumption that some open space land generates positive externalities, typically with public good characteristics, it is clear that the potential exists for increasing net social benefits by adjusting the pattern of land use to keep certain land in open space uses. What we have seen institutionally, in broad brush terms, was an initial flirtation with the idea of strict land use regulation through zoning, followed by public sector initiatives involving purchase of land or conservation easements with tax

revenue. While these public sector initiatives continue, they are being complemented, and may well be dwarfed, by collective efforts within the private sector on the part of land trusts. I would like to suggest the importance of distributional considerations and incentives in relation to this institutional adjustment process, as well as factors not typically considered within the traditional economic framework of thinking. However, before I do I would like to set the stage by making reference to several conceptual insights provided some time ago by a true student of land-use policy and a person who has also been a colleague and friend to many in this room.

Jim Hite published a book titled *Room and Situation* in 1979 during the waning days of the movement at the national level, and in many states, to establish a comprehensive land-use policy. In the first chapter Hite writes:

Remembering that the essence of land is space, the impetus for new land-use policy can be conceptualized as the demand for more space over which environmental amenities of particular types and qualities can be found. (p.4)

Later in that chapter, Hite adds:

John Stuart Mill was perhaps the first to recognize that aesthetics could be a valuable product of land . . . in its natural state. This latter observation of Mill's is no small contribution. Even today, economists have generally failed to recognize explicitly the peculiar productive capabilities of land in its wild and rustic form. (p.13)

He develops the implications of this notion further in a section titled "Unique Areas and the Market," where he contends:

Land is not a homogeneous product. In some ways, every parcel of land is unique. . . . Of course, the Grand Canyon and other national parks land are special cases. There are many **other parcels of land** that are less majestic, less interesting to the public, but that are also unique in important ways. In many cases, these lands **are unique only within some local or regional con-**

text—areas of regional historical importance or nesting grounds for species of wildlife that are locally rare. For such lands, the **potential for rigging the market by use of taxes and subsidies or by acquiring less than fee-simple ownership** is fairly debatable. (p.125–126)

In his final chapter, Hite concludes:

(L)and-use policy ought to confine itself as much as possible to the **general restructuring of institutions which guide land use** rather than detailed, *ad hoc* decisions on particular situations. . . . Broad, institutional policy cannot totally avoid making such subjective judgements, but its focus falls primarily on **creation of incentives and disincentives to guide individual decision-makers.** (p.297)

What has taken place over the past quarter century with regard to institutions influencing rural land-use allocation appears to me highly consistent with Hite's conceptual insights and recommendations.

Why did we only flirt with the idea of strict land-use regulation through zoning, even though net social benefits could have been increased? The distribution of impacts, with benefits spread broadly and thinly across the general public but costs concentrated on a relative small number of landowners, ultimately made this institutional option a non-starter politically. What was needed was an institutional option that would redistribute enough of the benefits from the general public to landowners to produce a mutually beneficial exchange (MBE). Enter public sector programs to purchase land outright or acquire conservation easements from willing landowners. However, as I argued earlier, the general public appears to consider these public sector initiatives "too little, too late." While such public land protection efforts are politically possible under certain circumstances, their political appeal may not be very strong in general. Why? If such efforts require legislative initiative to raise taxes or divert funding from other priorities, many legislators may be reluctant to do so. At the same time, supporters of such efforts probably do not represent a particular

strong lobbying force. If such efforts require a voter referendum, while most voters may support the general goal, many may harbor a lack of trust in or question the competency of governmental agencies to effectively and efficiently accomplish the goal.

Given this point of reference regarding direct public sector efforts, what is it about subsidization of private land trust acquisition of conservation easements that makes this institutional option a potentially more effective one in producing MBEs? To answer this question it is helpful to identify the key participant groups with interests in this matter and outline how this institutional option redistributes costs or shifts the incentive structure for them, compared to the direct public sector option.

Let's look first at the group I will call land trust activists, the folks who establish and work for land trusts on a paid or volunteer basis. Rather than spending their time and money lobbying legislators for land-use regulations or programs to acquire conservation easements, or campaigning for voter referenda, these activists can direct their efforts toward identification of and negotiation with willing owners of key land parcels, as well as solicitation of funds from potential contributors. The land trust option provides a mechanism for harnessing the passion of these folks and a channel through which they can express very strong values apart from their (perhaps quite) limited ability to pay in monetary terms.

What about these potential contributors mentioned above? I see these as people who are not hard-core activists, but who place value on open space protection and are willing and able to give substantial amounts if they perceive that they can make a real difference. Several factors would appear to reduce the strength of the free rider tendency in this situation, or more generally to encourage greater support for land trust efforts than for similar direct public efforts. First, land trusts typically can point to a specific parcel of land when they solicit potential contributors. Second, some potential contributors may respond more favorably to solicitation of voluntary donations rather than mandatory taxes. Third, potential contributors may view land trusts more favorably with regard to matters of trust or

competency. Finally, if potential contributors are inclined to support land trust efforts at all, the tax deductibility of donations will tend to increase the donation level.

Now let's look at the role of the general public, the folks who place little or no value on open space preservation. Even if they are mildly supportive, they are likely to succumb to the free rider trap. The tax subsidy provided for donations to land trusts effectively draws this group into a low level of participation. Members of this group "pay" indirectly, almost invisibly, through higher taxes than would otherwise be needed or fewer public services than would otherwise be provided.

Before turning to landowners and elected officials, the other key participant groups, let me make a summary comment regarding the first three participant groups discussed above. One of the key features of this institutional option involving subsidization of private land trusts is that it allows for differential contribution levels from people with differential intensities of preference in support of open space protection.

For at least some landowners, the private land trust approach has benefits relative to the direct public program as well. Beyond possible trust or competency considerations, the tax break can make a very substantial difference at the margin. This is especially true for landowners who possess residential or other sentimental attachment to the land parcel in question.

Finally, what about elected officials? Compared to land use regulation or a tax-supported public program the option of a tax subsidy for private land trust efforts would appear to be more politically appealing. With the tax subsidy, benefits are concentrated on a relatively small number of people and fairly visible, while the costs as noted above are spread thinly and practically invisible.

I am tempted at this point to launch into what would surely be a diversion, a discussion of general principles regarding advantages that subsidization of private, non-profit efforts may have over direct public programs. These advantages, outlined above for the case of land trusts, would appear to apply to a variety of efforts directed toward provision of public-

good type benefits, e.g., recycling programs, charter schools, and faith-based social welfare programs. However, I will resist this temptation and move toward wrapping up my comments about land trusts.

While much of my focus has been on land trust activity and tax subsidies for donations to land trusts, I must emphasize at this point that a real key in this story of institutional change has been the availability of the conservation easement as a specific mechanism for land protection. In a recently published book titled *Protecting the Land: Conservation Easements Past, Present, and Future*, Squires argues that the conservation easement is an increasingly attractive tool because:

In many ways, it is a hybrid of the tools that have been used to protect lands throughout the twentieth century. (p.xxi)

Squires supports his argument by quoting from an earlier book by Diehl and Barrett:

Conservation easements occupy an appealing niche in the array of land protection techniques—halfway between outright public or nonprofit ownership, at one extreme and government land-use regulation at the other. Easements are more permanent and often restrictive than land use regulation, which can shift with the political winds. At the same time, easements are tailored to the protection requirements of the particular property and to the desires of the individual landowner. Easements keep property in private hands and on the tax rolls, and also carry a lower initial price tag than outright acquisition. (p.2)

The conservation easement mechanism has opened the door for MBEs between landowners and entities (public agencies or private land trusts) that represent interests in the broader social benefits stemming from open space uses of rural land. See Buist et al. and Wiebe et al. for extended discussions of the role of conservation easements in agricultural land protection.

My extended discussion of the land trust phenomenon has been intended as an illustration of a subject matter issue that fits well with our disciplinary distinctives. First, our micro-

economic focus gives us good insights into the fundamental question at hand as to how rural land will be allocated among competing uses. Our applied, problem-solving orientation is appropriate for diagnosing the difficulty posed by the presence of public-good type benefits associated with open space uses of rural land. Our institutional perspective encourages us to explore institutional options that might redistribute benefits and/or costs or shift the incentive structure, allowing MBEs that would increase social benefits generated by the pattern of rural land use. Our interdisciplinary openness allows us to recognize that factors not typically included within quantitative economic models or even economic mindsets are important to this issue and that non-traditional methodological approaches such as case studies may be warranted. Finally, this issue is one in which we can express our participant mentality in seeking to make a difference through our research, extension, and teaching activities. In a paper I presented at the SERA-IEG-10 Meeting in May 2000, I outlined a number of researchable questions, extension programming opportunities, and teaching applications related to land trust activities. To sum up then, the land trust phenomenon is the type of subject matter issue that Pasour might well have had in mind when he recommended to us as a profession in his 1993 AJAE 75th Anniversary Issue article that:

(M)ore attention should be given to 'the economic way of thinking' or intuitive economic analysis and correspondingly less devotion to formalism and mastery of technique. (p.65)

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